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**GAO**

Report to the Chairman, Committee on  
the Budget, U.S. Senate

September 1987

# FARM PROGRAMS

## Analysis of Options for Targeting Payments and Crop Loans



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United States  
General Accounting Office  
Washington, D.C. 20548

Resources, Community, and  
Economic Development Division

B-225236

September 10, 1987

The Honorable Lawton Chiles  
Chairman, Committee on the Budget  
United States Senate

Dear Mr. Chairman:

In response to your May 13, 1986, request, we have analyzed options for targeting farm price and income support payments and crop loans. Among the options are a lowering of the payment limit, redistributing payments to financially stressed farmers, and setting limits on crop loans. We have also gathered information on the 1985 distribution of payments and loans.

We are sending copies of this report to the Secretary of Agriculture and other interested parties.

This work was performed under the direction of Brian P. Crowley, Senior Associate Director. Other major contributors are listed in appendix IV.

Sincerely yours,

A handwritten signature in cursive script that reads 'J. Dexter Peach'.

J. Dexter Peach  
Assistant Comptroller General

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# Executive Summary

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## Purpose

Despite sharply higher levels of federal spending on farm programs, large numbers of American farmers are in financial trouble. This seeming paradox has raised the question of whether federal spending can be reduced while program benefits are targeted to financially stressed farmers.

At the request of the Chairman, Senate Committee on the Budget, GAO examined these issues by

- analyzing a targeting option that redistributes payments from financially sound farmers to financially stressed farmers and
- examining payment and loan limit options that cap benefits to larger farms, regardless of their financial condition.

This report provides specific, quantitative analytical results for various targeting options, as well as information on the distribution of farm program payments and crop loans. A complementary June 1987 report by GAO provides a more qualitative analysis of various proposals to target payments; it compares the potential effects of these proposals against policy goals contained in farm legislation.

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## Background

Farmers can enroll in several farm programs designed to support farm income and commodity prices. Program benefits are based on the farmers' level of production—not their financial condition. Wheat, feed grains, cotton, and rice producers are eligible for direct income support payments (deficiency payments) up to a statutory \$50,000 limit when crop prices do not meet a "target price" level set by law. In addition, farmers can place certain crops in storage as collateral to obtain a "non-recourse" crop loan based on a per unit support price or "loan rate." Depending on market prices, farmers may decide to reclaim their crops by repaying the loans with interest or forfeit the crops to the government as full payment for the loan. Cotton and rice producers can also enroll in a marketing loan program designed to reduce storage requirements and permit U.S.-grown commodities to adjust to world market prices.

GAO gathered information on the distribution of payments and crop loans in 1985—the latest year for which data were available. The two primary sources were the U.S. Department of Agriculture's Farm Costs and Returns Survey (FCRS) and Agricultural Stabilization and Conservation Service (ASCS) files. The FCRS data use the farm as the reporting

unit, whereas the ASCS data use the producer as a reporting unit. On larger farms, there are often more than one producer per farm.

GAO analyzed the policy options using FCRS and ASCS data and simulations provided by two Department of Agriculture economic models. GAO used one model, FAPSIM, to examine potential impacts of the options on the U.S. agricultural sector from 1986 to 1990. The second model, REPFARM, used eight hypothetical farms to show how some corn, wheat, cotton, and rice farms might respond, over this same period, to changes in federal policy. While the model is useful for illustrative purposes, it is not designed to provide results that are generalizable.

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## Results in Brief

The option for redistributing payments can be designed to reduce federal spending while increasing payments to many financially stressed farms. The options to lower the payment limit and to set crop loan limits can be expected to reduce federal spending and benefits to larger farms. Such limits could be designed to apply only to financially sound larger farms. This approach would neither increase nor decrease benefits to financially stressed farms.

Administrative feasibility is an overriding concern. For example, equitable definitions of financially sound and stressed may be difficult to determine. Further, farmers must be prevented from circumventing payment and loan limits or manipulating their financial position. And a new administrative apparatus may be needed at the local level to introduce a financial condition or "means" test to the farm programs.

GAO's analysis may not fully account for the degree to which farmers may adjust to farm program targeting. Consequently, potential changes in federal spending and other variables, as estimated in the analysis, may be overstated. The report provides insights, however, for ranking the policy options and examining the general direction and order of magnitude of changes associated with the options.

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## GAO's Analysis

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### Distribution of Benefits

Most farms or producers enrolled in the programs received payments of less than \$10,000 or took out crop loans of less than \$50,000. By farm

size, income, or equity, a small number of farms accounted for a relatively larger share of payments and crop loans. For example, farms with at least \$100,000 in net cash farm income received 20 percent of the 1985 payments but constituted only 7 percent of the farms receiving payments. Farms in the midwestern states received 64 percent of the payments and took out 83 percent of the loan amounts. (See chap. 2.)

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## Redistributing Payments

Under this option, farm program payments are decreased for financially sound farms and increased for financially stressed farms. GAO created four hypothetical payment redistribution scenarios, using various definitions of sound and stressed and different payment levels. In the FCRS data analysis, many farms would have gone from a negative to a positive cash flow with the average payment increase. At the same time, total 1985 payments would have decreased from 45 percent for the most redistributive scenario to 13 percent for the least. Of course, much depends on the definitions of sound and stressed farms, the amount that payments increase or decrease for the particular farms, and the extent of mitigating behavior by farmers.

In the FAPSIM simulations, payments decrease from as much as 37 percent to 10 percent, depending on the scenario. The changes in net farm income, production, and other variables reflect a consistent pattern: larger impacts from the most redistributive scenario, comparable impacts from the middle two scenarios, and lesser effects from the least redistributive scenario. (See chap. 3.)

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## Lowering the Payment Limit

Lower payment limits can be expected to reduce federal spending. GAO's analysis of 1985 FCRS data shows that, if the statutory \$50,000 payment limit had been lowered to \$40,000, an additional 24,000 farms would have been affected by the limit, and farm program payments would have declined by 14 percent. According to 1985 ASCS data, lowering the limit to \$40,000 would have affected 28,000 producers and decreased payments by 5 percent. The different results point out the importance of defining who is eligible for receiving payments. If payment limits can be effectively applied to a farm that is defined more broadly, as in the FCRS survey, the impacts on federal spending could be greater.

The FAPSIM simulations show that a \$40,000 payment limit has very little impact on the farm sector's overall net farm income and crop production. A \$20,000 limit results in a 4-to 5-percent fall in income and basically no change in production. However, the REPFARM case study

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simulations indicate that lower payment limits can lead to significant reductions in the net cash farm income and net worth of certain individual farms. (See chap. 4.)

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### Setting Crop Loan Limits

Loan limits of \$200,000, \$100,000, and \$50,000 in 1985 would have affected numerous farms or producers and substantial amounts of gross crop loans, according to GAO's analysis of FCRS and ASCS data. For example, a \$100,000 loan limit would have applied to 19,000 farms or 30,000 producers and reduced gross lending by as much as 19 percent. Reductions in gross lending do not translate directly into budget savings, which depend on how much of the loans are forfeited or repaid.

The FAPSIM simulations show that the impacts from loan limits on the farm sector are slight, even if the ceiling is lowered to \$50,000. Some USDA officials believe these FAPSIM results appear to understate the probable impacts. The REPFARM case study simulations show that the cotton and rice farms realize more significant losses to their income and net worth than do the corn and wheat farms. (See chap. 5.)

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### Recommendations

This report provides an analysis of various targeting options. GAO is not making any recommendations.

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### Agency Comments

USDA criticized GAO's report, asserting that "the combination of data limitations, model misapplications, and oversight of relevant program features results in conclusions that are not based on careful and rigorous analysis." GAO disagrees with USDA's conclusion. In performing its analysis, GAO used appropriate analytical methods and, as part of its effort, consulted extensively with USDA staff on its methodology and on the use of USDA's data and econometric models. Furthermore, many of the program features that USDA said were overlooked were, in fact, accounted for in the report. USDA's letter and GAO's detailed response are contained in appendix III.

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**Abbreviations**

ARP	Acreage Reduction Program
ASCS	Agricultural Stabilization and Conservation Service
CCC	Commodity Credit Corporation
ERS	Economic Research Service
FAPSIM	Food and Agricultural Policy Simulator economic model
FCRS	Farm Costs and Returns Survey
FSA85	Food Security Act of 1985
GAO	General Accounting Office
NCFI	net cash farm income
RCED	Resources, Community, and Economic Development Division
REPFARM	farm case study economic model
USDA	United States Department of Agriculture



# Introduction

Dramatic changes in the farm sector since the early 1980s have drawn attention to the idea of targeting the benefits of federal farm price and income support programs on the basis of financial need. Farm price and income support programs generally cost several billion dollars annually until 1982, when costs began rising sharply. In fiscal year 1985, these programs cost over \$17 billion. In fiscal year 1986, program costs jumped to about \$25.8 billion. There has also been some concern that farmers with large operations may be benefiting too much from the programs.

In addition, targeting may be an approach to dealing with the well-documented financial troubles of so many farmers. The early to mid-1980s brought a reversal in the economic forces that led agriculture to rapid expansion in the 1970s. Real (inflation-adjusted) interest rates rose, the value of the dollar strengthened, a global recession occurred, U.S. agricultural exports declined while foreign production of agricultural commodities rose, and commodity prices fell. Farmers who made long-term debt commitments based on the expectation of continuing prosperity became vulnerable.<sup>1</sup> Based on 1985 data, the Center for Agricultural and Rural Development estimated that about 10 percent of farm operators were expected to go out of business and about 29 percent were expected to have to sell some assets to stay afloat.<sup>2</sup>

On May 13, 1986, Senator Lawton Chiles, now Chairman, Senate Committee on the Budget, asked us to examine various options for targeting farm programs. We first gathered information on the distribution of program benefits in 1985, the latest year for which data were available. (See chap. 2.) We then used this information to analyze the potential impacts of three targeting options:

- redistributing payments from financially sound to financially stressed farmers (chap. 3),
- lowering the \$50,000 statutory payment limit (chap. 4), and
- capping the amount of crop loans (chap. 5).

In addition to these targeting options, we were requested to analyze the potential impacts of target price reductions in future years (chap. 6).

<sup>1</sup>Two GAO reports describe the extent and causes of the financial stress on farmers and their lenders: *Farm Finance: Financial Condition of American Agriculture as of December 31, 1985* (GAO/RCED-86-191BR, Sept. 3, 1986), and *Financial Condition of American Agriculture* (GAO/RCED-86-09, Oct. 10, 1985).

<sup>2</sup>Center for Agricultural and Rural Development, *Agricultural Restructuring Requirements by Farm Credit System District*, No. 87-SR34, May 1987.

Our analysis focused on certain impacts:

- Farmers' financial condition. If program benefits are targeted on the basis of financial need, what changes could be expected in the income statements and balance sheets of farmers? Who might be helped? Who might be harmed?
- Federal budgetary outlays. What changes might occur in terms of farm program costs? Could there be significant decreases in payments and loan amounts? If farmers could find ways around the targeting rules, what might that mean for any potential changes in outlays?
- Current farm programs. The Congress has established various programs to raise or stabilize commodity prices and farm incomes. It has used approaches such as production controls and export enhancement to influence farm prices and incomes. What impact might the targeting options have on prices, incomes, production, and exports?

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## Price and Income Support Programs

Farm price and income supports are provided to farmers who voluntarily enroll or participate in two basic types of programs.<sup>3</sup> The first is direct payments, including deficiency, storage, conservation, and diversion payments. The second is crop loans, including regular nonrecourse, Farmer Owned Reserve, and marketing loans. This section briefly describes these payments and loans and discusses other aspects of the farm programs—program administration and cost and statutory payment limits.

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## Direct Payments

### Deficiency Payments

When crop prices do not meet a "target price" level set by law, the participating farmer growing that crop receives a cash or, in some cases, in-kind payment as an income supplement. The size of payment is tied to the amount of production. Wheat, corn and other feed grains, cotton, and rice are eligible crops. To receive deficiency payments, farmers must enroll in a program to set aside, or idle, a percentage of their acreage. This program, which is designed to control production, is called the Acreage Reduction Program (ARP).

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<sup>3</sup>These U.S. Department of Agriculture (USDA) programs have been established under the provisions of the Agricultural Act of 1949, as amended (7 U.S.C. 1421 et seq.); the Agricultural Adjustment Act of 1938 (Ch. 30 52 Stat. 31); and the Agriculture and Consumer Protection Act of 1973 (87 Stat. 221). They were authorized through 1990 in the Food Security Act of 1985 (FSA85).

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Storage Payments	Farmers receive payment for storing commodities under the federal government's Farmer Owned Reserve crop loan program (see description in this section).
Conservation Reserve Payments	Payments are made to farm land owners and operators to assist in conserving and improving the soil and water resources of their farms by converting such land to permanent vegetative cover.
Diversion Payments	Paid land diversion payments (cash or in-kind) are made under certain circumstances to farmers who agree to set aside a specified percentage of their acreage base. Diversion payments help to reduce the amount of planted acreage in times of large surpluses. Wheat, feed grains, cotton, and rice are eligible commodities.

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## Crop Loans

Regular Nonrecourse Loans	Farmers can place certain crops under a federal nonrecourse loan. They receive a loan based on a per unit support price or "loan rate" established by law. (The Secretary of Agriculture has limited discretion to adjust the rates.) Farmers can reclaim their crops by paying back the loans with interest; or, they can forfeit their crops to the government and keep the loan proceeds. Wheat, feed grains, soybeans, cotton, and rice are eligible commodities. Wheat, feed grains, cotton, and rice producers who take out nonrecourse loans must first agree to the ARP requirements.
Farmer Owned Reserve Loans	An extension of the nonrecourse loan for up to 3 years is possible if farmers place the crops (wheat and feed grains only) in storage. Farmers cannot take the grain out of storage without penalty unless the market price reaches a specified release price. When the release price is reached, farmers may elect to remove their grain from the reserve but are not required to do so.
Marketing Loans	Marketing loans are nonrecourse loans, except that farmers can reclaim their crops from storage at a repayment rate that may be less than the loan rate. The difference between the repayment and loan rate is an



income support payment. The marketing loan is designed to reduce storage costs and permit U.S. grown commodities to adjust to world market prices. Under a marketing loan deficiency payment provision, farmers who are eligible to take out loans agree not to, but they are still paid the spread between the repayment and loan rates. Cotton, rice, and honey are currently the eligible crops, although the Secretary of Agriculture has the discretionary authority to implement a marketing loan for wheat, feed grains, and soybeans.

**Program Administration and Cost**

USDA's Commodity Credit Corporation (CCC) and Agricultural Stabilization and Conservation Service (ASCS) administer the price and income support programs. The CCC is a wholly owned government corporation that funds the various commodity programs. It relies on ASCS' personnel and facilities to carry out the programs.

CCC net expenditures totaled \$25.8 billion in fiscal year 1986. Tables 1.1 and 1.2 provide a breakdown of CCC net expenditures for fiscal years 1985 and 1986.

**Table 1.1: CCC Net Expenditures, by Commodity, Fiscal Years 1985 and 1986**

Dollars in millions		
	Fiscal year 1985	Fiscal year 1986
Feed grains and products	\$5,211	\$12,221
Wheat and products	4,691	3,440
Rice	990	947
Upland cotton	1,553	2,142
Dairy	2,085	2,337
Soybeans	711	1,597
Interest	1,435	1,411
All other	1,007	1,746
<b>Total</b>	<b>\$17,683</b>	<b>\$25,841</b>

**Table 1.2: CCC Net Expenditures, by Program Type, Fiscal Years 1985 and 1986**

Dollars in millions		
	Fiscal year 1985	Fiscal year 1986
Net commodity loans	\$6,038	\$13,628
Deficiency and diversion payments	7,827	6,230
Conservation reserve payments	•	23
Producer storage payments	329	485
All other	3,489	5,475
<b>Total</b>	<b>\$17,683</b>	<b>\$25,841</b>

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## Statutory \$50,000 Payment Limit

With certain exceptions, total deficiency and diversion payments are limited by law to \$50,000 per person per year. Excluded from the payment limit are gains realized from repaying a marketing loan below the regular loan rate, loan deficiency payments, and additional deficiency payments (called "Findley" payments) received because of the discretionary lowering of the loan rate by the Secretary of Agriculture. Total payments, including those exempted from the \$50,000 limit, are currently limited by law to \$250,000 per person per year. In addition, there is a separate annual limit of \$50,000 per person for conservation reserve payments. CCC crop loans are not subject to a limit.

The payment limit's efficacy has been challenged in recent years. As the spread between target prices and loan rates or market prices has widened, more farms have begun bumping up against the limit. Many farmers therefore have had a strong incentive to reorganize their farms into several operations to qualify for more than a \$50,000 payment. We reported in April 1987 that new producers as a result of farm reorganizations involving a producer nearing or at the payment limit (i.e., paid \$40,000 or more) increased by 9,000 between 1984 and 1986. Additional payments to these new producers were about \$328 million from 1984 through 1986; cumulative costs of new producers from 1984 to 1989 are projected to be as much as \$2.3 billion.<sup>4</sup> In July 1987, we reported on legislative and administrative changes needed to prevent abuse of the \$50,000 payment limit.<sup>5</sup>

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## Data Sources and Economic Models Used in the Analyses

In analyzing the various policy options, we used two primary data sources—the 1985 Farm Costs and Returns Survey (FCRS) and the ASCS payment and loan data files. We also employed two USDA econometric models—the Food and Agricultural Policy Simulator (FAPSIM) and REPFARM. The data sources and models are described briefly below and more fully in chapter 8. Appendix I provides a detailed explanation of the differences between the FCRS and ASCS data.

We want to emphasize that there are no precise projections or estimates in this report. The FCRS and ASCS data analyses and FAPSIM simulations provide insights for ranking the policy options and examining the general direction and order of magnitude of changes associated with the

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<sup>4</sup>Farm Payments: Farm Reorganizations and Their Impact on USDA Program Costs (GAO/RCED-87-120BR, April 1, 1987).

<sup>5</sup>Farm Payments: Basic Changes Needed to Avoid Abuse of the \$50,000 Payment Limit (GAO/RCED-87-176, July 20, 1987).

options. The REPFARM simulations provide results that are case study in nature and should not be generalized. Any potential reduction in federal spending, identified in chapters 3 through 5, does not account for the costs of implementing any new policy. In chapter 8, and at selected points in other chapters, we detail the major limitations of the data and analyses.

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**F CRS**

The 1985 FCRS of USDA's Economic Research Service (ERS) and National Agricultural Statistics Service is the only current, comprehensive source on the distribution of payments and loans by sales class, income, equity, debt-to-asset ratio, and other indicators of farm operators' financial status. The FCRS is an annual survey of farm operators selected from a probability sample. Most of the distributional information in chapter 2 and appendix II come from the FCRS. We also used the FCRS data in our analysis of the payment and loan limit and payment shift options. The data are aggregated by groups of farms.

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**ASCS**

The ASCS payment history and loan files provide data on actual 1985 payments and crop loans by size of payment or loan. Some distributional data in chapter 2 and appendix II are based on ASCS data. These ASCS data are also used in our analysis of the payment and loan limit options. These data are not used in analyzing the payment redistribution option, which shifts payments from one group of farmers to another on the basis of a financial condition or "means" test, because the ASCS files do not contain information on the farmers' financial position. The ASCS payment and loan data are aggregated by groups of producers.<sup>6</sup> Particularly for the larger operations, there may be more than one ASCS producer per FCRS farm. As explained in later chapters, this fact has important implications for our analysis.

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**FAPSIM**

We used FAPSIM, an econometric model of the U.S. agricultural sector, to simulate the various policy options and analyze their potential impacts between 1986 and 1990. Some of the key variables estimated by FAPSIM are aggregate net farm income, commodity production and prices, exports, planted acreage, federal deficiency and storage payments, dairy purchases, and farmer participation in government commodity programs. Our methodology for FAPSIM is explained in detail in chapter 8.

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<sup>6</sup>Producers are the same as "persons" for the purpose of applying the \$50,000 payment limit.

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## REPFARM

The REPFARM model enabled us to analyze the potential effects of the payment and loan limits and target price reductions on eight selected farms from 1986 to 1990. REPFARM simulates the complex physical and financial interrelationships of individual farm operations. We identified corn, wheat, cotton, and rice farms (two per crop) for the REPFARM simulations and focused on potential impacts on net cash farm income, net worth, and resource allocation.

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## Recent GAO Report on Targeting Payments

We recently issued a related report, Farm Payments: Implications of Targeting Farm Income Supports (GAO/RCED-87-99, June 10, 1987). It evaluates a number of targeting proposals, including:

- basing payments on a financial condition or means test,
- lowering the payment limit,
- basing payments on farm size (smaller farms get higher payment rates), and
- applying declining payment rates as production volume increases.

The analysis in the June 1987 report compares the potential effects of such proposals—of which the first two are similar to options examined in this report—against agricultural policy goals articulated in farm legislation. These goals include: supporting farm income, encouraging adequate commodity production, preserving family farms, fostering efficient agricultural production and distribution, ensuring administrative feasibility, and controlling federal budget outlays.

This report complements the qualitative discussion in the June 1987 report by providing a more specific, quantitative analysis of potential impacts of various targeting options. For example, our June report discusses lower payment limits generally. This report specifically examines the percentage changes in farm program payments, farm income, and crop production under a hypothetical \$40,000 or \$20,000 payment limit.

The June 1987 report observes that the targeting proposals would, with varying precision, generally provide a greater share of income supports to low-income farms. The outcome of each proposal depends greatly on specific program design, particularly on how the target population is defined. Farms differ greatly in terms of financial condition, the type of products they produce, size, ownership and operating arrangements, and amounts of farm and nonfarm income. For example, some farms with a small amount of program crop production have substantial income from nonprogram crops or other sources; thus, targeting more

payments to farms with smaller program crop production could better help some financially needy farms but could also allow payments to financially sound farms. We highlight some of the major results from the June 1987 report in this report's chapters 3 and 4.

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## Overview

In chapter 2 of this report, we present highlights from the data on the distribution of payments and crop loans; a detailed discussion and the data tables are included in appendix II. Chapter 3 focuses on the targeting option that redistributes or shifts federal farm program payments from "financially sound" to "financially stressed" farms. In chapters 4 and 5, we examine the payment and loan limit targeting options, which would restrict benefits to larger farms, regardless of their financial condition. Chapter 6 presents the results of our analysis of lower target prices, which would affect all farms receiving payments. Finally, we summarize our analyses and present our overall observations in chapter 7.

# Distribution of Farm Program Payments and CCC Crop Loans

This chapter highlights major examples from our analysis of the distribution of payments and crop loans. Appendix II presents distributional tables and discusses the data in detail.

Through its 1985 FCRS, ERS has identified almost 25 percent of the nation's 1.6 million farms as participants in the federal government's direct farm payment programs and over 14 percent of the farms as borrowers of CCC crop loans in calendar year 1985.<sup>1</sup> The survey indicates that about 384,000 farms received direct payments totaling about \$4.6 billion, and about 222,000 farms borrowed over \$9.3 billion from the CCC.

ASCS data show that about 980,000 producers received about \$6.3 billion in payments in crop year 1985.<sup>2</sup> According to ASCS data that we compiled, almost 462,000 producers took out loans totaling about \$15.2 billion in the 1985 crop year.<sup>3</sup>

## Distribution of Farm Program Payments

We analyzed the FCRS data using six farm group classifications: size of payment, farm size (sales and acres), income, equity, debt-to-asset ratio, and regional location. Our analysis of the 1985 FCRS data show:

- Most farms received small payment amounts, but some farms received a large share of payments.<sup>4</sup> For example, over 66 percent of the participating farms received less than \$10,000 and accounted for about 21 percent of total payments. In comparison, less than 4 percent of the participating farms received \$50,000 or more and accounted for over 23 percent of total payments.
- Payments tended to be distributed more heavily towards the larger farms and farms in higher income classes. For example, farms with sales of \$250,000 or more (about 13 percent of all participating farms)

<sup>1</sup>The 1.6 million farms identified by the FCRS differ from the 2.3 million farms officially recognized by USDA. According to ERS's August 1986 Agriculture Information Bulletin No. 500, most FCRS undercounting is for the small sales classes. ERS maintains that the FCRS gives a fairly close count of commercial farms—those with sales of \$40,000 or more.

<sup>2</sup>The FCRS counted all direct government farm payments, including deficiency, diversion, storage, and conservation payments. FCRS data are for the 1985 calendar year. ASCS data represented deficiency and diversion payments. ASCS crop year information is for payments and loans made for crops harvested during 1985, regardless of when the payments and loans were made.

<sup>3</sup>"Crop loans" taken out were nonrecourse loans. See chapter 1 for a description of the nonrecourse loan program.

<sup>4</sup>Participating farms are defined here as those receiving direct payments and idling acres as a result of a government program.

received over 37 percent of total payments. In contrast, farms with sales of less than \$40,000 (about 25 percent of all participating farms) received less than 7 percent of total payments. Analyzed by net cash farm income (NCFI) class,<sup>5</sup> farms with NCFI of \$100,000 or more (about 7 percent of all participating farms) received more than 21 percent of total payments; in comparison, farms having NCFI of less than \$0 (nearly 33 percent of all participating farms) received about 27 percent of total payments.

- Farms with negative NCFI would have needed another \$4 billion in payments to reach a zero NCFI.
- About 4 percent of the participating farms had equity of \$1 million or more; they received 13 percent of total payments and had an average payment of about \$40,000. The technically insolvent farms, which had equity of less than \$0, were about 8 percent of all participating farms and received 9 percent of total payments; their average payment was about \$13,000.
- The average payment was highest for participating farms in the Pacific (California, Oregon, and Washington) and Delta (Arkansas, Louisiana, and Mississippi) states—about \$31,000. The average payment for a farm in the Corn Belt (Iowa, Illinois, Indiana, Missouri, and Ohio) was about \$8,000. Participating farms in the midwestern (Corn Belt, Lake States, and Northern Plains regions) states received about 64 percent of total payments and accounted for about 76 percent of all farms receiving payments.

## Distribution of CCC Crop Loans

We analyzed the distribution of CCC crop loans using seven farm classifications: size of loan, size of farm program payment, sales, income, equity, debt-to-asset ratio, and regional location. Our analysis of the 1985 FCRS data shows:

- Most farms took out small loans. Farms receiving loans of less than \$50,000 accounted for over 75 percent of the farms receiving crop loans but only about 36 percent of the total loan amounts. In comparison, less than 9 percent of the farms taking out loans accounted for over 39 percent of the total loan amounts. These farms took out crop loans of \$100,000 or more.
- Farms taking out large loans also received larger direct payments, on average. For example, the average crop loan for farms receiving at least

<sup>5</sup>Net cash farm income is defined in the analysis of FCRS data as gross sales and other farm-related income (including government payments and net CCC loans) less cash operating expenses and interest and principal repayment. Not included are inventory adjustments, non-farm income, family living expenses, and depreciation.

- \$50,000 in payments was about \$163,000. Farms receiving less than \$10,000 in payments had an average crop loan of about \$24,000.
- Farms having sales of \$500,000 or more accounted for less than 4 percent of the farms taking out loans and more than 15 percent of the total loan amounts. Their average loan was about \$175,000.
  - Farms in higher income classes and with greater equity took out a large share of the loan amounts. For example, farms with NCFI of \$150,000 or more (5 percent of the farms taking out loans) took out over 18 percent of the total loan amounts. At the other extreme, farms with NCFI of less than -\$20,000 (over 12 percent of the farms taking out loans) took out almost 14 percent of the total loan amounts. In addition, farms with equity of \$1 million or more (less than 4 percent of the farms taking out loans) took out over 10 percent of the total loan amounts; in comparison, farms with equity of less than \$0 (9 percent of the farms taking out loans) took out almost 12 percent of the total loan amounts.
  - Farms in the midwestern states accounted for about 82 percent of the farms taking out loans and 83 percent of the total loan amounts. The Delta States region accounted for less than 3 percent of the total loan amounts but had the largest average loan—\$85,000.



# Redistributing Payments to Financially Stressed Farms

This chapter presents our analysis of four payment redistribution scenarios. Using income and balance sheet measures to designate groups of farms as financially sound or stressed, we decreased payments to the sound ones and increased payments to the stressed farms. For illustrative purposes, we settled on certain financial condition or "means" tests and payment levels. We do not, however, advocate any particular means tests or payment levels for use in targeting federal farm programs.

Our analysis included an examination of the 1985 FCRS data to provide information on how groups of farms would have been affected. Also, using FAPSIM to simulate the payment shift option, we examined the potential impacts on the aggregate farm sector.

The extent of farmers' mitigating behavior to qualify for increased payments or avoid decreased payments depends on the potential gains from such behavior and the effectiveness of measures to discourage it. In the FAPSIM simulations, we conducted a "25 percent" sensitivity analysis to account, at least in part, for potential adjustments by farmers to qualify for added payments or avoid decreased payments. We assumed that 25 percent of the total deficiency payments that could potentially not be made under the payment shift would still be made because of farmers' mitigating behavior.<sup>1</sup>

## Overall Results

According to FCRS data, many financially stressed farms would have gone from a negative to positive NCFI with an increase in 1985 federal farm program payments. Farms with very high incomes might not have been significantly affected by the decrease in payments. Much depends on the definition of sound and stressed farms and the amount that payments increase or decrease for the particular farms.

In the analysis of FCRS data, total 1985 payments would have decreased from 45 percent for the most redistributive scenario to 13 percent for the least. In the FAPSIM simulations, payments decrease from as high as 37 percent down to 10 percent, depending on the scenario. The changes in net farm income, production, prices, and other variables reflect a consistent pattern: larger impacts from the most redistributive scenario, comparable impacts from the middle two scenarios, and lesser effects from the least redistributive scenario.

<sup>1</sup>We selected the 25-percent factor based on shorter term estimates in GAO's April 1987 report (GAO/RCED-87-120BR) on the number of new producers resulting from farm reorganizations related to the \$50,000 payment limit. We believe that, over the longer term, steps would be taken to reduce slippage beyond 25 percent.

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## Results From Qualitative Analysis in GAO's June 1987 Report

One of the targeting proposals examined in our June 1987 report was to make payments based on a financial means test. By definition, this proposal would meet the agricultural policy goal of providing more income support to low-income farmers and reducing it to higher-income farmers. The proposal would tend to meet the goal of preserving family farms. The effect on government costs would be uncertain because it is unknown whether this option would (1) encourage a significant number of farmers who otherwise may have left farming to stay and (2) induce nonfarmers to become farmers in order to qualify for the benefits. We also reported that this proposal would not be likely to lead to more efficient program crop production or achieve better government control over program crop supply, and it would be significantly more difficult to administer.

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## Description of Four Payment Shift Scenarios

Among the many possible ways to redistribute payments based on financial need, we created, for illustrative purposes, four scenarios in which payments are shifted. Scenarios A through D differ in terms of (1) which farms are identified as financially stressed and sound and (2) what level of payment is received after the redistribution. Scenario A is the most redistributive (has the greatest impact) in terms of the number of affected farms and amount of shifted payments. Scenario D is the least redistributive. In Scenarios A and C, stressed farms receive payments that are 100 percent more than what they would have received under status quo conditions; sound farms receive no payments. There are more affected farms in Scenario A than C. In Scenarios B and D, stressed farms receive payments that are 50 percent more than what they would have received under status quo conditions; sound farms receive 50 percent less. There are more affected farms in Scenario B than D.

Table 3.1 shows the financial characteristics used to designate stressed and sound farms. These characteristics include equity off-farm income, net cash farm income, debt-to-asset ratio, and sales. After the redistribution, the stressed farms receive 100 or 50 percent more in payments, and the sound farms receive 100 or 50 percent less. Farms that fall outside the stressed or sound groupings would remain status quo, continuing to receive the same payment as before any payment shift. We selected the various financial characteristics of sound and stressed farms after consulting with Senate Budget Committee staff. We again emphasize that the designations are for illustrative purposes only, and we do not advocate any particular means tests.

**Table 3.1: Financial Characteristics of Stressed and Sound Farms and Payment Levels for Four Payment Redistribution Scenarios**

	A	B	C	D
<b>Financially stressed farms</b>				
Equity and	<\$500K	<\$500k	<\$1,000k	<\$1,000k
Off-farm income and	<\$30k	<\$30k	<\$50k	<\$50k
Net cash farm income and	<\$0	<\$0	<-\$20k	<-\$20k
Debt-to-asset ratio and	41-100%	41-70%	41-100%	41-70%
Sales	=>\$40k	=>\$40k	=>\$40k	=>\$40k
Payment increase	100%	50%	100%	50%
<b>Financially sound farms</b>				
Equity or	=>\$500k	=>\$500k	=>\$1,000k	=>\$1,000k
Off-farm income or	=>\$30k	=>\$30k	=>\$50k	=>\$50k
Net cash farm income	=>\$50k	=>\$50k	=>\$100k	=>\$100k
Payment decrease	-100%	-50%	-100%	-50%

Note: Status quo farms are all other farms

Key: < less than  
 > greater than  
 => greater than or equal to  
 k 1,000

For example, under Scenario D, if a farm had a combination of equity less than \$1 million, off-farm income less than \$50,000, NCFI less than -\$20,000, a debt-to-asset ratio of 41 to 70 percent, and sales of \$40,000 or more, that farm would be classified as “financially stressed.” Assuming no mitigating behavior, it would receive a 50-percent increase in payments. If a farm had either equity of at least \$1 million or off-farm income of at least \$50,000 or NCFI of at least \$100,000, that farm would be classified as “financially sound.” Assuming no mitigating behavior, it would receive only one-half of the payment that it would receive under current conditions.

## Farm Group Impacts From Redistributing Payments

Using 1985 FCRS payment data (see app. II), we examined the potential impacts of the four payment shift scenarios. Each scenario, to a greater or lesser degree, would have led to overall decreases in payments, impacts on the incomes of financially sound farms, and some help for the financially stressed farms with a slightly negative NCFI.

As shown in table 3.2, many financially stressed farms would have gained substantially if their payments were doubled or increased by half. In terms of the absolute number of farms and total payments, Scenario A shows the biggest potential change. Approximately 34,000

financially stressed farms would have received an additional \$498 million in payments in 1985. Under Scenario C, financially stressed farms would have received the highest average increase—\$18,882. Scenarios B and D indicate a lesser impact, on average, because payments would have been increased by 50 percent, not 100 percent as in Scenarios A and C.

**Table 3.2: Farms and Payments Under Four Payment Shift Scenarios—Financially Stressed Farms**

Scenario	No. of stressed farms	Payments to stressed farms (in millions)			Average increase
		Before shift	After shift	Total increase	
A	34,000	\$498	\$996	\$498	\$14,647
B	24,000	363	545	182	7,583
C	17,000	321	641	321	18,882
D	12,000	241	361	120	10,000

Source: GAO analysis of 1985 FCRS data.

As shown in table 3.3, large numbers of financially sound farms would have been eligible to lose all or one-half of their 1985 payments under the four scenarios. About 139,000 farms would have been affected by Scenarios A and B and 52,000 farms by Scenarios C and D. The loss of payments would have been largest under Scenario A (\$2.6 billion) and smallest under Scenario D (\$0.7 billion). Under Scenario C, financially sound farms would, on average, have lost the most in payments—a decrease of \$26,981. Scenarios A and C would have had the biggest impact, on average, because sound farmers would have received no payments.

**Table 3.3: Farms and Payments Under Four Payment Shift Scenarios—Financially Sound Farms**

Scenario	No. of stressed farms	Payments to stressed farms (in millions)			Average increase
		Before shift	After shift	Total increase	
A	139,000	\$2,558	\$0	\$2,558	\$18,403
B	139,000	2,558	1,279	1,279	9,201
C	52,000	1,403	0	1,403	26,981
D	52,000	1,403	701	701	13,481

Source: GAO analysis of 1985 FCRS data.

The income gained through increased payments would have helped some financially stressed farms. As table 3.2 shows, the range of average additional payments to financially stressed farms would have been from \$7,583 up to \$18,882 in the four scenarios. Such increased payments

would have helped the average farm in the group of farms with negative NCFI up to -\$20,000. As shown in table 3.4, this farm had an average NCFI of -\$7,288. The lowest income group, with average NCFI of -\$74,436, would not have been easily helped.

**Table 3.4: Number of Participating Farms, Total and Average Net Cash Farm Income, by Income Class, 1985**

NCFI class	No. of participating farms	Total NCFI (in mil.)	Average NCFI	Average payment
\$150,000 or more	13,000	\$3,414	\$262,615	\$50,409
\$100,000 to \$149,999	14,000	1,678	119,857	22,653
\$ 50,000 to \$99,999	47,000	3,215	68,404	17,415
\$ 0 to \$49,999	185,000	3,637	19,659	8,450
-\$1 to -\$20,000	80,000	-583	-7,288	6,191
less than -\$20,000	46,000	-3,424	-74,436	16,295
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>\$7,937</b>	<b>\$20,669</b>	<b>\$11,977</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

The income lost through decreased payments would have had varying degrees of impact on farms with higher incomes. A loss of even \$50,000 to the farm with an income of \$150,000 or more still leaves over \$100,000 in income. As shown in table 3.3, the average loss would have been \$18,403 under scenario A and \$26,981 under Scenario C. These average decreases in payments would have had a more significant effect, however, for some of the farms with lower NCFI.

## Recent Study on Effects of Decreased Payments

In a November 1986 analysis using FCRS data, USDA, Federal Reserve, and Farm Credit Administration officials simulated a decrease in 1985 government payments to farmers in various financial conditions. They used criteria such as debt-to-asset ratio, returns on assets and equity, and equity levels to classify commercial farm operators as good, fair, stressed, or vulnerable. They analyzed to what extent the loss of payments—direct payments and net CCC loans—moved farms from one category to another.

Their analysis indicates that significant payment reductions have a substantial impact. (See table 3.5.) The number of “good” farms decreases from 459,000 under the status quo to 424,000 after a 50-percent reduction and 383,000 after a 100-percent reduction. The number of “vulnerable” farms increases from 53,000 under the status quo to 69,000 if

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payments are reduced by 50 percent and to 101,000 if no payments are made.<sup>2</sup>

**Table 3.5: Number of Commercial Farm Operators by Financial Condition Category Under Reduced Payment Levels, 1985**

Financial position	Status quo	50-percent reduction	100-percent reduction
Good	459,000	424,000	383,000
Fair	81,000	92,000	97,000
Stressed	30,000	38,000	42,000
Vulnerable	53,000	69,000	101,000
<b>Total</b>	<b>623,000</b>	<b>623,000</b>	<b>623,000</b>

Note: Payments include direct payments and net CCC loans.

Source: Johnson, Melichar, and Harshbarger.

**Payment Decreases Under Farm Group Payment Redistribution Scenarios**

Large decreases in federal farm program payments would have occurred under the four payment redistribution scenarios. According to FCRS data, scenario A would have produced the largest decrease—about 45 percent of the \$4.6 billion in 1985 payments. Scenarios B and C would have resulted in similar levels of decreased payments, almost 24 percent. Scenario D would have yielded about a 13-percent decrease in payments. Table 3.6 shows the total payments before and after the redistributions.

**Table 3.6: Total Payments Before and After Payment Redistribution Under Four Scenarios**

	Scenario			
	A	B	C	D
Dollars in millions				
<b>Payments to sound and stressed farms</b>				
Before redistribution	\$3,056	\$2,921	\$1,724	\$1,644
After redistribution	996	1,824	641	1,062
<b>Total decrease in payments</b>	<b>\$2,060</b>	<b>\$1,097</b>	<b>\$1,083</b>	<b>\$582</b>
Percent of total payments	44.8	23.9	23.5	12.7

Source: GAO analysis of 1985 FCRS data.

**Limitations of the Farm Group Analysis**

Four limitations in this analysis of FCRS payment distribution data should be noted. First, although the savings and other financial impacts are stated in rather precise terms, our analysis can at best provide a general sense of the direction and orders of magnitude of change. For example, Scenario C produces significantly more decreases in payments

<sup>2</sup>James D. Johnson, Emanuel Melichar, and C. Edward Harshbarger, "Financial Condition of the Farm Sector and Financial Institutions," November 24, 1986, pp. 22-32.

than D. The FCRS data analysis cannot, however, provide a high level of precision, because FCRS data reliability declines as the data are disaggregated. Second, farms can be expected to adjust to changes in federal policy. Faced with decreased payments, some "sound" farms are likely to find a way to avoid such a classification. Farms that are not quite "stressed" might find a way to qualify for the increased payments. Third, our data did not enable us to identify how many farms with low NCFI and high debt-to-asset ratios also had high off-farm incomes or equity positions. For example, our analysis could count some sound farms with \$75,000 in off-farm income as stressed because they had a negative NCFI and high debt-to-asset ratio. And fourth, the use of FCRS data provides results applicable to farms, not producers as defined in the ASCS data. Larger impacts may be associated with the FCRS data because one farm may have multiple producers (persons).

## Farm Sector Impacts From Redistributing Payments

We used the FAPSIM model and FCRS data to simulate Scenarios A through D. In particular, we examined the potential changes in the farm sector's net farm income,<sup>3</sup> production, acreage planted, prices, and exports. We also assessed the potential impacts on government deficiency and storage payments and dairy program purchases.<sup>4</sup> We ran a sensitivity analysis to account for farmers' mitigating behavior to qualify for increased payments or to avoid decreased payments. The simulations cover the period from 1986 to 1990. Results are expressed in terms of average percentage change from the base case provisions of the Food Security Act of 1985 (FSA85). The use of FCRS data may lead to results that are larger than might be seen with the use of ASCS data.

We expected that a payment redistribution would have various effects. "Sound" farmers with decreased payments would obtain a lower economic return from acres producing crops under the program. Some would convert acres from participating to nonparticipating status and begin producing on acres idled previously under the ARP, so that total acres would increase. Others would convert their acres to producing nonprogram crops. In either case, the drop in participation would cause deficiency payments to decrease. This decrease in payments could be countered by increased payments to stressed farms. If program crop production increased, at least in the short term, prices would become

<sup>3</sup>Net farm income, as used in FAPSIM, is defined as gross farm income less total farm expenses (including depreciation and interest). Not included are inventory adjustments, principal repayment, non-farm income, and family living expenses.

<sup>4</sup>The federal government purchases excess dairy products to support dairy prices.

lower and, in turn, more crops could be exported. Lower prices could lead to more CCC crop loan forfeitures. Lower feed prices would lead to increased milk production and, in turn, higher government dairy payments. Overall, the impacts under Scenario A would be more pronounced than under Scenario D because there are more affected farms and shifted payments. For the payment shift option, much depends, of course, on the size of the groups, the extent to which payments are increased or decreased, and the responses of farmers to being classified as sound, stressed, or almost stressed.

Table 3.7 presents the results of our FAPSIM simulations. Under these simulations, Scenario A has the most impact, Scenario D the least, and Scenarios B and C comparable impacts. Under all scenarios, slight increases in production occur. Wheat, corn, and soybean prices fall to a greater extent than cotton prices, and the lower prices lead to a slight pickup in exports. In every case, Scenario A shows the largest change. Net farm income falls from 10 to 13 percent in Scenario A and 3 to 4 percent in Scenario D. There are sizable changes in federal program costs. In Scenario A, deficiency payments decrease from 28 to 37 percent. In Scenario D, the decreases range from 10 to 11 percent. Storage payments and dairy purchases move higher, partially offsetting the potential decreases in deficiency payments.



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**Table 3.7: FAPSIM Results for Four Payment Redistribution Scenarios: Acreage, Production, Prices, Exports, Payments, Dairy Purchases, and Net Farm Income** (Average Percentage Change From Base Case, 1986-90)

Figures in percent				
	Scenario			
	A	B	C	D
<b>Program acreage planted</b>				
wheat	-4.4 to -5.8	-3.1	-2.6 to -2.7	-1.4
corn	-6.5 to -8.9	-3.3 to -4.7	-2.0 to -3.0	-1.7 to -1.9
<b>Production</b>				
wheat	0.3 to 0.4	0.2	0.2	0.1
corn	1.1 to 1.6	0.6 to 0.8	0.5 to 0.7	0.4
cotton	1.0 to 1.3	0.5 to 0.7	0.7 to 0.9	0.4 to 0.5
soybeans	1.0 to 1.3	0.5 to 0.7	0.6 to 0.8	0.4
<b>Season average farm prices</b>				
wheat	-1.1 to -1.4	-0.8	-0.7	-0.4
corn	-2.9 to -3.4	-1.7 to -2.1	-1.5 to -1.9	-1.0
cotton	-0.6 to -0.8	-0.3 to -0.4	-0.4 to -0.5	-0.2 to -0.3
soybeans	-5.0 to -6.7	-2.7 to -3.5	-3.1 to -4.0	-1.8 to -2.1
<b>Exports</b>				
wheat	0.4 to 0.5	0.3	0.2 to 0.3	0.1
corn	0.9 to 1.0	0.6 to 0.7	0.5 to 0.6	0.3
cotton	0.1 to 0.2	0.1	0.1	0.0 to 0.1
soybeans	1.1 to 1.5	0.6 to 0.8	0.7 to 0.9	0.4 to 0.5
<b>Deficiency payments</b>	-28.4 to -37.4	-16.3 to -20.5	-15.9 to -20.1	-10.0 to -11.1
<b>Storage payments</b>	18.4 to 22.4	9.4 to 12.3	8.0 to 10.7	5.3 to 5.5
<b>Dairy purchases</b>	13.2 to 15.1	8.7 to 10.3	8.6 to 10.4	5.6 to 6.1
<b>Net farm income</b>	-10.2 to -13.4	-5.7 to -7.3	-5.2 to -6.8	-3.4 to -3.6

Note: Where a range is shown, the smaller absolute value represents the sensitivity analysis where 25 percent of deficiency payments that could potentially not be made under the payment shift would still be made because of farmers' mitigating behavior. The larger value represents the results without the sensitivity analysis.

Source: GAO analysis of FAPSIM results.

# Lowering the Payment Limit

This chapter presents our analysis of two payment limit options. We simulated what might happen if a \$40,000 or \$20,000 cap on farm program payments were put into effect. Payment limits could apply to individual producers or farms consisting of one or more producers. We defined the payment recipients in two ways. We used the FCRS definition that reports payments on a farm basis.<sup>1</sup> We also used the ASCS definition that reports payments to each producer.

Payments to farms are not now strictly held to the statutory \$50,000 limit for several reasons. First, the limit does not apply to "Findley" payments—deficiency payments made as a result of an additional discretionary lowering of the crop loan rate by the Secretary of Agriculture. Second, farms may be reorganized into separate units, each eligible for up to \$50,000 in payments. Our April 1987 report details how many farmers have reorganized their operations in the past few years when they neared the \$50,000 payment limit.

Our analysis was performed in three parts. First, we analyzed the FCRS and ASCS distribution data that are presented in appendix II. This analysis provides information on how the options would have affected groups of farms or producers in 1985 in the absence of mitigating actions by farmers. Second, using USDA's FAPSIM model to simulate the hypothetical lower payment limits, we analyzed potential impacts on the farm sector for 1986 to 1990. And third, using USDA's REPFARM model, we examined the potential impacts on selected farms in eight states during the same period. Potential decreases in payments are identified in the FCRS and ASCS as well as the FAPSIM analyses.

Our analysis accounts, to some degree, for farm reorganizations. Such reorganizations are likely to occur to circumvent lower payment limits; their number depends on the potential gains from reorganizing and the effectiveness of legislative and administrative measures to discourage such reorganizations. The FCRS data identify payments to farms and the ASCS data identify payments to producers. (There can be multiple producers per farm.) Therefore, if payment limits could be effectively applied to farms, which are more broadly defined, our FCRS data analysis would give more appropriate results. The ASCS data analysis would better fit current circumstances, where the payment limit applies to producers (persons). In the FAPSIM simulations, we conducted a sensitivity analysis to account, at least in part, for reorganizations spawned by the

<sup>1</sup>Payments made to multiple producers on the same farm are combined and reported as a single payment to the farm.

hypothetical \$20,000 limit. We assumed that 25 percent of the deficiency payments potentially reduced by the limit would still be made because of reorganizations.

## Overall Results

Substantial impacts can be expected from lower payment limits, if reorganizations could be effectively constrained. The FCRS data analysis shows that a \$40,000 limit would have applied to 24,000 farms in 1985 and decreased payments by 14 percent. The ASCS data analysis identifies 28,000 producers and a 5-percent decrease in payments, with a \$40,000 payment limit. The FCRS data analysis indicates a \$20,000 limit would have affected 63,000 farms and lowered payments by 31 percent. By contrast, the ASCS data analysis identifies 79,000 producers and a 19-percent decrease in payments.

Our FAPSIM simulations show that from 1986 to 1990

- deficiency payments decline by 4 percent for the \$40,000 payment limit and 13 to 15 percent for the \$20,000 limit (average percentage change from base case provisions of the Food Security Act of 1985—FSA85);
- net farm income falls by 1 percent under the \$40,000 limit and 4 to 5 percent under the \$20,000 limit; and
- production of wheat, corn, soybeans, and cotton increases less than 1 percent under the \$40,000 and \$20,000 limits.

Using the REPFARM model, our simulations indicate that the lower payment limits generally affect the NCFI of the two rice farms more than the selected cotton, wheat, and corn farms. In the absence of payment limits, most of the farms could receive larger payments. There is, therefore, a strong incentive for these farms to reorganize their operations.

## Results From Qualitative Analysis in Our June 1987 Report

In our June 1987 report on targeting farm payments, we examined the potential effects of a lower payment limit against the criteria of agricultural policy goals articulated in farm legislation. We reported that a lower limit could potentially reduce income support to higher-income farmers; it would not provide more income support to lower-income farmers. Other potential impacts could be lower program costs and less government control over crop supply. Administrative feasibility would be about the same as under current programs. However, if more farmers affected by payment limits sought to reorganize to qualify for additional payments, USDA's work load would increase.

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## Farm Group Impacts From Lowering Payment Limit

We analyzed the FCRS and ASCS payment data to identify potential impacts of a hypothetical \$40,000 or \$20,000 payment limit. Four groups of participating farms are highlighted here: (1) all participating farms, (2) farms with sales of \$500,000 or more, (3) farms with high NCFI and equity, and (4) farms with high NCFI and low debt-to-asset ratios. Although our analysis is limited to these four groups, the potential impacts on other groups could also be assessed. This additional analysis could be done using the FCRS and ASCS data in appendix II.

A data limitation probably causes our FCRS data analysis to overstate the impacts of lower payment limits. The 1985 FCRS did not distinguish among types of payments. Its payments included deficiency and diversion payments, which are subject to the statutory \$50,000 limit, and storage, conservation, and other payments, which are not. Although total storage and conservation payments were small compared with total deficiency and diversion payments, their inclusion will increase the number of farms and amount of payments affected by lower payment limits.

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## Potential Effects of Lower Payment Limits on All Farms

As the limit on payments becomes more restrictive, the potential impact increases. Based on 1985 FCRS data, a \$40,000 payment limit could have affected about 6 percent of the participating farms. This conclusion assumes that farm reorganizations do not occur and that the payment limit is effectively applied to the broadly defined FCRS farm. Farms that received at least \$40,000 in payments in 1985 would have lost \$655 million or about 14 percent of total payments of \$4.6 billion, if a \$40,000 cap had been in effect. A \$20,000 payment limit would have affected over 16 percent of those participating. These farms would have lost \$1.4 billion, or 31 percent of total payments, with this option (see table 4.1).

Based on 1985 ASCS data, a \$40,000 limit, in the absence of mitigating behavior, would have affected less than 3 percent of the 980,000 participating producers. They would have lost \$283 million, or about 4.5 percent of total payments of \$6.3 billion. A \$20,000 limit would have affected about 8 percent of those participating. These farms would have lost \$1.2 billion, or 19 percent of total payments, with this option.

Chapter 4  
Lowering the Payment Limit

**Table 4.1: Farms, Payments, and Decreases in Payments Under Payment Limit Options—All Farms/Producers, 1985**

Dollars in millions				
	\$40,000 limit		\$20,000 limit	
	FCRS	ASCS	FCRS	ASCS
Number of farms/ producers that would have been affected by limits	24,000	28,000	63,000	79,000
1985 payments to affected farms/ producers (actual)	\$1,615	\$1,403	\$2,663	\$2,797
Payments with lower limit <sup>a</sup>	\$960	\$1,120	\$1,260	\$1,580
Decrease in payments	\$655	\$283	\$1,403	\$1,217
Decrease as percentage of total payments	-14.2	-4.5	-30.5	-19.3

<sup>a</sup>Payments with lower limit equals the number of farms/producers affected by the limit times the amount of the limit.

Source: GAO analysis of 1985 FCRS and ASCS data.

**Lower Payment Limits on Farms With Sales of \$500,000 or More**

We analyzed the 1985 FCRS data to determine the potential impact of a \$40,000 or \$20,000 payment limit on farms with sales of at least \$500,000—the highest sales group according to ERS classifications. There were 6,000 farms that received at least \$40,000 in payments and had sales of \$500,000 or more. With a \$40,000 limit in effect, they would have lost \$339 million or about 7 percent of total payments. Under a \$20,000 limit, the 9,000 farms that received \$20,000 or more in payments and had sales of at least \$500,000 would have lost \$504 million or about 11 percent of total payments (see table 4.2).

**Table 4.2: Farms, Payments, and Decrease in Payments Under Payment Limit Options—Farms With Sales of \$500,000 or More, 1985**

Dollars in millions		
	\$40,000 limit	\$20,000 limit
Number of farms that would have been affected by limits	6,000	9,000
1985 payments to affected farms (actual)	\$579	\$684
Payments with lower limit <sup>a</sup>	\$240	\$180
Decrease in payments	\$339	\$504
Decrease as percentage of total payments	-7.4	-11.0

<sup>a</sup>Payments with lower limit equals the number of farms affected by the limit times the amount of the limit.

Source: GAO analysis of 1985 FCRS data.

**Lower Payment Limits on Farms With High Incomes and Equity**

We analyzed the effects of lower payment limits on the 4,000 commercial farms with a strong financial position—NCFI of \$150,000 or more and equity of \$1 million or more in 1985.<sup>2</sup> As table 4.3 shows, if the limit were \$40,000, these farms' 1985 payments would have fallen by \$107 million. If the limit were \$20,000, their payments would have declined by \$187 million.

According to 1985 FCRS data, the average NCFI of farms with NCFI of at least \$150,000 was \$262,616. The group's loss of \$107 million in payments would have translated into an average loss of \$26,750 per farm. The average NCFI would have decreased about 10 percent to \$235,866. Under the \$20,000 payment limit, the group's loss of \$187 million in payments would have meant an average loss of \$46,750 per farm. The average NCFI would have decreased about 18 percent to \$215,866 (see table 4.3).

**Table 4.3: Farms, Payments, and Decrease in Payments Under Payment Limit Options—Farms With NCFI of \$150,000 or More and Equity of \$1 Million or More, 1985**

Dollars in millions		
	\$40,000 limit	\$20,000 limit
Number of farms that would have been affected by limits	4,000	4,000
1985 payments to affected farms (actual)	\$267	\$267
Payments with lower limit <sup>a</sup>	\$160	\$80
Decrease in payments	\$107	\$187
Decrease as percentage of total payments	-2.3	-4.1
Average NCFI		
before lower limit	\$262,616	\$262,616
with lower limit	\$235,866	\$215,866

<sup>a</sup>Payments with lower limit equals the number of farms affected by the limit times the amount of the limit.

Source: GAO analysis of 1985 FCRS data.

There were 13,000 commercial farms with NCFI of \$100,000 or more and equity of \$500,000 or more. They received \$566 million in payments. They would have lost \$46 million under a \$40,000 limit and \$306 million under a \$20,000 limit.

<sup>2</sup>Some participating farms with high incomes and equity or low debt-to-asset ratios undoubtedly receive payments of less than the \$40,000 or \$20,000 limits. In calculating potential changes in payments, however, we assume that all farms meeting the income and solvency tests receive payments up to the limit. This assumption causes an overstatement of the "payments with lower limit" amount and an understatement of "decrease in payments."

## Lower Payment Limits on Farms With High Incomes and Low Debt-To-Asset Ratios

We analyzed the potential impacts of lower payment limits on the 7,000 commercial farms with NCFI of at least \$150,000 and a debt-to-asset ratio of 40 percent or less in 1985. They received \$363 million in payments. With a \$40,000 limit in effect, they would have lost \$83 million; with a \$20,000 limit, they would have lost \$223 million (see table 4.4).

**Table 4.4: Farms, Payments, and Decrease in Payments Under Payment Limit Options—Farms With NCFI of \$150,000 or More and Debt-To-Asset Ratios of 40 Percent or Less, 1985**

Dollars in millions		
	\$40,000 limit	\$20,000 limit
Number of farms that would have been affected by limits	7,000	7,000
1985 payments to affected farms (actual)	\$363	\$363
Payments with lower limit <sup>a</sup>	\$280	\$140
Decreases in payments	\$83	\$223
Decrease as percentage of total payments	-1.8	-4.8

<sup>a</sup>Payments with lower limit equals the number of farms affected by the limit times the amount of the limit.

Source: GAO analysis of 1985 FCRS data.

There were 21,000 commercial farms with NCFI of \$100,000 or more and debt-to-asset ratios of 70 percent or less. They received \$789 million in payments. A \$40,000 cap would have held their payments to a maximum of \$840 million, so it is unclear what the potential decreases in payments would have been. A \$20,000 cap would have decreased their payments by \$369 million.

## Farm Sector Impacts of Lower Payment Limits

We analyzed the effects of the \$40,000 and \$20,000 payment limits using the FAPSIM model and ASCS data. We also used a 25-percent sensitivity analysis on the \$20,000 limit, which assumes that 25-percent of payments otherwise ineligible under the limit would still be made because of reorganizations.<sup>3</sup> Results are expressed in terms of average percentage change from 1986 to 1990 from the base case provisions of FSA85.

We expected that lowering the payment limit would have various effects. Farmers who bump against the limit would obtain a lower economic return from acres that produce crops under the program. Some farmers would convert acres from participating to nonparticipating status and begin producing on acres idled previously under the program, so that total production could increase in the short run. Others would convert acres to producing nonprogram crops. In either case, this drop in

<sup>3</sup>A sensitivity analysis on the \$40,000 limit did not show significant impacts, so we do not report the results. Also, Findley payments are not counted towards the payment limits in the FAPSIM simulations.

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participation could cause decreases in deficiency payments. If program crop production increased overall (at least in the short term), prices would decrease, which would result in more exports. Lower prices could lead to more CCC crop loan forfeitures. Lower feed prices would lead to increased milk production and, in turn, higher government dairy purchases. Overall, the impacts of the \$20,000 cap would be more pronounced than the \$40,000 limit.

The results of our FAPSIM simulations are shown in table 4.5. Net farm income for the sector falls between 4 and 5 percent under the \$20,000 payment limit. Program acreage goes down, but production of wheat, corn, and cotton are slightly higher. Average farm prices decline to a greater extent for soybeans and corn than for wheat and cotton. Exports move only slightly higher. Regarding government programs, deficiency payments drop considerably under the \$20,000 payment limit. An increase in storage payments and dairy purchases partially offsets these decreases.



**Table 4.5: FAPSIM Results From Lowering Payment Limits: Acreage, Production, Prices, Exports, Deficiency and Storage Payments, Dairy Purchases, and Net Farm Income** (Average Percentage Change From Base Case, 1986-90)

Figures in percent		
	\$40,000 limit	\$20,000 limit <sup>a</sup>
<b>Program acreage planted</b>		
wheat	-0.5	-2.3
corn	-0.2	-1.2 to -1.5
<b>Production</b>		
wheat	0.0	0.2
corn	0.1	0.4
cotton	0.2	0.6 to 0.7
soybeans	0.2	0.5 to 0.6
<b>Season average farm prices</b>		
wheat	-0.1	-0.6
corn	-0.3	-1.2 to -1.3
cotton	-0.1	-0.3 to -0.4
soybeans	-0.8	-2.5 to -3.0
<b>Exports</b>		
wheat	0.0	0.2
corn	0.1	0.4
cotton	0.0	0.1
soybeans	0.2	0.6 to 0.7
<b>Deficiency payments</b>	-3.9	-13.4 to -14.9
<b>Storage payments</b>	1.6	6.6 to 6.9
<b>Dairy purchases</b>	2.2	7.1 to 7.9
<b>Net farm income</b>	-1.0	-4.2 to -4.6

<sup>a</sup>Where a range is shown, the smaller absolute value represents the sensitivity analysis that assumes 25 percent of payments otherwise ineligible under the limit would still be made because of reorganizations. The larger value represents the results with no reorganizations.

Source: GAO analysis of FAPSIM results.

## Individual Farm Impacts From Lower Payment Limits

Using USDA's REPFARM model to simulate lower payment limits, we analyzed the potential changes in NCFI and net worth for selected farms in eight states. Our simulations are for 1986 to 1990.<sup>4</sup> Results are expressed in terms of average percentage change from the base case provisions of FSA85. These results should not be generalized to other corn, wheat, cotton, and rice farms.

Under both the \$40,000 and \$20,000 limits, there are significant changes to NCFI and net worth, although much more pronounced effects result

<sup>4</sup>NCFI, as used in REPFARM, is defined as gross sales and other farm-related income (including government payments and net CCC loans) less cash operating expenses and interest. Not included in NCFI are principal repayment, inventory adjustment, non-farm income, family living expenses, and depreciation.

from the lower limit. As table 4.6 shows, under the \$40,000 limit, decreases in NCFI could range from 11 percent for the Iowa corn/hog farm to 50 percent for the Louisiana rice/soybean farm. In response to decreases in income returns on equity, net worth declines from 8 percent for the Iowa farm to 18 percent for the Louisiana farm. Under the \$20,000 limit, decreases in NCFI range from 32 percent for the Texas cotton farm to 147 percent for the Louisiana farm. The two farms growing rice are generally the most affected by the lower payment limits, primarily because these farms have a lower NCFI than the other farms under the FSA85 base case provisions. Therefore, decreases in their payments have a relatively greater impact. The North Dakota wheat farm also suffers relatively greater losses of income.

**Table 4.6: REPFARM Results From Lowering Payment Limits: Changes in Net Cash Farm Income and Net Worth**  
(Average Percentage Change From Base Case, 1986-90)

Figures in percent

Farm	Net cash farm income		Net worth	
	\$40,000 limit	\$20,000 limit	\$40,000 limit	\$20,000 limit
Illinois corn/ soybean	-14.8	-51.2	-3.0	-11.8
Iowa corn/hog	-11.0	-33.0	-2.7	-7.8
Kansas wheat/ cattle	-13.7	-41.0	-2.9	-9.1
North Dakota wheat	-24.3	-80.0	-4.7	-15.7
Texas cotton	-10.7	-32.0	-4.7	-14.1
Mississippi cotton/soybean	-18.6	-57.5	-5.1	-16.7
California rice	-36.4	-116.7 <sup>a</sup>	-5.1	-15.6
Louisiana rice/ soybean	-50.0	-147.2 <sup>a</sup>	-6.3	-18.2

Note: Net worth is adjusted for unrealized capital gains, depreciation, and contingent liabilities.

<sup>a</sup>Decreases of more than 100 percent indicate that a positive NCFI becomes negative.

Source: GAO analysis of REPFARM results.

In our REPFARM simulations, the selected farms receive income from deficiency payments up to the \$40,000 or \$20,000 limits. The REPFARM analysis showed that these farms could receive average payments above \$50,000 if unconstrained by the \$50,000 statutory limit or our hypothetical limits. Table 4.7 shows the average annual deficiency payment that the eight farms could receive—absent a limit between 1986 and 1990.

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**Table 4.7: REPFARM Results: Average Annual Deficiency Payments to Eight Farms in the Absence of Payment Limits, 1986-90**

<b>Farm</b>	<b>Average payment</b>
Illinois corn/soybean	\$52,495
Iowa corn/hog	70,703
Kansas wheat/cattle	142,852
North Dakota wheat	132,636
Texas cotton	87,951
Mississippi cotton/soybean	65,882
California rice	131,876
Louisiana rice/soybean	55,342

Source: GAO analysis of REPFARM results.

As shown in table 4.7, most of the farms would have a strong incentive to find a way to qualify for more payments than allowed under the payment limits. The Kansas, North Dakota, and California farms, in particular, could realize substantial income gains.

# Setting Limits on Crop Loans

This chapter presents our analysis of crop loan limits. We examined the potential impacts of a \$200,000, \$100,000, or \$50,000 limit on the amount of CCC crop loans (nonrecourse or marketing) that any farm could take out in one year. (Farmer Owned Reserve loans are not counted toward the limit.) For example, under a \$100,000 loan limit, farmers could place up to \$100,000 of their crop production under loan at the loan rate established by the Secretary of Agriculture. During the loan period, usually 9 months, the farmers could forfeit the crop to the government or repay the loan at the loan rate with interest (under the nonrecourse loan) or repay the loan at the lower repayment rate (under the marketing loan). Crop production above the \$100,000 limit would not be eligible for the nonrecourse or marketing loan.

The crop loan can provide additional income to farmers. When the market price is less than the loan rate, farmers receive more income by forfeiting the crop or repaying the marketing loan at the lower rate. Further, farmers benefit when interest rates on CCC loans are below market rates. For example, in the fall of 1985, CCC loans carried a 7.88-percent interest rate and short-term farm operating loans from commercial farm banks had a 12.81-percent interest rate.<sup>1</sup> Using CCC loans instead of commercial bank loans, farmers would have lower expenses and, therefore, higher net incomes.

Our analysis was performed in three parts. First, we analyzed 1985 FCRS and ASCS data on the distribution of crop loans to examine the number of farms, amount of loans, and interest rate benefits that would have been affected by the policy options. Second, we used the FAPSIM model to simulate the loan limits and examine the potential impacts on the farm sector as a whole, including the changes in production, prices, exports, net farm income, and government deficiency and storage payments. Third, we used REPFARM model simulations to examine effects on selected farms in eight states. Of particular interest were the potential impacts on and the NCFI and net worth of the eight farms. The FAPSIM and REPFARM simulations are for 1986 to 1990.

Farmers may reorganize or take other mitigating actions to circumvent loan limits. Our FAPSIM simulations account for such activity to some extent. We conducted a sensitivity analysis that assumes that 25 percent of the farm producers' ineligible output becomes eligible. In other words,

<sup>1</sup>The 12.81-percent interest rate was the average one reported by commercial farm banks in the Seventh Federal Reserve System region, which includes Michigan, Indiana, Illinois, Wisconsin, and Iowa.

the output of producers who have taken out loans above the hypothetical limits are viewed in two parts: the eligible amount up to the limit and the ineligible amount above the limit. The sensitivity analysis assumes 25 percent of the ineligible amount becomes eligible through farmers' mitigating actions.

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## Overall Results

In the absence of farmers' mitigating actions, a \$200,000 loan limit would have affected 5,000 FCRS farms or almost 6,800 ASCS producers and about 7 percent of the 1985 crop loan amounts. Under the FCRS, a \$100,000 limit would have reached 19,000 farms and about 19 percent of the loan amounts; the ASCS data identify over 30,000 producers and about 17 percent of the loan amounts. Not surprisingly, the \$50,000 limit would have had the greatest impact: 52,000 farms and about 36 percent of the loan amounts in the FCRS data and about 86,000 producers and about 34 percent of the loan amounts in the ASCS data. The CCC below-market interest rates were a minor component of NCFI.

For those variables reported in FAPSIM, the impacts from loan limits are slight, even if the ceiling is lowered to \$50,000. The limits result in very small changes in acreage planted, production, prices, net farm income, and deficiency payments. Some USDA officials believe, however, that these FAPSIM results may understate the potential impacts. FAPSIM does not report impacts on gross or net crop loan outlays.

In the REPFARM simulations, the NCFI and net worth of the selected corn and wheat farms remain largely the same under all of the loan limit options. At the \$100,000 limit, the impacts are substantial for one of the rice producers and, to a lesser degree, for the two cotton producers. With the \$50,000 limit in effect, more significant losses are seen for the two cotton and two rice producers.

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## Farm Group Impacts From Setting Loan Limits

As the loan limit is lowered, the number of farms and loan amounts that would have been affected by loan limits in 1985 increase substantially. The FCRS data in table 5.1 show that about 5,000 farms took out at least \$200,000 in CCC crop loans in calendar year 1985; 19,000 farms exceeded \$100,000 in loans; and 52,000 farms took out loans of \$50,000 or more. The loan amounts were about \$1.7 billion for the group of farms with loans of \$200,000 or more, about \$3.7 billion for farms with loans of \$100,000 or more, and about \$6.0 billion for all of the farms taking out at least \$50,000 in loans. Total 1985 loans were about \$9.3 billion.

We calculated the maximum loan amounts for the various limits, assuming all farms that had exceeded the limit would have taken out loans up to the allowable limit. In the absence of mitigating actions, gross CCC loan outlays would have been reduced by 7 percent of the loan amounts under the \$200,000 limit, 19 percent under the \$100,000 limit, and 36 percent under the \$50,000 limit.

The ASCS data in table 5.1 show comparable effects. About 6,800 producers took out loans of \$200,000 or more in the 1985 crop year; about 30,000 producers took out \$100,000 or more; and about 86,000 producers took out at least \$50,000 in loans. The \$15.2 billion in gross 1985 loan outlays could have been reduced by about 7 percent under the \$200,000 limit, almost 17 percent under the \$100,000 limit, and roughly 34 percent under the \$50,000 limit.

**Table 5.1: Number of Farms and Amount of 1985 CCC Crop Loans Under Loan Limit Options**

Dollars in millions			
	\$200,000 limit	\$100,000 limit	\$50,000 limit
<b>FCRS</b>			
Number of farms that would have been affected by limits	5,000	19,000	52,000
Amount of loans to affected farms			
without limit (actual)	\$1,650	\$3,662	\$5,989
with limit	\$1,000	\$1,900	\$2,600
Reduced gross loan outlays	\$650	\$1,762	\$3,389
Reduction as percentage of total loans	-7.0	-18.9	-36.4
<b>ASCS</b>			
Number of producers that would have been affected by limits	6,782	30,478	86,032
Amount of loans to affected producers			
without limit (actual)	\$2,428	\$5,620	\$9,487
with limit	\$1,356	\$3,048	\$4,302
Reduced gross loan outlays	\$1,072	\$2,572	\$5,185
Reduction as percentage of total loans	-7.0	-16.9	-34.1

Source: GAO analysis of 1985 FCRS and ASCS data.

Reduced loan outlays do not translate directly into potential budget savings. Such savings depend on how much of the loans are forfeited or repaid.

## Impact of Interest Rate Benefits on Net Cash Farm Income

Using FCRS data, we calculated the potential impact of the CCC crop loan's below-market interest rate benefit on 1985 NCFI by NCFI class. As mentioned earlier, the CCC interest rate in the fall of 1985 was 4.93 percentage points lower than the commercial farm bank rate for short-term operating credit. We multiplied the 4.93 percent times the average 1985 CCC loan (assuming a 9-month loan) for each NCFI class. As table 5.2 shows, the total average benefit was a minor component of average NCFI.

If loan limits were in effect, the benefit might have been even less for two reasons. First, most loans made in 1985 were less than our hypothetical limits. According to the FCRS, some 93 percent of the loan amounts were below the \$200,000 limit and 64 percent of the loan amounts were below the \$50,000 limit. Second, farms with production above the loan limits may not obtain commercial loans to finance their production that no longer qualifies for the nonrecourse loan program.

**Table 5.2: Number of Farms, Average CCC Loans, Average NCFI, and Average Interest Rate Benefit by NCFI Class**

NCFI Class	Number of farms	Average CCC loans	Average NCFI	Average interest rate benefit
\$150,000 or more	11,000	\$155,283	\$249,821	\$5,742
\$100,000 to \$149,999	11,000	73,896	118,876	2,732
\$ 50,000 to \$99,999	32,000	55,829	70,391	2,064
\$ 0 to \$49,999	106,000	28,507	22,086	1,054
-\$1 to -\$20,000	35,000	20,564	- 6,879	760
less than -\$20,000	28,000	45,985	-67,165	1,679
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>\$41,985</b>	<b>\$29,405</b>	<b>\$1,552</b>

<sup>a</sup>Total may not add due to rounding.

Source: GAO analysis of 1985 FCRS and Federal Reserve data.

## Farm Sector Impacts From Setting Loan Limits

Using the FAPSIM model and ASCS data, we simulated the hypothetical \$200,000, \$100,000, or \$50,000 nonrecourse loan limits for 1986 to 1990. We used a 25-percent sensitivity analysis on all three limits; it assumes that 25 percent of the ineligible loan amounts become eligible through farmers' reorganizations or other mitigating behavior. The impacts on the farm sector were summarized into average percentage changes from the base case provisions of FSA85.

We would expect loan limits to have mixed effects on program participation. A severe limit might undermine the price support function of the loan program. This could lead to falling prices and perhaps increased participation on the part of some farmers who would want to take

advantage of the spread between loan rates and lower prices. On the other hand, lower prices would result in some farmers' taking marginal acres out of production and the program.

Lower prices could lead to more loan forfeitures; therefore, higher program costs could occur. Even if loan limits do not cause a fall in prices, greater uncertainty about program crop prices could result. If this increased uncertainty were characterized by relatively larger downside price risk, lower expected economic returns from program participation could result. The lower returns could induce some farmers to decrease their participation and produce more nonprogram crops or engage in other economic activity. If the net effect is fewer acres enrolled in the program, deficiency payments could be reduced. Overall, we would expect impacts to become more pronounced as loan limits become more restrictive.

The FAPSIM simulations show that the hypothetical \$200,000, \$100,000, and even \$50,000 limits have little impact on certain variables such as production, net farm income, and deficiency payments. As shown in table 5.3, farm income for the sector as a whole falls by 0.1 percent for the \$200,000 limit and 0.2 percent for the \$50,000 ceiling. Production of wheat, corn, and cotton remains fairly constant. Average farm prices decline slightly, if at all, for wheat, corn, cotton, and rice. Regarding government programs, deficiency payments decline 0.2 percent under the \$200,000 limit and 0.4 to 0.5 percent under the \$50,000 limit.



**Table 5.3: FAPSIM Results From Setting Nonrecourse Loan Limits: Acreage, Production, Prices, Exports, Deficiency and Storage Payments, Dairy Purchases, and Net Farm Income** (Average Percentage Change From Base Case, 1986-90)

Figures in percent			
	\$200,000 limit	\$100,000 limit	\$50,000 limit
<b>Program acreage planted</b>			
wheat	0.0	0.0	0.0
corn	0.0	0.0	0.0 to 0.1
<b>Production</b>			
wheat	0.0	0.0	0.0
corn	0.0	0.0	0.0
cotton	0.0	0.0 to 0.1	0.0 to 0.1
soybeans	0.0	0.0	0.0 to 0.1
<b>Season average farm prices</b>			
wheat	0.0	0.0	0.0
corn	0.0	0.0	0.0 to -0.1
cotton	0.0	0.0	0.0
soybeans	-0.1	-0.1 to -0.2	-0.2 to -0.3
<b>Exports</b>			
wheat	0.0	0.0	0.0
corn	0.0	0.0	0.0
cotton	0.0	0.0	0.0
soybeans	0.0	0.0	0.0 to 0.1
<b>Deficiency payments</b>	-0.2	-0.3	-0.4 to -0.5
<b>Storage payments</b>	0.1	0.2	0.3 to 0.4
<b>Dairy purchases</b>	0.2	0.4 to 0.5	0.7 to 1.0
<b>Net farm income</b>	-0.1	-0.1	-0.2

Note: Where a range is shown, the smaller absolute value represents the sensitivity analysis, which assumes that 25 percent of the ineligible loan amounts become eligible through farmers' reorganizations or other mitigating actions; the larger value represents results with no sensitivity analysis.

Source: GAO analysis of FAPSIM results.

## Individual Farm Impacts From Setting Loan Limits

Using USDA's REPFARM model, we simulated the loan limits to analyze their potential impacts on selected farms in eight states. We analyzed the potential changes in NCFI and net worth for 1986 to 1990. The results from our simulations are expressed in terms of the average percentage change from the base case provisions of FSA85.

As table 5.4 shows, the \$200,000 loan limit has no effect on the farms, except for a small drop in NCFI and net worth for the California rice farm. The \$100,000 ceiling results in reduced NCFI and net worth for the Texas and Mississippi cotton farms and California rice farm but little or no impact for the others. The \$50,000 loan limit has a small impact on the wheat and corn producers. Substantial losses of income and net worth occur for the two cotton producers, and there is a 50-percent NCFI decrease for the Louisiana rice farm. The \$50,000 loan limit results indicate that the California rice farm is the most severely affected.

The impacts are greater on the cotton and rice farms for at least a couple of reasons. First, if loan rates are assumed to be higher than market prices, then the farms take out crop loans. In the REPFARM simulations, cotton and rice farms take out loans in 4 of the years, but corn and wheat farms take out loans in only 2 of the years. Second, because cotton and rice have higher value per acre, cotton and rice farms reach the loan limits before the corn and wheat farms.

**Table 5.4: REPFARM Results: Loan Limit Impacts on Net Cash Farm Income and Net Worth** (Average Percentage Change From Base Case, 1986-90)

Figures in percent

Farm	Net cash farm income			Net worth		
	\$200,000 limit	\$100,000 limit	\$50,000 limit	\$200,000 limit	\$100,000 limit	\$50,000 limit
Illinois corn/soybean	0.0	0.0	-0.1	0.0	0.0	0.0
Iowa corn/hog	0.0	0.0	-0.1	0.0	0.0	0.0
Kansas wheat/cattle	0.0	-0.5	-0.7	0.0	-0.3	-0.4
North Dakota wheat	0.0	-0.3	-0.6	0.0	-0.1	-0.2
Texas cotton	0.0	-13.2	-49.7	0.0	-7.9	-12.2
Mississippi cotton/ soybean	0.0	-11.5	-24.2	0.0	-4.3	-9.1
California rice	-4.5	-110.4 <sup>a</sup>	-162.4 <sup>a</sup>	-1.0	-21.0	-29.9
Louisiana rice/ soybean	0.0	0.0	-49.6	0.0	0.0	-8.2

Note: Net worth is adjusted for unrealized capital gains, depreciation, and contingent liabilities.

<sup>a</sup>A negative figure exceeding 100 percent indicates that a positive NCFI turns negative.

Source: GAO analysis of REPFARM results.

# Analysis of Target Price Reductions

In the Food Security Act of 1985, the Congress specified commodity target prices and loan rates for 1986 to 1990. Target prices were set on a schedule of gradual decreases. Beginning in 1987, loan rates became tied to changes in market prices; the Congress gave the Secretary of Agriculture discretionary authority to adjust wheat and feed grain loan rates downward, within limits, when needed for U.S. production to compete in export markets.

In addition to our analysis of the options for targeting payments and crop loans, the Chairman, Senate Committee on the Budget, requested that we provide him with an analysis of target price reductions. As a result, we analyzed the potential impacts of (1) the target price provisions of the 1985 legislation and (2) target price reductions of about 10 percent more. The lowering of target prices in FSA85 is compared with a base case in which target prices are frozen at 1985 levels, but the other provisions of FSA85 remain in effect. The base case for the approximately 10-percent additional cut is the provisions of FSA85. Using FAPSIM simulations, we analyzed potential impacts on the farm sector's net farm income, deficiency and storage payments, dairy purchases, planted acreage, production, prices, and exports. Using REPFARM simulations, we examined the potential changes in NCFI and net worth for selected farms in eight states.

## Overall Results

The FSA85 target price reductions result in deficiency payments being somewhat lower than payments would have been if target prices had been frozen at 1985 levels. Net farm income and prices fall modestly, and greater impacts are seen in later years. Production levels and exports do not change much at all. The roughly 10-percent additional cut in target prices results in much more significant effects. From the FSA85 base case, deficiency payments are reduced by an additional 28 percent and net farm income by 12 percent.

## Target Prices and Loan Rates Used in the Analysis

Table 6.1 lists the target prices for wheat, corn, cotton, and rice, as specified in the 1985 act. Table 6.2 shows the percentage changes in target prices from 1985 levels.

Chapter 6  
Analysis of Target Price Reductions

Table 6.1: FSA85 Target Prices in Dollars, by Crop, 1986-90

Year	Wheat (per bu.)	Corn (per bu.)	Cotton (per lb.)	Rice (per cwt.)
1986	\$4.38	\$3.03	\$0.81	\$11.90
1987	4.38	3.03	0.794	11.66
1988	4.29	2.97	0.77	11.30
1989	4.16	2.88	0.745	10.95
1990	4.00	2.75	0.729	10.71

Source: FSA85 and GAO analysis.

Note: Units of measurement are bushel (bu.), pound (lb.), and hundred weight (cwt.).

Table 6.2: FSA85 Target Prices, Percentage Change From 1986 Levels, by Crop, 1986-90

Figures in percent

Year	Wheat	Corn	Cotton	Rice
1986	0.0	0.0	0.0	0.0
1987	0.0	0.0	-2.0	-2.0
1988	-2.1	-2.0	-4.9	-5.0
1989	-5.0	-5.0	-8.1	-8.0
1990	-8.7	-9.2	-10.0	-10.0
<b>Average</b>	<b>-3.2</b>	<b>-3.2</b>	<b>-5.0</b>	<b>-5.0</b>

Source: FSA85 and GAO analysis.

Wheat and corn target prices were frozen at 1985 levels for the first two years of the law, and cotton and rice target prices held constant for 1986. Table 6.3 lists the percentage changes in target prices that we used to analyze the option of an additional 10-percent cut in target prices. At the time of our analysis, we did not expect to analyze a further lowering of target prices. We later found that one of our other simulations used target prices that were quite close to a 10-percent reduction from FSA85 levels. We believe this simulation provides results that can reasonably be used to analyze the potential impacts of an additional 10-percent target price reduction from FSA85 mandated levels.

**Table 6.3: Percentage Change in Target Prices Used to Simulate an Additional 10-Percent Target Price Reduction, by Crop, 1986-90**

Figures in percent			
Year	Wheat	Corn	Cotton
1986	-10.183	-9.142	-10.988
1987	-10.799	-9.967	-11.713
1988	-11.142	-10.438	-12.078
1989	-11.370	-10.660	-11.275
1990	-11.475	-10.800	-10.837
<b>Average</b>	<b>-10.994</b>	<b>-10.201</b>	<b>-11.378</b>

Source: GAO analysis of FAPSIM simulations.

Our analysis assumes the loan rate levels specified in table 6.4. These rates are used for analytical purposes in USDA's FAPSIM model, and they do not represent official USDA projections of future loan rates. We also assume that market prices are at or below loan rates.

**Table 6.4: Loan Rates Used in FAPSIM, by Crop, 1986-90**

Year	Wheat (per bu.)	Corn (per bu.)	Cotton (per lb.)	Rice (per cwt.)
1986	\$2.40	\$1.92	\$0.5500	\$7.20
1987	2.28	1.82	0.5225	6.79
1988	2.17	1.73	0.5000	6.62
1989	2.06	1.65	0.5000	6.50
1990	1.96	1.56	0.5000	6.50

Note: Units of measurement are bushel (bu.), pound (lb.), and hundred weight (cwt.).

Source: USDA's FAPSIM model.

## Farm Sector Impacts From Lowering Target Prices

We would expect the lower target prices to reduce the economic returns that farmers receive from placing acres in the program. To the extent that lower target prices discourage participation, we would expect farmers to bring idled ARP land back into production. This action could increase commodity supplies and decrease prices in the short run, which would benefit exports. If the target price decline is greater than the price decrease, deficiency payments would probably be reduced. Overall, we would expect impacts to be greater for the roughly 10-percent additional cut in target prices than the smaller FSA85 reduction.

Our simulations of FSA85 show that, over the 5-year period, total planted acreage increases very slightly, as does the production of corn and cotton. Wheat and corn prices decline about 3 percent, and exports increase slightly. Deficiency payments are 8 percent lower, and storage payments

show a similar decrease. The impact is greatest in the later years. For example, in 1990, when target prices for wheat, corn, cotton, and rice are 8.7 to 10 percent lower than 1985 levels, total deficiency payments are almost 21 percent lower. Net farm income for the farm sector declines slightly through 1988 then more sharply in 1989 and 1990, showing a 2.5-percent average decline over the 5-year period. The results are shown in table 6.5.

**Table 6.5: FAPSIM Results: Potential Impacts From Lower Target Prices as Specified in FSA85** (Percentage Change From the Base Case, 1986-90)

Figures in percent						
	1986	1987	1988	1989	1990	Average
Deficiency payments	0.0	-1.0	-6.1	-12.1	-20.6	-8.0
Storage payments	0.0	0.0	-1.8	-10.8	-26.5	-7.8
Dairy purchases	0.0	0.0	0.7	5.1	18.5	4.9
Net farm income	0.0	-0.1	-0.8	-3.8	-8.0	-2.5
Total planted acreage	0.0	0.0	0.3	0.5	0.7	0.3
Production						
Wheat	0.0	0.0	0.1	-0.1	-0.4	-0.1
Corn	0.0	0.0	0.4	0.5	0.9	0.4
Cotton	0.0	0.2	0.2	0.1	0.4	0.2
Prices						
Wheat	0.0	0.0	-2.1	-4.4	-7.1	-2.7
Corn	0.0	0.0	-2.2	-4.5	-7.9	-2.9
Cotton	0.0	-0.4	-0.7	-0.6	-1.4	-0.6
Exports						
Wheat	0.0	0.0	0.8	1.6	2.5	1.0
Corn	0.0	0.0	0.7	1.3	2.3	0.9
Cotton	0.0	0.1	0.2	0.2	0.3	0.2

Source: GAO analysis of FAPSIM simulations.

Table 6.6 summarizes the FAPSIM results for our simulation of the roughly 10-percent additional cut in target prices. Deficiency payments fall by 28 percent from the base case provisions of FSA85. This decline is partly offset by increased storage payments and dairy purchases. Mixed effects on production are seen for 1986 to 1990: wheat production falls slightly; corn production increases by 1.3 percent; and cotton production moves 0.8 percent higher for the 5-year period overall but declines in 1990. Farm prices decline more for wheat and corn than for cotton. Net farm income is reduced by 12 percent.

**Table 6.6: Impacts From FAPSIM Simulation of an Approximately 10-Percent Additional Cut in Target Prices**  
(Percentage Change From Base Case, 1986-90)

Figures in percent						
	1986	1987	1988	1989	1990	Average
Deficiency payments	-29.8	-30.0	-29.8	-26.6	-24.8	-28.2
Storage payments	2.5	6.5	9.0	5.9	-15.3	1.7
Dairy purchases	-0.1	11.4	32.5	8.6	18.2	14.1
Production						
Wheat	0.4	-0.1	0.4	-0.1	-1.1	-0.1
Corn	1.6	1.2	1.8	1.2	0.8	1.3
Cotton	0.6	1.6	1.6	0.9	-0.7	0.8
Prices						
Wheat	-3.5	-0.9	-3.7	-9.2	-8.4	-5.1
Corn	-3.3	-1.4	-3.9	-5.8	-8.7	-4.6
Cotton	0.0	0.0	0.0	-2.7	0.1	0.5
Net farm income	-1.5	-11.7	-14.5	-16.0	-15.8	-11.9
Exports						
Wheat	1.8	0.4	1.4	3.0	2.7	1.9
Corn	1.3	0.5	1.2	1.6	2.3	1.4
Cotton	0.0	0.0	0.0	0.5	0.1	0.1

Source: GAO analysis of FAPSIM simulations.

## Individual Farm Impacts From Lower Target Prices

Using USDA's REPFARM model, we simulated the target price cuts mandated by FSA85 to analyze the potential impacts on selected farms in eight states. We analyzed the changes to NCFI and net worth from 1986 to 1990. The results of our simulations are presented as the average percentage change from the base case provisions of FSA85, except for a freezing of target prices at 1985 levels.

Table 6.7 shows that the impacts from lower target prices as specified in FSA85 are most pronounced for the California and Louisiana rice farms. Their NCFI declines by about 36 and 26 percent, respectively. Their net worth falls by about 5 and 4 percent, respectively. The next biggest impact is seen for the Texas and Mississippi cotton farms. The corn producers in Illinois and Iowa and the wheat producers in Kansas and North Dakota have more modest losses in NCFI and net worth as a result of the lower target prices.

**Table 6.7: REPFARM Results: FSA85  
Impacts on Net Cash Farm Income and  
Net Worth** (Average Percentage Change  
From Base Case, 1986-90)

Figures in percent

Farm	Net cash farm income	Net worth
Illinois corn/soybean	-8.1	-1.5
Iowa corn/hog	-2.4	-0.6
Kansas wheat/cattle	-4.2	-1.1
North Dakota wheat	-5.0	-1.1
Texas cotton	-9.3	-4.0
Mississippi cotton/soybean	-14.1	-3.5
California rice	-35.9	-5.3
Louisiana rice/soybean	-26.4	-3.5

Note: Net worth is adjusted for unrealized capital gains, depreciation, and contingent liabilities.

Source: GAO analysis of REPFARM results.

The differences in impacts occur, in part, because of the timing of target price cuts. The decreases begin in 1988 for corn and wheat and 1987 for cotton and rice. These different starting dates cause the average target price decreases to be 3.2 percent for corn and wheat and 5 percent for cotton and rice over the 5-year period.



# Summary and Observations

This report provides information to assist the Congress in the current debate on targeting farm price and income support programs on the basis of financial need. It presents data on the 1985 distribution of payments and crop loans and the potential impacts of certain hypothetical targeting options among the many that are possible. Specific, quantitative analytical results of various targeting options are provided to complement the more general, qualitative analysis presented in our June 1987 report on targeting farm payments.

There are no precise projections in this report. Our analyses of FCRS and ASCS data and the FAPSIM simulations provide insights for ranking alternatives and identifying the general direction and order of magnitude of changes associated with the hypothetical targeting options. Knowledge of economic theory, budget processes, and farmer behavior could be used to check the credibility of the results. For example, farmers may reorganize their operations to circumvent a payment limit.

GAO's analyses may not fully account for the degree to which farmers may adjust to the targeting of farm programs. Consequently, potential changes in federal spending and other variables, as estimated in the analyses, may be overstated. Our FAPSIM simulations, including sensitivity analyses, account for some mitigating behavior that farmers could take in response to changes in federal policy, but our FCRS and ASCS analyses do not. Finally, the REPFARM simulations should be interpreted with care, because the potential impacts of the policy options on the eight selected farms are not generalizable. In chapter 8, we detail the major limitations on the data and analyses.

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## Redistributing Payments—Chapter 3

Many farms would have gone from a negative to a positive NCFI with an increase in 1985 payments, according to our FCRS data analysis of the payment redistribution option. Farms with very high incomes may not have been significantly affected by a payment decrease. The FAPSIM simulations, which used FCRS data, indicate a consistent pattern to changes in net farm income, farm program payments, production, prices, and other variables: larger impacts from the most redistributive scenario (A), comparable impacts from the middle two scenarios (B and C), and lesser effects from the least redistributive scenario (D). These results reinforce the observation in our June 1987 targeting report that much depends on the definition of stressed and sound farms, the amount that payments increase or decrease for the particular farms, and farmers' mitigating behavior.

## Lowering Payment Limits—Chapter 4

The \$40,000 and \$20,000 payment limits can be expected to have an impact on federal spending. The FCRS data analysis shows greater decreases in payments than do the ASCS data analysis and FAPSIM simulations (which used ASCS data). The definition of the FCRS farm is broad enough to include multiple ASCS producers (“persons”) who could be receiving deficiency payments. If payment limits could be effectively applied to the more broadly defined farms, the FCRS data analysis would give more appropriate results. The analyses using ASCS data would better fit current circumstances, assuming no further reorganizations. Table 7.1 summarizes the results of our analyses.

**Table 7.1: Summary Results: GAO’s Analysis of Options to Lower the Payment Limit**

Payment limit	FCRS		ASCS		FAPSIM (percentage change)	
	No. of farms	Percentage change in payments	No. of producers	Percentage change in payments	Deficiency payments	Net farm income
\$40,000	24,000	-14	28,000	-5	-4	-1
\$20,000	63,000	-31	79,000	-19	-13 to -15	-4 to -5

Source: GAO analysis of FCRS and ASCS data and FAPSIM simulations.

The FAPSIM simulations also show that lower payment limits have very limited impacts on crop production levels. However, as noted in our June 1987 report, lower payment limits could weaken government control over crop production if some farmers reduced their participation in the payment programs.

In the REPFARM simulations, significant reductions in NCFI and net worth of all eight farms result from the lower payment limits, particularly the \$20,000 limit. The selected California and Louisiana rice farms are the most affected. The smallest decreases in NCFI can be seen for the Texas cotton and Iowa corn/hog farms and in net worth for the Iowa farm and the Kansas wheat/cattle farm.

## Setting Limits on Crop Loans—Chapter 5

The affected number of FCRS farms or ASCS producers and the potential reduction in gross CCC crop loans in 1985 would have increased as loan limits become more restrictive. These results, summarized in table 7.2, assume no mitigating actions by farmers to circumvent the limits.

**Table 7.2: Summary Results: GAO's Analysis of Loan Limit Impacts on the Number of Farming Units and the Potential Reduction in Gross CCC Crop Loans, 1985**

Dollars in millions				
Loan limit	FCRS		ASCS	
	No. of farms	Reduction in gross loans	No. of producers	Reduction in gross loans
\$200,000	5,000	\$650	7,000	\$1,072
\$100,000	19,000	\$1,762	30,000	\$2,572
\$50,000	52,000	\$3,389	86,000	\$5,185

Note: Reductions in gross lending do not translate directly into potential budget savings. Such savings depend on how much of the loans are forfeited or repaid.

Source: GAO analysis of FCRS and ASCS data.

Our FAPSIM simulations, which used ASCS data, show that the effects of loan limits on the farm sector's overall net farm income are only slight, even if the ceiling is lowered to \$50,000. Some USDA officials believe these FAPSIM results tend to understate the potential impacts. The REPFARM simulations indicate that the NCFI and net worth of the selected corn and wheat farms remain largely the same under all three loan limits. With the \$100,000 limit, impacts are substantial for the California rice farm and, to a lesser degree, for the two cotton farms. The two cotton and two rice farms realize more significant losses under the \$50,000 limit.

## Analysis of Target Price Reductions— Chapter 6

In addition to our analysis of the options for targeting payments and crop loans, we analyzed the impacts of target price reductions. Our FAPSIM simulations show that the FSA85 target price reductions result in deficiency payments that are 8 percent lower than they would have been if target prices had been frozen at 1985 levels. Net farm income falls by 3 percent. A roughly 10-percent additional cut in target prices from 1985 levels results in a 28-percent decrease in deficiency payments and a 12-percent fall in net farm income.

The REPFARM simulations indicate that the FSA85 target price reductions have the least impact on the selected Illinois and Iowa corn farms and Kansas and North Dakota wheat farms. The California and Louisiana rice farms and Texas and Mississippi cotton farms see the biggest reductions in their NCFI and net worth.

## Observations

It would be difficult to target farm program benefits. Several questions need to be addressed:

- What are the objectives of targeting and the most appropriate mechanisms for achieving them?
- How are issues of fairness and equity dealt with, since targeting may benefit or harm one group and not another?
- What are the problems with administering any new targeting concept?

On the question of objectives, if targeting is to assist financially stressed farms, the payment shift option could be used to increase payments to selected farms. If targeting is to decrease benefits to financially sound farms, the payment and loan limits would be more effective with a means test than without one. In chapter 4, we provide a limited analysis in which the payment limit was lowered only for "financially sound" farms. As we pointed out in our June 1987 report on targeting, the Congress needs to identify which policy goals are most important if it wishes to change existing income-support programs in the direction of helping financially stressed farmers.

With regard to "equity," there are opposing views. From one perspective, greater farm program benefits should be targeted to financially stressed farms because, in part, government fiscal and farm policies in the 1970s and early 1980s were at least partly responsible for instabilities in interest rates, inflation, and export markets and imbalances in commodity supply and demand. And, these economic conditions were harmful to the farm sector. Therefore, equity or fairness dictates helping some stressed farmers to make the necessary adjustments. From another view, also rooted in a concern for equity, certain farmers (1) may not "deserve" help because of their highly risky or inefficient business practices or (2) could probably not continue in business even with increased benefits, and the funds would be better targeted to those who can continue to operate. Another equity concern is that the policy options examined in this report would not apply to the many farms that produce no program crops.

Finally, administrative feasibility is a key issue for targeting based on financial need. Various means tests are employed throughout the government, including USDA's Farmers Home Administration, to distribute program benefits. A new administrative apparatus will be needed, however, to introduce a means test to the payment or crop loan programs. This new apparatus may require adding ASCS staff at the local level, and, as noted earlier, the cost of implementing the targeting options was not part of our analysis of potential impacts. In contrast, lowering the payment limit has the virtue of revising an existing practice; establishing

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loan limits might be a similar administrative undertaking, since the loan program is already in place.

Other administrative concerns include the extent to which farmers may reorganize their operations or take other mitigating actions to circumvent any restrictions or to qualify for additional benefits. Furthermore, it may be difficult to determine equitable measures of financial need. For example, one year's income can be manipulated through inventory adjustments and the timing of crop receipts and expenses. Debt-to-asset ratios can be manipulated by taking on short-term debts. In our analysis of the payment shift option, we may have reduced the potential impact of such manipulation by using a variety of income and equity tests to classify farms as financially stressed.

Finally, we have not taken a position on the merits of targeting farm price and income support programs on the basis of financial need. Our purpose in this report is to identify the distribution of program benefits and examine the potential impacts of certain targeting options.

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## Agency Comments

USDA criticized our report, asserting that "the combination of data limitations, model misapplications, and oversight of relevant program features results in conclusions that are not based on careful analysis." We disagree with USDA's conclusion. In performing our analysis, we used appropriate analytical methods and, as part of our effort, consulted extensively with USDA staff on methodology and on the use of USDA's data and econometric models. Furthermore, many of the program features that USDA said were overlooked were, in fact, accounted for in the report. USDA's letter and our detailed response are contained in appendix III.

# Objectives, Scope, and Methodology

In his May 13, 1986, letter, Senator Chiles, now Chairman, Senate Committee on the Budget, asked us to look into the issue of targeting federal farm programs on the basis of financial need. Specifically, he requested information on the distribution of 1985 price and income support payments and nonrecourse loans by farm size, financial condition, and location. He also wanted us to analyze the potential impacts of three broad policy options related to the targeting of payments and loans on the basis of financial need: (1) lowering the \$50,000 statutory payment limit, (2) redistributing payments from financially sound to financially stressed farmers, and (3) capping the amount of CCC crop loans. Senator Chiles also requested that we look at the potential effects of lowering target prices, as specified in the Food Security Act of 1985. In subsequent discussions with his staff, we were also asked to examine, to the extent possible, an additional 10-percent cut in target prices.

One of the primary data sources for our analysis was the 1985 FCRS of USDA's ERS and National Agricultural Statistics Service. This is the only current, comprehensive data source on the distribution of payments and loans by sales class, income, equity, debt-to-asset ratio, and other indicators of farm operators' financial status. The FCRS, which is described in more detail in appendix I, also provides information on the amount of crop production. FCRS data are generated from an annual survey of farm operators, selected in a probability sample. In this report, we use data from calendar year 1985. ERS compiled the FCRS data tables.

Other primary data sources were the ASCS payment history and loan files in Kansas City, Missouri. The payment history file shows the actual amounts paid by the ASCS management office or county offices. The loan file records actual loan activity in the county offices. Producer identification numbers were provided by USDA's Office of the Inspector General. More detailed information on ASCS files is provided in appendix I. GAO staff did the computer programming that drew the payment and loan data from these files. While FCRS data identify payments and loans to farm operators, ASCS data identify payments and loans to producers. Particularly for the larger farms, there may be more than one producer per farm operation.

To evaluate the distribution of payments and loans and assess the potential impacts of the various policy options, we used various ERS balance sheet and income measures. In the analysis of FCRS data and the REPFARM simulations, we made extensive use of NCFI as a net income measure. It is defined as gross sales and other farm-related income (including government payments and net CCC loans) less cash operating

expenses and interest. Principal repayment was included as part of NCFI in the analysis of FCRS data but excluded in REPFARM. Not included in NCFI are inventory adjustments, non-farm income, family living expenses, and depreciation. In the FAPSIM simulations, net farm income was used. Net farm income is similar to NCFI, except it includes depreciation and excludes principal repayment.

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## Methodology

Three methods have been used in analyzing the policy options. An explanation of each method follows.

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### FCRS and ASCS Data Analyses

Using the 1985 FCRS and ASCS distribution data, we examined how the various policy options could have affected the amount of payments and loans made in 1985. We also identified the number of farms that could have been affected and the potential changes in the average NCFI for different groups of farms (by income class). We estimated changes in payments under the payment limit option and changes in gross CCC crop lending under the loan limit option. The FCRS and ASCS results differ for two major reasons. First, the FCRS reports on the calendar year and ASCS on the crop year; second, the FCRS defines the farm as the recipient of benefits, and the ASCS defines the producer as the recipient. If the payment limit options could be effectively applied to farms, which are more broadly defined, our FCRS data analysis would give more appropriate results. The ASCS data analysis would better fit current law, which applies the limit to producers (“persons”). Appendix I provides a more detailed explanation of the differences between the FCRS and ASCS data.

A basic limitation of our FCRS and ASCS data analysis is its static nature. We could not account for potentially mitigating behavior by farmers in response to changes in policy. Farmers could be expected to reduce program participation, redirect production, reorganize their businesses, and take other actions to mitigate adverse consequences from new policies. These steps would reduce the impacts identified in our FCRS and ASCS analysis. Given the limitations of this analysis, we believe the results should be used for purposes of ranking policy alternatives and identifying the direction and “order of magnitude” of potential impacts.

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### FAPSIM Simulations

We analyzed the options’ potential impacts on the farm sector as a whole using FAPSIM—an econometric model of the U.S. agricultural sector. Some of the key variables that FAPSIM estimates endogenously are

aggregate net farm income, farm production, crop prices, exports, planted acreage, federal deficiency and storage payments, and farmer participation in government commodity programs.

Our analysis of the payment redistribution, payment limit, and loan limit options was hampered because these options cannot be directly simulated using FAPSIM. We simulated these policy options by adjusting the returns expected from participating in the programs. For example, a lower payment limit effectively reduces the percentage of crop production eligible for the full deficiency payment. ASCS data on the amount of payments or loans made under each payment and loan limit option were compared with payments or loans that would have been made under the status quo. Similarly, FCRS data were used in the payment shift options. The percentage of payments or loans to be made under the various options was used to adjust the expected returns from participating in the programs. Each crop (wheat, corn, cotton, and rice) was adjusted separately. To analyze the option of lower target prices using FAPSIM, we compared baseline data in FAPSIM—which incorporates the FSA85 provisions of gradually lowered target prices—with a hypothetical scenario in which all target prices are held constant at 1986 levels through 1990. Our methodology was adopted after consulting with USDA economists who use FAPSIM. ERS staff ran the model simulations.<sup>1</sup>

The economic analysis using FAPSIM expands on the FCRS and ASCS analysis in various ways. It accounts for some mitigating behavior by farmers in response to changes in policies. For example, FAPSIM would take into account the corn/soybean farm that shifts more acreage into soybeans if a lower payment limit reduces its financial returns from corn production. A change in participation rates that might result from a lower payment limit will affect deficiency payments. This change would be captured in the FAPSIM, but not in the FCRS and ASCS analyses. FAPSIM also projects more impacts. Production, prices, exports, and storage payments are projected for the sector and by crop. FAPSIM also provides a longer-run perspective. We examined the policy impacts from 1986 through 1990, generally measuring the average percentage change from the base case, as represented by the provisions of FSA85.

FAPSIM also has its limitations. First, it cannot fully account for some important mitigating responses by farmers—e.g., farm reorganizations to avoid payment or loan limits. FAPSIM's results are probably overstated

<sup>1</sup>For a detailed explanation of FAPSIM's history and structure, see Larry Salathe, et. al., "The Food and Agricultural Policy Simulator," *Agricultural Economics Research*, April 1982, pp. 1-15.



because this mitigating behavior is not accounted for. We conducted sensitivity analyses to factor in some of these mitigating actions. The sensitivity analyses, which are described further in chapters 3 through 5, assume that 25 percent of the expected reductions in payments or loans from the particular option would not be realized. Second, the model's structure reflects past government policies that have not, for instance, used a means test in determining program benefits. Third, as mentioned earlier, FAPSIM's structure did not allow us to directly simulate payment and loan limits or payment shifts. We had to determine the percentage of payments or loans that would still be made under these options and adjust the equation for the expected returns from participation to account for these new percentages. Fourth, some parts of the model have not been validated using data from the 1980s. Taken together, these limitations underscore the importance of using FAPSIM's results, like the FCRS and ASCS analytical results, for purposes of ranking alternatives and identifying the direction and "order of magnitude" of potential changes.

For the payment shift options, our FAPSIM simulations may be limited by our use of FCRS crop production data to estimate the percentage of eligible payments. As discussed further in appendix I, FCRS data underreport small farm crop production. The FCRS data also do not account for the farm operation with more than one person qualified for receiving payments up to the statutory \$50,000 limit. The FCRS data base was used here because it identifies financial characteristics of payment recipients while the ASCS data base does not. Simulations using FCRS data rather than ASCS data will provide larger results because the FCRS reporting units for receiving payments are fewer and more broadly defined than the ASCS reporting units. We chose to use ASCS data in the payment and loan limit simulations to better reflect current definitions.

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## REPFARM Simulations

We used another USDA model to analyze the potential effects of the policy options on individual farms. This model, REPFARM, simulates the complex physical and financial interrelationships of individual farm operations. It contrasts with FAPSIM, which is a model of the aggregate farm sector. A wide variety of farms have been developed for use in REPFARM, including wheat, corn, cotton, and rice farms. Using REPFARM simulations, we assessed the potential impacts on the income, net worth, and resource allocation of the specified farms. The findings are case study in nature and should not be generalized. ERS staff ran the model simulations.

In the REPFARM simulations, experiments involving payment and loan limits were conducted in a fairly straightforward fashion. REPFARM has a payment limit variable, so various payment limits were simulated directly. Loan limits are not modeled explicitly in REPFARM. As a result, the ERS analyst conducting the loan limit experiments reprogrammed the model to prevent any further entry of a farm's production under CCC loan once the hypothetical limits were reached. Any excess production was sold at market prices. Payment shift options were not simulated using REPFARM because of the difficulty in setting up farm simulations with all the financial condition parameters specifying whether a farm was eligible for larger or smaller payments. To simulate the effects of lowering target prices as specified in FSA85, experiments were conducted holding 1986 target prices constant through 1990. These results were then compared with REPFARM simulations using FSA85 target prices. In simulations involving payment limits and loan limits, the base case against which these limits were compared was FSA85 and a \$50,000 limit on deficiency and diversion payments.

We used farms in eight states for the REPFARM simulations, and they are described in table 8.1.

**Table 8.1: Description of Farms Used in REPFARM Simulations**

Farm	Description
Illinois corn/soybean	500 acres corn
	400 acres soybeans
Iowa corn/hog	660 acres corn
	180 acres oats
	290 acres soybeans
	755 feeder pigs
Kansas wheat/cattle	2,200 acres wheat
	250 acres sorghum
	79 acres alfalfa hay
	15 beef cows
	30 stocker steers
North Dakota wheat	1,800 acres wheat
	600 acres barley
Texas cotton	1,200 acres cotton
Mississippi cotton/soybean	456 acres cotton
	532 acres soybeans
California rice	539 acres rice
Louisiana rice/soybean	750 acres soybeans
	390 acres rice

Like FAPSIM, REPFARM does not account for all mitigating behavior in response to changes in federal policy. For example, we expected a \$20,000 payment limit to cause the Louisiana rice/soybean farm in our analysis to shift more acreage into soybean production. This did not occur because payment limits are not modeled in a way that affects returns to specific crop production in REPFARM. We also found that some of the selected farms could have received deficiency payments well above \$100,000 if not constrained by a payment limit. We might expect such farms to seriously consider reorganizing to maximize their incomes. By not fully accounting for farmers' mitigating actions, we believe that REPFARM probably overstates the results for the eight case studies. This is particularly true for the longer-term results because farmers can generally make more significant adjustments over a longer period of time.

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## Review Procedure

Our review was conducted between May 1986 and March 1987. We did not review computer controls relating to the FCRS and ASCS data bases that provided data on the distribution of CCC payments and loans. In addition, we did not verify the accuracy of the FAPSIM and REPFARM simulations because we did not have access to the models.

A copy of the draft report was submitted to USDA for comment. In written comments, USDA was critical of our study. We disagree with these comments and provide a copy of USDA's comments and our detailed response in appendix III.

# Differences Between Data Provided by ASCS and FCRS

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Information on recipients of 1985 commodity program payments is available through various USDA data files. The ASCS files and FCRS were the primary sources used for information on recipients' crops, farms, and financial condition. The ASCS data files provide information on all participating farms, while the FCRS data are obtained from a sample survey of participating and nonparticipating farms, which is designed to be representative of a larger number of farms.

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## ASCS Files

The ASCS farm and payment files contain records of each farm enrolled in the crop price and income support program, as well as records of payments made to each producer. The 1985 crop year files contain payment data for about 920,000 farms. The farm and producer file can be used to identify each farm's form of business organization, the farm(s) for a given producer, and if a farm has more than one producer, the files show the percentage share for each of them. Furthermore, the file contains base acreage, planted acreage, and crop yield information for each crop eligible for program payments. The payment history file shows the actual deficiency and diversion payments made to producers by ASCS county offices or the Kansas City management office. The loan summary file accounts for loan activity in the ASCS county offices. However, the ASCS files report data concerning participating farms only and do not provide the level of detailed, comprehensive financial characteristic information representative of the nation's farms in general, as found in the FCRS survey information.

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## FCRS

Direct farm payment and loan data included in this report were obtained from the 1985 FCRS, which was conducted in February and March 1986 by USDA's National Agricultural Statistical Service.<sup>1</sup> The FCRS is an integrated survey that combines multiple versions of a questionnaire to obtain and compile data about farm finances, production, and operations.

FCRS is a probability-based survey consisting of (1) a list frame of known operators stratified by economic size and other attributes and (2) an area frame consisting of all land segments in a state and stratified by land-use type. In other words, the survey covered farmers chosen from a list of known operators and areas of rural land of known size in which

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<sup>1</sup>This section is based on information from ERS' Agricultural Information Bulletin Number 500, August 1986, pp. 34-38.

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Differences Between Data Provided by ASCS  
and FCRS**

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all residents were interviewed to determine if they qualify as farm operators. According to ERS, the FCRS multiple frame sampling approach uses the desirable attributes of both frames.

The 1985 FCRS used five questionnaires to obtain detailed farm data from all respondents plus specific data on four selected farm operations: hog, dairy, and cow-calf operators, and potato growers. One questionnaire was devoted solely to detailed expenditure and financial items while the other four questionnaires contained financial and production data questions for the four specified types of operations.

The survey covered 22,945 contacts, 13,580 for detailed farm expenditure and financial data and 9,365 for the four specified types of operations. Since only a probability sample of farmers was surveyed, each respondent represented a number of other farms of a similar size and type. While estimates based on the sample differ from data that would have been obtained if a complete enumeration of all farms had been taken, various measures such as survey pretesting, enumerator training, and data editing and analysis were undertaken to minimize nonsampling error.

All major farm types were represented in the survey. Livestock producers accounted for 58 percent of those surveyed and farms engaged in crop production accounted for 42 percent. The most common types of farms were beef, hog, and sheep producers, and cash grain farmers.

To qualify as a farm for the survey, an operation must have sold or produced at least \$1,000 worth of agricultural products or spent at least \$1,000 for feed, supplies, equipment or other supplies for the purpose of producing agricultural products.

From the 1985 FCRS, ERS reported an expanded number of almost 1.6 million farms. This number differs from the official 1985 USDA number of farms (2.3 million) and the 1982 Census of Agriculture number of farms (2.2 million). USDA and the Census of Agriculture define a farm as any place from which \$1,000 or more of agricultural products were sold or normally would have been sold. According to ERS, most FCRS undercounting relates to small sales class farms, mainly those with less than \$10,000 in sales. ERS reported that other National Agricultural Statistics Service data indicate the FCRS shows almost 600,000 fewer farms with sales of less than \$10,000 than the official farm number estimates. ERS also reported that the survey provides a fairly close count of farms with

sales over \$40,000, those generally considered to be commercial-size farm operations.

## Comparison of ASCS and FCRS Data

The ASCS and the FCRS data differ in important ways. First, FCRS data are derived by surveying a sample of farms nationwide, both participating and nonparticipating; the sample is designed so that the data obtained can be reasonably used to represent a larger number of farms, although not necessarily all farms. In contrast, ASCS files are designed to hold actual farm and payment data for all participating farms and producers.

Second, the FCRS and ASCS data do not use the same definition of "farm." To qualify as a farm for FCRS, as noted above, an operation must have produced or sold at least \$1,000 worth of agricultural products or spent at least \$1,000 for feed, equipment, or other supplies for the purpose of producing agricultural products. In contrast, ASCS generally allows producers to define their farms in terms of land area, regardless of sales or expenditures. Therefore, one FCRS "farm" may comprise more than one ASCS "farm" or vice versa.

Third, the FCRS survey is designed to obtain data about farm operations on a calendar year basis; that is, survey respondents provide information about their farms—crop production and sales, government payments received, and so forth—for a specific calendar year. However, program crops are sometimes not sold in the same calendar year in which they are produced; similarly, government payments applicable to a specific year's crops may be made during a subsequent year. Therefore, sales of program crops and receipt of government payments reported for a calendar year to FCRS may pertain to crops grown during a previous year. In contrast, ASCS files show payments made to farms and producers on a crop year basis; that is, the data show payments made to producers for a specific year's crops, regardless of the calendar year in which the payments were actually made.

Fourth, FCRS does not distinguish between different kinds of government payments. Farms that reported receiving government payments could have received not only deficiency and diversion payments, but also a variety of payments under other government programs (for example, storage payments or conservation payments). Consequently, FCRS data show that almost \$1 billion in 1985 government payments went to farms that we defined as nonparticipating because they did not report idling land.

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Fifth, ASCS determines production volume by multiplying the number of acres by the expected crop yield (i.e., bushels or pounds) per acre. ASCS calculates this expected yield by using historical production averages and making crop-specific adjustments. The FCRS data are based on actual, reported yields and generally provide higher production volumes than the ASCS data, except for wheat and cotton. In addition, ASCS and FCRS use different definitions of planted acres. Table I.1 illustrates comparisons of the ASCS and FCRS information.

**Table I.1: Comparison of ASCS and FCRS  
Production and Planted Acres Data, 1985**

Figures in millions

Commodity	Production		Planted Acres	
	ASCS	FCRS	ASCS	FCRS
Wheat (bu.)	1,456.5	1,359.5	41.7	38.4
Corn (bu.)	5,186.6	7,338.2	48.9	53.4
Sorghum (bu.)	505.6	786.1	8.3	10.4
Barley/oats (bu.)	340.2	593.8	6.9	11.2
Cotton (lbs.)	4,472.4	3,683.7	8.1	6.4
Rice (cwt.)	10,881.3	13,048.2	2.2	2.4

Source: GAO calculation of ASCS and FCRS data files.

Finally, ERS estimates that the 1985 FCRS data are representative of about 384,000 participating farms and about 1,173,000 nonparticipating farms. In contrast, ASCS data show that payments for the 1985 crop year were made to about 920,000 farms participating in the commodity programs. In addition to discrepancies caused by different definitions of "farm," participation rates can be misleading if counted by type of commodity, rather than overall. For example, farms might plant barley and oats "outside" the program (that is, not participate in the programs for these commodities), yet participate in the program for their corn acreage. These farms would not be reported in the ASCS barley and oats data but would be designated as "participants" in the FCRS data since they received payments for their corn production.

# Distribution of Farm Program Payments and CCC Crop Loans

In chapter 2 we presented major examples from our analysis of distributional data on farm program direct payments and CCC crop loans. This appendix presents the detailed results of our analysis.

As we previously stated in chapter 2, ERS (through its 1985 FCRS) has identified almost 25 percent of the nation's 1.6 million farms as participating in the federal government's direct farm payment programs and over 14 percent of the farms as receiving CCC crop loans in calendar year 1985. The 1985 survey data indicate that about 384,000 farms received direct payments totaling about \$4.6 billion. In addition, the survey data showed about 222,000 farms—nearly 58 percent of the farms that participated in the direct farm payment program—borrowed over \$9.3 billion from the CCC.

ASCS data show that about 980,000 producers received about \$5.3 billion in deficiency payments and about \$0.9 billion in diversion payments in crop year 1985. According to ASCS data that we compiled, about 462,000 producers took out loans totaling about \$15.2 billion in the 1985 crop year.

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## Distribution of Farm Program Payments

We analyzed the FCRS data using six farm group classifications: size of payment, farm size (sales and acres), income, equity, debt-to-asset ratio, and regional location.

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## Most Farms Received Small Payments

Most FCRS farms and ASCS producers received payments of less than \$10,000. According to the FCRS, two-thirds of the participating farms received 1985 (calendar year) payments of less than \$10,000.<sup>1</sup> Their share of total payments was about 21 percent. A small number of farms, on the other hand, received a large share of payments. Some 6 percent of the participating farms received about 35 percent of the payments. These were farms in the top two payment classes—\$40,000 to \$49,999 and \$50,000 or more. Despite the statutory \$50,000 limit on deficiency and diversion payments, the FCRS identified about 13,000 farms that received at least \$50,000. Possible explanations for this include: (1) the 1985 FCRS not only counts deficiency and diversion payments but also storage and conservation payments in its direct payment figures; (2) a

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<sup>1</sup>Participating farms are defined here as those receiving direct government farm payments and idling acres as a result of a government program.



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farm operation surveyed in the FCRS may consist of separately constituted units that are each eligible for up to \$50,000 in payments; and (3) some farms were probably right at the \$50,000 limit.

According to the ASCS data on 1985 crop year payments, about 82 percent of the participating producers received less than \$10,000. The roughly 3 percent of producers in the top two payment classes received about 22 percent of the payments. The FCRS and ASCS size of payment information is displayed in tables II.1 and II.2, respectively.

**Table II.1: FCRS: Number of Participating Farms and Total Payments, by Size of Payment Class, 1985**

Size of payment class	Farms		Payments	
	Number	Percent	Amount (in mil.)	Percent
\$50,000 or more	13,000	3.4	\$1,079	23.5
\$40,000 to \$49,999	11,000	2.9	536	11.7
\$30,000 to \$39,999	10,000	2.6	360	7.8
\$20,000 to \$29,999	28,000	7.3	687	14.9
\$10,000 to \$19,999	67,000	17.4	955	20.8
\$ 9,999 or less	254,000	66.1	981	21.3
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>100.0</b>	<b>\$4,599</b>	<b>100.0</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 FCRS data.

**Table II.2: ASCS: Number of Participating Producers and Total Payments, by Size of Payment Class, 1985**

Size of payment class	Producers		Payments	
	Number	Percent	Amount (in mil.)	Percent
\$50,000 or more	15,000	1.5	\$805	12.8
\$40,000 to \$49,999	13,000	1.3	598	9.5
\$30,000 to \$39,999	17,000	1.7	577	9.2
\$20,000 to \$29,999	34,000	3.5	817	13.0
\$10,000 to \$19,999	97,000	9.9	1,347	21.4
\$ 9,999 or less	804,000	82.0	2,148	34.1
<b>Total<sup>a</sup></b>	<b>980,000</b>	<b>100.0</b>	<b>\$6,291</b>	<b>100.0</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 ASCS data.

**Farms in Larger Sales Classes Received a Major Share of Payments**

We analyzed the distribution of payments using two measures of farm size—amount of sales and number of acres. The 1985 FCRS reported that about 93 percent of the roughly \$4.6 billion in 1985 farm program payments were received by commercial farms (sales of \$40,000 or more). Of

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the 623,000 commercial farms, some 46 percent participated in the farm payment programs. Commercial farms accounted for about 75 percent of all farms that received payments.

Farms with sales of \$100,000 to \$249,999 received the highest portion—about 37 percent—of the payments. Their average payment was about \$15,000. The largest farms, with sales of \$500,000 or more, received about 16 percent of the payments. About 3.4 percent of the total participating farms were in this latter category, and their average payment was almost \$54,000. Table II.3 provides the payment distribution information by sales class.

**Table II.3: Number of Participating Farms and Total Payments, by Sales Class, 1985**

Sales class (in thousands)	Farms		Payments		Average
	Number	Percent	Amount (in mil.)	Percent	
<b>Commercial farms</b>					
\$500 or more	13,000	3.4	\$718	15.6	\$55,231
\$250 to \$499	38,000	9.9	1,004	2.8	26,421
\$100 to \$249	115,000	29.9	1,720	37.4	\$14,957
\$40 to \$99	120,000	31.3	856	18.6	7,133
<b>Total<sup>a</sup></b>	<b>287,000</b>	<b>74.7</b>	<b>4,298</b>	<b>93.4</b>	<b>\$14,976</b>
<b>Noncommercial farms</b>					
\$39 or less	98,000	25.5	301	6.6	3,071
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>100.0</b>	<b>\$4,599</b>	<b>100.0</b>	<b>\$11,977</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

The 1985 FCRS data show that farms operating the most acres received a high proportion of the payments. Farms that operated more than 1,000 acres received about 52 percent of the farm program payments. These farms accounted for 22 percent of participating farms. The largest farms, which operated more than 2,000 acres, accounted for about 7 percent of all participating farms and received about 24 percent of all payments. Their average payment was over \$41,000. The group with the fewest operated acres—250 or less—received about 7 percent of the payments and comprised almost 25 percent of participating farms. Their average payment was less than \$3,500. Table II.4 displays the acreage class information.

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**Table II.4: Number of Participating Farms and Total Payments, by Acres Operated Class, 1985**

Acres operated class	Farms		Payment		
	Number	Percent	Amount (in mil.)	Percent	Average
2,001 or more	27,000	7.0	\$1,118	24.3	\$41,407
1,001 to 2,000	57,000	14.8	1,251	27.2	21,947
501 to 1,000	99,000	25.8	1,198	26.0	12,101
251 to 500	107,000	27.9	703	15.3	6,570
250 or less	95,000	24.7	328	7.1	3,453
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>100.0</b>	<b>\$4,599</b>	<b>100.0</b>	<b>\$11,977</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

**Farms in Higher Income Classes Received a Major Share of Payments**

We analyzed the payment distribution by NCFI class. NCFI is defined as farm sales, including government payments, less cash operating expenses, including interest and debt repayment. Excluded are inventory adjustments, non-farm income, family living expenses, and depreciation.

The 1985 FCRS shows that farms with a positive NCFI of less than \$50,000 received the highest portion—about 34 percent—of the about \$4.6 billion in 1985 farm program payments. Farms with NCFI of \$150,000 or more received about 14 percent of the payments. Payments averaged a little more than \$50,000 for the over 3 percent of participating farms in this latter category. Farms with negative NCFI comprised about 33 percent of the participating farms and received about 27 percent of the payments. Table II.5 provides the payment distribution by NCFI class.

**Table II.5: Number of Participating Farms and Total Payments, by Income Class, 1985**

Net cash farm income class	Farms		Payments		
	Number	Percent	Amount (in mil.)	Percent	Average
\$150,000 or more	13,000	3.4	\$655	14.2	\$50,385
\$100,000 to \$149,999	14,000	3.6	317	6.9	22,643
\$ 50,000 to \$99,999	47,000	12.2	818	17.8	17,404
\$0 to \$49,999	185,000	48.2	1,563	34.0	8,449
Less than \$0 to -\$20,000	80,000	20.8	495	10.8	6,188
Less than -\$20,000	46,000	12.0	750	16.3	16,304
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>100.0</b>	<b>\$4,599</b>	<b>100.0</b>	<b>\$11,977</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

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As table II.6 shows, for the participating farms with negative NCFI, another \$4 billion in payments would have been necessary for them to have a zero NCFI. Much less—some \$583 million in payments—would have been needed to cover the losses of only those farms with a negative NCFI of up to minus \$20,000. The NCFI data excluding and including payments are displayed in table II.6.

**Table II.6: Total and Average Net Cash Farm Income, Excluding and Including Payments, for Participating Farms, by Income Class, 1985**

Net cash farm income class	No. of farms	Total Payments <sup>a</sup>	Total NCFI <sup>a</sup>	Average NCFI (in thousands)	
				Excluding payments	Including payments
\$150,000 or more	13,000	\$655	\$3,414	\$213	\$263
\$100,000 to \$149,999	14,000	317	1,678	97	120
\$ 50,000 to \$99,999	47,000	818	3,215	51	68
\$0 to \$49,999	185,000	1,563	3,637	12	20
Less than \$0 to-\$20,000	80,000	495	-583	-13	-7
Less than -\$20,000	46,000	750	-3,424	-90	-74
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>\$4,599</b>	<b>\$7,937</b>	<b>\$9</b>	<b>\$21</b>

<sup>a</sup>Total payments and total NCFI are in millions of dollars.

<sup>b</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

**Farms With Greater Equity Received a Larger Share of Payments**

The FCRS data on payments by equity (assets minus debts) class show that the largest farm group—the roughly 55 percent of participating farms with a positive equity of less than \$250,000—received 36 percent of the payments. The roughly 15 percent of participating farms with equity of \$500,000 or more received about 30 percent of the payments. The wealthiest group, which had equity of \$1 million or more, comprised 4 percent of participating farms and received 13 percent of the payments. Technically insolvent farms—those with debts exceeding assets—were 8 percent of the participating farms and received 9 percent (\$425 million) of the payments. Table II.7 displays the information on payments by equity class.

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**Table II.7: Number of Participating Farms and Total Payments, by Farm Equity Class, 1985**

Farm equity class	Farms		Payment		
	Number	Percent	Amount (in mil.)	Percent	Average
\$1,000,000 or more	15,000	3.9	\$600	13.0	\$40,000
\$750,000 to \$999,999	11,000	2.9	273	5.9	24,818
\$500,000 to \$749,999	32,000	8.3	508	11.0	15,875
\$250,000 to \$499,999	84,000	21.9	1,140	24.8	13,571
\$0 to \$249,999	210,000	54.7	1,654	36.0	7,876
Less than \$0	32,000	8.3	425	9.2	13,281
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>100.0</b>	<b>\$4,599</b>	<b>100.0</b>	<b>\$11,977</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 FCRS data.

**Farms and Payments in Proportion by Debt-To-Asset Ratio Class**

The debt-to-asset ratio compares the value of debt with the value of assets and is one indicator of financial soundness. Generally, farms with low ratios are sounder than the more leveraged ones with high ratios. The 1985 FCRS data indicate a rather proportionate distribution of payments among the debt-to-asset ratio classes. Table II.8 details this information.

**Table II.8: Number of Participating Farms and Total Payments, by Debt-To-Asset Ratio Class, 1985**

Debt-to asset ratio class (percent)	Farms		Payments		
	Number	Percent	Amount (in mil.)	Percent	Average
0 to 40	240,000	62.7	\$2,559	56.0	\$10,663
41 to 70	78,000	20.4	1,108	24.2	14,205
71 to 100	33,000	8.6	483	10.6	14,636
Over 100	32,000	8.4	423	9.3	13,125
<b>Total<sup>a</sup></b>	<b>383,000</b>	<b>100.0</b>	<b>\$4,572</b>	<b>100.0</b>	<b>\$11,937</b>

<sup>a</sup>Totals may not add due to rounding. Also, slightly lower numbers of farms and payments by debt-to-asset ratio category were reported for the other financial measurement categories discussed in this chapter. Farms that reported no assets were excluded.  
Source: GAO analysis of 1985 FCRS data.

**Most Participating Farms and Payments Were Concentrated in Midwestern Regions**

Wide variances in the number and percentage of participating farms and farm program payments occurred among regions of the country. Most participating farms were located in the Corn Belt and Northern Plains regions. These farms accounted for a total of almost 60 percent of the participating farms, and they received almost 51 percent of total farm program payments. Farms in the Southern Plains, Delta, and Pacific

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regions accounted for a total of over 11 percent of the participating farms, and they received more than 25 percent of the payments.

A comparison of regions by average payment received shows that farms located in the Corn Belt and Northern Plains regions had a combined average payment of about \$10,000, which was significantly less than the combined average payment received by farms in the Pacific, Delta, and Southern Plains regions—almost \$27,000. As Table II.9 shows, farms in the Pacific region received the highest average payment (over \$31,000), and farms in the Northeast region received the lowest average payment (less than \$5,000).

**Table II.9: Number of Participating Farms and Total Payments, by Region, 1985**

Region	Farms		Payments		
	Number	Percent	Amount (in mil.)	Percent	Average
Corn Belt	149,000	38.8	\$1,234	26.8	\$8,282
Northern Plains	81,000	21.1	1,106	24.1	13,654
Lake States	61,000	15.9	606	13.2	9,934
Southern Plains	25,000	6.5	577	12.6	23,080
Delta States	12,000	3.1	372	8.1	31,000
Mountain	15,000	3.9	273	5.9	18,200
Pacific	7,000	1.8	220	4.8	31,429
Appalachian	16,000	4.2	89	1.9	5,563
Southeast	8,000	2.1	75	1.6	9,375
Northeast	10,000	2.6	46	1.0	4,600
<b>Total<sup>a</sup></b>	<b>384,000</b>	<b>100.0</b>	<b>\$4,599</b>	<b>100.0</b>	<b>\$11,977</b>

Note: The states in each region are defined as follows:

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

**Table II.9A: States in Each Region**

Region	States
Corn Belt	IA, IL, IN, MO, OH
Northern Plains	KS, ND, NE, SD
Lake States	MI, MN, WI
Southern Plains	OK, TX
Delta States	AR, LA, MS
Mountain	AZ, CO, ID, MT, NM, NV, UT, WY
Pacific	CA, OR, WA
Appalachian	KY, NC, TN, VA, WV
Southeast	AL, FL, GA, SC
Northeast	CT, DE, MA, MD, ME, NJ, NH, NY, PA, RI, VT

## Distribution of CCC Crop Loans

We analyzed the distribution of CCC crop loans using seven farm classifications: size of loan, size of farm program payment, sales, income, equity, debt-to-asset ratio, and regional location.

### Farms Taking Out Larger Loans Accounted for Major Share of the Loan Amounts

As with payments, the distribution of CCC crop loans in 1985 tended to be concentrated in a small number of farms. According to the FCRS, less than 9 percent of the farms taking out these loans in 1985 accounted for over 39 percent of the total loan amounts. They were the farms receiving crop loans of \$100,000 or more. In addition, most borrowing farms—over 75 percent—put smaller amounts of production under loan. About 36 percent of the loan amounts went to the group with loans of less than \$50,000. According to ASCS data, less than 7 percent of the producers accounted for 37 percent of the loan amounts. They took out loans of \$100,000 or more. Over 81 percent of the producers took out almost 38 percent of the loan amounts. They took out loans of less than \$50,000. Tables II.10 and II.11 display the distribution of CCC crop loans by loan size.

**Table II.10: FCRS: Number of Farms  
 Receiving Crop Loans and Loan  
 Amounts, by Size of Loan Class, 1985**

Size of crop loan class	Farms		Loans	
	Number	Percent	Amount (in mil.)	Percent
\$200,000 or more	5,000	2.3	\$1,650	17.7
\$150,000 to \$199,999	4,000	1.8	719	7.7
\$100,000 to \$149,999	10,000	4.5	1,294	13.9
\$ 50,000 to \$99,999	33,000	14.9	2,326	25.0
\$ 0 to \$49,999	168,000	75.7	3,332	35.7
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9,321</b>	<b>100.0</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

**Appendix II  
Distribution of Farm Program Payments and  
CCC Crop Loans**

**Table II.11: ASCS: Number of Producers Receiving Crop Loans and Loan Amounts, by Size of Loan Class, 1985**

Size of crop loan class	Producers		Loans	
	Numbers	Percent	Amount (in mil.)	Percent
\$500,000 or more	467	0.1	\$693	4.6
\$200,00 to \$499,999	6,315	1.4	1,735	11.4
\$150,000 to \$199,999	6,524	1.4	1,120	7.4
\$100,000 to \$149,999	17,172	3.7	2,093	13.6
\$50,000 to \$99,999	55,554	12.0	3,867	25.4
\$25,000 to \$49,999	82,290	17.8	2,927	19.2
\$24,000 or less	293,585	63.6	2,804	18.4
<b>Total<sup>a</sup></b>	<b>461,907</b>	<b>100.0</b>	<b>\$15,218</b>	<b>100.0</b>

Note: The table accounts for \$15.2 billion or 94 percent of the \$16.2 billion in crop loans made by ASCS in crop year 1985 for corn, wheat, grain sorghum, barley, oats, cotton, and rice. Our tables do not include all \$16.2 billion principally because producer numbers were not available in the computer records for about 71,000 loans.

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 ASCS data.

**Farms With Large Payments Also Received Large Loans**

There was a link between the size of CCC loans and payments. The farms receiving larger payments also, on average, took out larger loans. According to the FCRS, the average crop loan for farms receiving at least \$50,000 in payments was about \$163,000. Table II.12 shows the distribution of loans by payment size.

**Table II.12: Number of Farms Receiving Crop Loans and Loan Amounts, by Size of Payment Class, 1985**

Size of payment class	Farms		Loans		
	Number	Percent	Amount (in bil.)	Percent	Average
\$50,000 or more	8,000	3.6	\$1.3	14.0	\$162,500
\$40,000 to \$49,999	7,000	3.2	0.7	7.5	100,000
\$30,000 to \$39,999	7,000	3.2	0.7	7.5	100,000
\$20,000 to \$29,999	22,000	9.9	1.5	16.1	68,182
\$10,000 to \$19,999	44,000	19.8	1.9	20.4	43,182
\$ 9,999 or less	134,000	60.4	3.2	34.4	23,881
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9.3</b>	<b>100.0</b>	<b>\$41,892</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

**Farms in Larger Sales Classes Received Major Share of Loans**

The 1985 FCRS reported that almost 96 percent of the 1985 CCC crop loans were taken out by commercial farms (sales of \$40,000 or more). Commercial farms accounted for about 84 percent of the farms that borrowed from CCC. Farms with sales of \$100,000 to \$249,999 took out the



**Appendix II  
Distribution of Farm Program Payments and  
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highest portion of the loan amounts—almost 39 percent. Their loans averaged about \$47,000. These farms comprised almost 35 percent of the borrowing farms. The group of largest farms, with sales of \$500,000 or more, borrowed about 15 percent of the loan amounts and comprised less than 4 percent of the borrowing farms. Their average loan was about \$175,000. Table II.13 shows the distribution of 1985 crop loans by sales class.

To help understand the relationship between farm size, type of crop, and size of loan, we calculated the number of harvested acres by type of crop associated with \$50,000 in loans. Assuming average 1985 loan rates and crop yields per acre, a farm would place under loan the production from 400 acres of wheat, 293 acres of soybeans, 166 acres of corn, 139 acres of cotton, or 116 acres of rice.

**Table II.13: Number of Farms Receiving Crop Loans and Loan Amounts, by Sales Class, 1985**

Sales class (in thousands)	Farms		Loans		
	Number	Percent	Amount (in bil.)	Percent	Average
<b>Commercial farms</b>					
\$500 or more	8,000	3.6	\$1.4	15.1	\$175,000
\$250 to \$499	26,000	11.7	2.2	23.7	84,615
\$100 to \$249	77,000	34.7	3.6	38.7	46,753
\$40 to \$99	75,000	33.8	1.8	19.4	24,000
<b>Total<sup>a</sup></b>	<b>186,000</b>	<b>83.8</b>	<b>8.9</b>	<b>95.7</b>	<b>\$47,849</b>
<b>Noncommercial farms</b>					
\$39 or less	36,000	16.2	0.4	4.3	11,111
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9.3</b>	<b>100.0</b>	<b>\$41,892</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 FCRS data.

**Farms With High Net Incomes Took Out Large Share of the Loan Amounts**

The 1985 FCRS reported that farms with NCFI of \$150,000 or more took out over 18 percent of the CCC crop loan amounts. They comprised 5 percent of the borrowing farms. Farms in the highest income group took out an average loan of about \$155,000. The lowest income group (negative NCFI of less than minus \$20,000) took out 14 percent of the loan amounts, for an average loan of about \$46,000. Table II.14 displays the distribution of farms receiving crop loans by income class.

**Appendix II  
Distribution of Farm Program Payments and  
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**Table II.14: Number of Farms Receiving  
Crop Loans and Loan Amounts, by  
Income Class, 1985**

Net cash farm income class	Farms		Loans		
	Number	Percent	Amount (in bil.)	Percent	Average
\$150,000 or more	11,000	5.0	\$1.7	18.3	\$154,545
\$100,000 to \$149,999	11,000	5.0	0.8	8.6	72,727
\$ 50,000 to \$99,999	32,000	14.4	1.8	19.4	56,250
\$ 0 to \$49,999	106,000	47.7	3.0	32.3	28,302
Less than \$0 to -\$20,000	35,000	15.8	0.7	7.5	20,000
Less than -\$20,000	28,000	12.6	1.3	14.0	46,429
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9.3</b>	<b>100.0</b>	<b>\$41,892</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 FCRS data.

**Farms With Greater  
Equity Took Out Large  
Share of the Loan  
Amounts**

The 1985 FCRS reported that farms with equity of \$500,000 or more comprised over 14 percent of borrowing farms and took out almost 27 percent of the loan amounts. The wealthiest group, which had equity of at least \$1 million, took out almost 11 percent of the loan amounts. The farms in this group had an average loan of about \$125,000. The largest portion of 1985 CCC crop loan amounts went to the group of farms with positive equity of less than \$250,000. These farms received almost 39 percent of the loan amounts and comprised about 54 percent of the borrowing farms. Technically insolvent (negative equity) farms received almost 12 percent of the loan amounts. Their average loan was almost \$55,000. Table II.15 contains the distribution of crop loan data by equity class.

**Table II.15: Number of Farms Receiving  
Crop Loans and Loan Amounts, by  
Equity Class, 1985**

Farm equity class	Farms		Loans		
	Number	Percent	Amount (in bil.)	Percent	Average
\$1,000,000 or more	8,000	3.6	\$1.0	10.7	\$125,000
\$750,000 to \$999,999	5,000	2.3	.4	4.3	80,000
\$500,000 to \$749,999	19,000	8.6	1.1	11.8	57,895
\$250,000 to \$499,999	50,000	22.5	2.1	22.6	42,000
\$ 0 to \$249,999	120,000	54.1	3.6	38.7	30,000
Less than \$0	20,000	9.0	1.1	11.8	55,000
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9.3</b>	<b>100.0</b>	<b>\$41,890</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 FCRS data.

**Appendix II  
Distribution of Farm Program Payments and  
CCC Crop Loans**

**Farms With Higher Debt-To-Asset Ratios Took Out Larger Loans**

The distribution of loan amounts by debt-to-asset ratio class is weighted towards farms that are more highly leveraged. The FCRS shows that about 46 percent of borrowing farms with debt-to-asset ratios greater than 40 percent took out almost 58 percent of the 1985 loan amounts. The average loan for the group with the lowest ratio (40 percent or less) was about \$33,000. The other groups had much higher average loan amounts, as high as almost \$61,000 for the 71 to 100 percent debt-to-asset ratio group. Table II.16 shows the distribution of crop loans by debt-to-asset ratio class.

**Table II.16: Number of Farms Receiving Crop Loans and Loan Amounts, by Debt-To-Asset Ratio Class, 1985**

Debt-to-asset ratio class (percent)	Farms		Loans		Average
	Number	Percent	Amount (in bil.)	Percent	
0 to 40	120,000	54.1	\$3.9	41.9	\$32,500
41 to 70	59,000	26.6	2.9	31.2	49,153
71 to 100	23,000	10.4	1.4	15.1	60,870
Over 100	20,000	9.0	1.1	11.8	55,000
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9.3</b>	<b>100.0</b>	<b>\$41,892</b>

<sup>a</sup>Totals may not add due to rounding.  
Source: GAO analysis of 1985 FCRS data.

**Midwestern Farms Accounted for Most Loans**

Wide variances existed between regions of the country in the distribution of 1985 CCC crop loans, but farms located in the Corn Belt borrowed the highest proportion of the total loan amounts—over 43 percent. They comprised over 37 percent of the borrowing farms. Farms in the Northern Plains and Lake States regions borrowed the next largest proportions. The average crop loan ranged from \$85,000 in the Delta States region to about \$21,000 in the Appalachian region. The Corn Belt region's average loan was almost \$49,000. Table II.17 shows the distribution of crop loans by region.

**Appendix II  
Distribution of Farm Program Payments and  
CCC Crop Loans**

**Table II.17: Number of Farms Receiving  
Crop Loans and Loan Amounts, by  
Region, 1985**

Region	Farms		Loans		
	Number	Percent	Amount (in mil.)	Percent	Average
Corn Belt	83,000	37.4	\$4,043	43.4	\$48,711
Northern Plains	63,000	28.4	2,187	23.4	34,714
Lake States	36,000	16.2	1,491	16.0	41,417
Southern Plains	13,000	5.9	579	6.2	44,538
Delta States	3,000	1.4	255	2.7	85,000
Mountain	6,000	2.7	231	2.5	38,500
Appalachian	9,000	4.1	190	2.0	21,111
Pacific	3,000	1.4	160	1.7	53,333
Southeast	3,000	1.4	116	1.2	38,666
Northeast	2,000	0.9	68	0.7	34,000
<b>Total<sup>a</sup></b>	<b>222,000</b>	<b>100.0</b>	<b>\$9,321</b>	<b>100.0</b>	<b>\$41,986</b>

<sup>a</sup>Totals may not add due to rounding.

Source: GAO analysis of 1985 FCRS data.

Our July 1987 report provides the 1985 crop year payment and crop loan distribution by crop and size of payment and loan. The source for this information was ASCS payment and loan files, which contain an actual accounting of financial transactions.<sup>2</sup>

<sup>2</sup>Farm Programs: 1985 Payments and Crop Loans by State (GAO/RCED-87-155FS; July 22, 1987).

# Comments From U.S. Department of Agriculture

Note: GAO comments supplementing those in the report text appear at the end of this appendix.



DEPARTMENT OF AGRICULTURE  
OFFICE OF THE SECRETARY  
WASHINGTON, D. C. 20250

JUL 22 1987

SUBJECT: USDA Review of GAO Draft Report--"Farm Payments:  
Analysis of Targeting Options" RCED-87-144

TO: J. Dexter Peach  
Assistant Comptroller General  
Resource, Community, and Economic Development Division  
General Accounting Office

Thank you for the opportunity to review the subject Draft Report.  
USDA's review comments are enclosed.

A handwritten signature in cursive script, appearing to read "James I. Armstrong".

Under Secretary for International  
Affairs and Commodity Programs

Enclosures

-2-

7. Farms used in REPFARM model are not representative of the farm sector.
8. Misleading and skewed results due to failure to analyze program benefits on basis of percentage of production or acreage.
9. Impacts of "farmers' mitigating behavior" largely dismissed with unsupported use of 25-percent sensitivity analysis.
10. No reporting of statistical measures, e.g., standard errors, which indicate the reliability and accuracy of the results.
11. Use of "per farm" data results in overestimation of effects of alternative payment limits because actual program administration is on a "per person" basis.
12. Commodity program descriptions indicate lack of understanding of programs' provisions and interrelationships of program provisions.
13. No consideration of the impacts of alternative supply-demand scenarios on the distribution of program participation and payments.
14. No analysis of sliding scale approach for determining program benefit eligibility.

Appendix III  
Comments From U.S. Department  
of Agriculture

To a limited degree, the report recognizes many of the issue's concerns. The combination of data limitations, model misapplication, and oversight of relevant program features results in conclusions that are not based on careful and rigorous analysis. In present form, the report provides no significant new insights to the informed reader but, more importantly, could mislead the careless or uninformed reader.

The following summarizes USDA's more specific concerns:

1. The report is too long and repetitive.
2. Important factors are assumed away or not mentioned. These factors are key policy variables that greatly impact production, program participation, and budget. For example:
  - a. Changes in price support and paid land diversion program provisions.
  - b. Impacts on loan forfeitures (and usually market prices).
  - c. Comparisons between production costs, support levels, and market prices.
  - d. Analysis of relevant opportunity costs for producers shifting production between crops.
  - e. Mention of regional impacts, e.g., lower-cost farmers would tend to be in regions where soil and climate are more conducive to production of specific crops. Any program that finances the production of any crop in any region would be in error.
3. No consideration of low or negative incomes based on land speculation or incompetence.
4. No discussion of desired Government stock levels--just comments that Government loses supply control, which would not necessarily be correct.
5. No discussion of problems encountered when previous attempts were made to lower the current payment limitation to \$40,000 per year (very relevant to the discussion of the alternatives).
6. No comment on administrative and political feasibility of requiring potential program participants to submit their tax returns, balance sheets, or income statements for review to determine program eligibility.

The following are GAO's comments on the USDA letter dated July 22, 1987.

## GAO Comments

GAO disagrees with USDA's overall conclusion. Regarding the Department's concerns about data limitations, model misapplication, and oversight of relevant program features, we note that our study uses USDA data and two USDA econometric models (which are structured according to "relevant program features"). Furthermore, we consulted extensively with ERS staff on methodology. Contrary to USDA's claim, we believe our report provides many new insights. To our knowledge, no previous study has quantified such a wide range of potential impacts of the options examined in this report. Also, the results are presented with numerous cautionary statements so readers will not be misled.

We have the following comments on USDA's more specific concerns.

1. USDA makes no suggestions on where to shorten the report or prevent repetition. We believe the report is an appropriate length for an in-depth analysis of such complex policy options.

2a. Our FAPSIM simulations, which use FSA85 as the base case, account for changes in price support and diversion provisions.

2b. Our FAPSIM simulations show results for impacts on market prices but not net crop loan outlays. In response to USDA's concern, we have added cautionary language in reporting the FAPSIM results to note that price decreases could lead to more loan forfeitures.

2c. We included comparisons of changes in production costs (as a component of net farm income), support levels (as measured by deficiency payments), and market prices in our FAPSIM simulations. Our results, as reported in tables 3.7, 4.5, 5.3, and 6.5, identify the effects that USDA claims are assumed away or not mentioned.

2d. The effects of opportunity costs and crop production shifts are accounted for in the FAPSIM simulations. For example, in discussing crop loan limits in chapter 5, we state that "lower returns could induce some farmers to decrease their participation and produce more nonprogram crops . . ."

2e. The FCRS and ASCS data analyses and FAPSIM simulations do not disaggregate potential impacts to the regional level. Furthermore, the Senate



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Budget Committee did not ask us to look at policy options that would be designed for given regions.

3. We have considered the problem of low incomes due to land speculation or incompetence. In chapter 7, we emphasize the equity concern that certain farmers "may not 'deserve' help because of their highly risky or inefficient business practices . . ."

4. We agree that stock levels can have important effects but do not know what are "desirable" levels. Contrary to USDA's comment, we do not make the extreme statement that the government "loses" supply control. In a June 1987 GAO report (GAO/RCED-87-99), we stated that some targeting options could "decrease" government control of supply.

5. We emphasize in numerous places the difficulties caused by farmers mitigating behavior, and we account for such behavior in the FAPSIM sensitivity analyses. GAO's April 1987 and July 1987 reports (GAO/RCED-87-120BR and GAO/RCED-87-176) on farm reorganizations point out the difficulties experienced in administering the payment limit.

6. USDA did not recognize our discussion of administrative feasibility in the executive summary and chapter 7. We state in chapter 7 that a "new administrative apparatus will be needed, however, to introduce a means test to the payment or crop loan programs. This new apparatus may require adding ASCS staff at the local level." We do not have an opinion on political feasibility.

7. We make numerous statements to inform the reader that the REPFARM results are not generalizable to the farm sector or to particular types of farms. For example, our executive summary states that while REPFARM "is useful for illustrative purposes, it is not designed to provide results that are generalizable."

8. Our FAPSIM simulations provide results on changes in production or acreage. In tables 3.7, 4.5, 5.3, and 6.5, we present the potential impacts of the policy options on production and acreage as measured by percentage change from the base case provisions of FSA85. It is unclear what additional analysis is recommended by USDA.

9. The importance of recognizing farmers' mitigating behavior is implicit in our use of a sensitivity analysis. We based the 25 percent factor on earlier GAO work on reorganizations and the payment limit. In response

to USDA's concern about lack of support for the 25 percent, we have added explanatory language in chapter 3.

10. It is not technically possible for the FAPSIM and REPFARM models to report statistical measures such as standard error. In any event, our purpose, as stated throughout the report, is to provide information for ranking alternatives and examining the general direction and order of magnitude of changes associated with the alternatives. We do not claim to make any precise projections.

11. We intentionally defined the payment recipients in two ways (per farm and per producer) to show the importance of how the recipient is defined. We explained in chapter 4: "If payment limits could be effectively applied to farms, which are more broadly defined, our FCRS data analysis would give more appropriate results. The ASCS data analysis would better fit current circumstances, where the payment limit applies to producers (persons)."

12. USDA's comment is general and lacks specifics on the important provisions and interrelationships that USDA believes the report has omitted. In followup discussions, USDA officials suggested several changes to the commodity program descriptions in the report, and we have incorporated their suggestions where appropriate.

13. While it would have been interesting to examine the impacts of alternative supply-demand scenarios, we do not consider such effects to be critical to the questions asked by the Senate Budget Committee; furthermore, the Committee did not ask us to examine them.

14. A sliding scale approach for determining program benefit eligibility was analyzed in our June 1987 report on targeting. However, the Senate Budget Committee did not ask us to analyze the sliding scale approach as one of the options in this study.

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