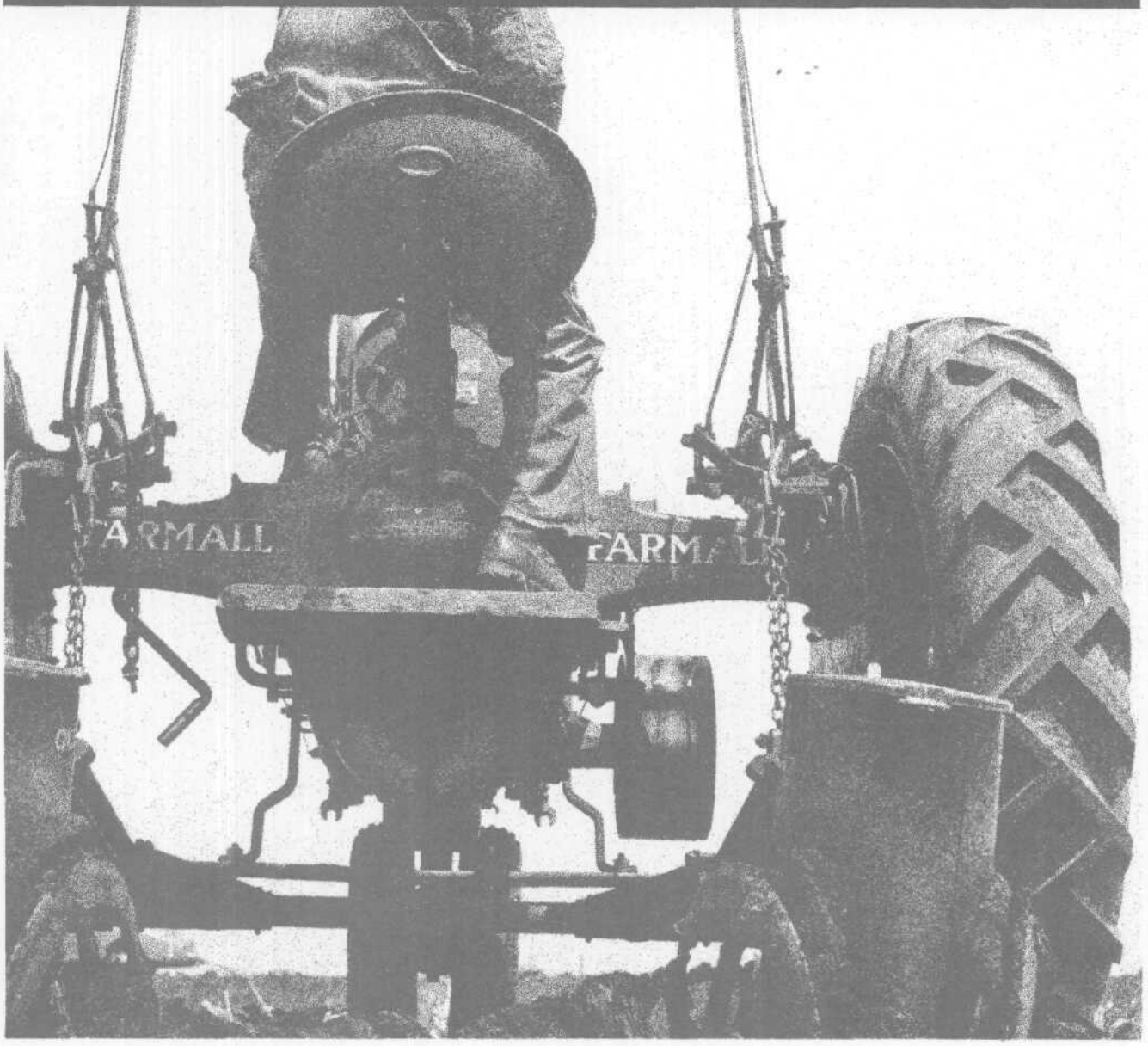
CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

DECEMBER 1989

Farm Program Flexibility: An Analysis of the Triple Base Option



A SPECIAL STUDY

CBO Publication
#505

S U M M A R Y

January 1990

CBO STUDY ON FARM PROGRAM FLEXIBILITY

Increasing farmers' flexibility--allowing them more discretion over their planting decisions--is an issue sure to be discussed during the upcoming debate on the 1990 farm bill. A new Congressional Budget Office study, *Farm Program Flexibility: An Analysis of the Triple Base Option*, discusses program flexibility generally and analyzes one alternative to current policy.

The Triple Base Option would increase flexibility, while lowering federal outlays for farm programs by reducing the number of acres on which each producer participating in a government commodity program is eligible for direct payments. It would also reduce the influence that government payments have on a farmer's planting decisions on a portion of each farm. Some environmental benefits might result from the expected greater use of crop rotations, though the option is not specifically designed to encourage farming practices preferred by environmentalists.

Federal outlay reductions were estimated in the study using two assumptions about how the Secretary of Agriculture would respond to the new law when setting requirements for acreage reduction programs, the principal method used to control supply and support prices under current law. In the first, CBO assumed that the Secretary would leave the acreage reduction program requirements at levels they would have been without the change in the law. Outlay savings are estimated to be $6.0 billion over the 1991-1994 period in this first case. In the second, CBO assumed that the Secretary relaxes the requirements for acreage reduction so that the option effectively does not raise prices of supported crops, which would make them less competitive in world markets. In this case, outlays would fall by $0.9 billion over the same 1991-1994 period. CBO believes that this second case represents a more likely response by the Secretary of Agriculture. Savings would be far lower, but exports, prices, and commodity stocks would be much closer to the levels assumed to guide the Secretary's choices of acreage reduction programs.

Questions regarding the analysis should be directed to Roger Hitchner of CBO's Natural Resources and Commerce Division at (202) 226-2940. The Office of Intergovernmental Relations is CBO's Congressional liaison office and can be reached at 226-2600. For additional copies of the report, please call the CBO publication Office at 226-2809.

CONGRESSIONAL
BUDGET OFFICE
Second and D Streets, S.W.
Washington, D.C. 20515

FARM PROGRAM FLEXIBILITY:
AN ANALYSIS OF THE TRIPLE BASE OPTION

The Congress of the United States
Congressional Budget Office

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

NOTE

Cover photograph taken by John Vachon, 1940, and provided by the Prints and Photographs Collection, Library of Congress.

PREFACE

The debate on the 1990 farm bill will include discussion of increasing the flexibility allowed participants in farm programs to determine what crops they plant. In many cases, the incentives of current programs that support farm prices and incomes cause farmers to plant the same crop year after year even though market considerations might lead them to raise other crops. Current programs also effectively discourage introducing crop rotations that could improve yields and allow less use of purchased inputs. Proposals for increasing planting flexibility are likely to be combined with additional program changes that pursue other objectives. This special study, prepared at the request of the House Committee on Agriculture, examines the consequences of adopting one program option--the triple base option--that would increase farmers' planting flexibility while reducing federal outlays for farm programs and also reducing the effects that farm subsidies have on planting decisions. In accordance with the mandate of the Congressional Budget Office (CBO) to provide objective and impartial analysis, this study contains no recommendations.

The study was coordinated and written by Roger Hitchner of CBO's Natural Resources and Commerce Division, under the supervision of W. David Montgomery and Elliot Schwartz. Quantitative estimates were prepared by Andrew Morton, Eileen Manfredi, and David Hull of CBO's Budget Analysis Division. Sandra Christensen and David Trechter of CBO made valuable contributions to the content of the study. Barry Carr and Carl Ek of the Congressional Research Service, and Sam Evans of the Department of Agriculture, provided helpful comments. The study was edited by Francis Pierce. Angela McCollough prepared the early drafts of the report; Kathryn Quattrone and Toby Whitney prepared the final draft for publication.

Robert D. Reischauer
Director

December 1989

CONTENTS

TABLES

FIGURE

BOXES

SUMMARY

Farm program flexibility is an issue that will be discussed in the upcoming debate on the 1990 farm bill. The issue arises out of restrictions placed on farmers who participate in the major farm commodity price and income support programs. With a few exceptions, farmers must plant specific crops year after year to receive government program benefits and to stay eligible for future benefits. Farmers do this willingly because the benefits of government programs are so attractive. However, this locking-in of planting patterns has some undesirable consequences.

Farmers want more flexibility because the rigid rules of current programs constrain their planting decisions, restricting opportunities for profit and effectively limiting their freedom to use crop rotations that would be good for their land. People who want to change current farm policies so as to raise the efficiency of agriculture recognize the need for flexibility to encourage farmers to adapt to changing market conditions and to allow farm resources to move to their most productive uses. People promoting farming practices that they believe would protect the environment see flexibility as one way to encourage farmers to adopt those practices. Finally, people seeking to reduce federal spending for farm programs hope that offering more flexibility to farmers will cushion the impact of program cuts on their incomes.

Some form of program change that increases planting flexibility will almost certainly be included in the 1990 legislation. But allowing producers more discretion over what they plant would not by itself satisfy all the related interests cited above. Rather, flexibility is likely to be packaged with other program reforms. It may be combined with changes that would remove the links between plantings and payments (known as *decoupling* of payments), in an effort to achieve greater efficiency in the use of farm resources. Or environmental interests may seek to combine flexibility with incentives to promote environmentally beneficial farming practices.

The issue of federal spending for farm programs will probably also figure in the debate on the farm bill, and cost considerations will influ-

ence the final form of the legislation. Within fairly wide ranges, the costs of different combinations of changes will be greater or less than the costs of current policy, depending largely on how rules determining benefit eligibility and payment levels are set. If farm program spending must be cut, these rules can probably be adjusted within any of the policy packages mentioned above so as to achieve the desired objective.

THE TRIPLE BASE OPTION

The triple base option examined in this study is an alternative to current government farm programs for wheat, feed grains (corn, sorghum, barley, and oats), cotton, and rice. (The triple base option is but one of several packages of program changes that increase planting flexibility that will likely be discussed during the farm bill debate. Along with increased flexibility, this option would decouple program benefits on a portion of each farmer's land and would reduce federal spending for farm programs.)

The primary benefits of participating in current programs are the direct government payments made to producers when market prices fall below target prices. The primary cost of participating in these programs is the requirement that farmers leave some land idle to meet the goals of acreage reduction programs. These acreage reduction programs are intended to reduce output and raise market prices.

Producers with a *crop acreage base* for a particular supported crop, such as corn, are eligible to participate in the crop program and receive payments. The crop acreage base is the first of the three measurements of acreage from which the triple base option gets its name. The second is the *permitted base*, which is the crop acreage base less that amount of land required to be left idle in the acreage reduction program. The third base of the triple base option is the *payment base*--defined as 85 percent of the permitted base in the option analyzed in this study.

Under current law, producers receive deficiency payments on the full amount of their permitted acreage if they plant it to the program crop. Under the triple base option they would receive payments on the smaller payment base. On the portion of permitted acres not receiving

deficiency payments (*flexible acres*), producers could plant any crop they chose without affecting their entitlement to future program benefits. The triple base option would thus increase planting flexibility. The cost to producers of this increased flexibility would be the loss of program benefits paid on the flexible acres, no matter what they planted. The option would decouple planting decisions from government payments on these newly flexible acres, potentially leading to a more efficient allocation of farm resources by reducing the influence of government payments on farmer's planting decisions. The form of the option examined here would reduce federal spending for farm programs. The triple base option might also generate environmental benefits by increasing the use of crop rotations, although it would not specifically encourage farming practices preferred by environmentalists.

The triple base option would not benefit all interested groups. Important tradeoffs exist. Like nearly any budget-cutting measure, it would reduce the incomes of most participants in current programs. The planting flexibility that would be granted to participants might cushion the reductions in government payments, though it would do so at the expense of producers of crops not directly receiving government support. Nonprogram crop producers would see their incomes fall as they faced new competition from producers formerly growing government-supported crops. As production of these nonprogram crops increased and their prices fell, consumers would benefit.

The triple base option could therefore lead to some redistribution of income among groups of farmers and between farmers and consumers. It could also lead to a more efficient use of resources because market prices would be less distorted by government subsidies. Further, it would tend to reduce the amount of productive farmland left idle each year in the government programs. These efficiency gains would eventually accrue to all consumers of U.S. farm products. Finally, the triple base option would be a step toward complying with an international agreement--to reduce the market-distorting effects of government farm programs--that might emerge from the current General Agreement on Tariffs and Trade talks.

EFFECTS ON FEDERAL SPENDING OF INTRODUCING A TRIPLE BASE OPTION

Producers would receive deficiency payments on 85 percent of their permitted acres under the triple base option examined in this paper. The option would retain the marketing loan and nonrecourse loan benefits of current law, and no restrictions would be placed on what producers can plant on that portion of their permitted acreage no longer eligible for payments. The study examines the effects this option would have on the outlays of the Commodity Credit Corporation, the agency of the Department of Agriculture that finances the commodity programs. The effects were estimated under two different assumptions as to how the programs would be administered.

Savings from CBO Baseline	Annual Savings (In millions of dollars) 1990	1991	1992	1993	1994	Cumulative Five-Year Savings
Case 1	0	887	2,002	1,622	1,413	5,924
Case 2	0	141	261	197	254	853

In Case 1, it was assumed that the Secretary of Agriculture would not change the requirements for acreage reduction in the major commodity programs from those assumed in CBO's August 1989 baseline, used for comparison. The savings under this assumption are estimated at $6 billion over the 1991-1994 period. Some of the estimated savings would result from making deficiency payments on fewer acres, but the bulk of the savings would be caused by prices of government-supported commodities, particularly of corn and wheat, rising above levels assumed in the baseline. Prices would rise because some producers would shift out of these crops when the deficiency payments ceased. Lower production of a commodity would raise prices and reduce per bushel deficiency payments made on the entire crop.

In Case 2, savings are estimated at only $900 million over the same 1991-1994 period. It was assumed in Case 2 that the Secretary of Agriculture would use his discretion to relax the requirements for acreage reduction just enough so that production and prices of these

crops would remain near levels projected in the baseline. Outlay savings would be far less than in Case 1 because the deficiency payment rates per bushel of wheat and feed grains would be higher (close to baseline levels), because lower acreage reduction requirements would cause the number of payment acres on any farm to be higher, and because participation in the farm programs would rise as the acreage reduction requirements were cut. The two latter factors would increase the number of acres on which payments were made. The estimated increase in participation would be sufficient to cause outlays in the wheat program to rise above baseline levels.

Case 2 appears to be a better indicator of the likely effects on federal outlays than Case 1. A key factor guiding the Secretary of Agriculture's choices of acreage reduction programs in recent years has been expected prices--because of the importance of competing in international markets--and expected ending stocks. Introduction of the triple base option would present no compelling reason to change the paths of prices and ending stocks. If, however, the Administration wanted higher prices, lower exports, and lower stocks (as well as lower CCC outlays), acreage reduction programs could be adjusted with no change in the law.

CONCLUSION

The triple base option would reduce the incomes of most farmers. Producers of nonprogram crops not now receiving direct program benefits would face new competition and lower prices for their output. Producers of program crops would lose deficiency payments; this loss would be mitigated, but not completely offset, by the ability to plant alternative crops on the portion of their permitted base not receiving payments. Some producers might prefer this way of reducing program costs, if costs must be cut, because it would increase their flexibility to pursue profitable opportunities in other crops.

The triple base option has four appealing characteristics. First, it would increase farmers' planting flexibility. Second, it would lead to some reduction in the economic inefficiencies caused by current programs since it would reduce the influence of subsidies on production decisions and, very likely, decrease the amount of productive land left idle in the annual acreage reduction programs. Third, it would reduce

farm program spending. And fourth, it could encourage more use of environmentally beneficial crop rotations, though environmental improvement is not a specific goal of the program.

CHAPTER I

FARM PROGRAM FLEXIBILITY AND THE TRIPLE BASE OPTION

Debate on the 1990 farm bill is beginning at a time when most people interested in farm policy are reasonably satisfied with the current law. The goals of the 1985 Food Security Act, which will be in force through 1990, include increasing U.S. exports of farm commodities, reducing burdensome stock levels, and maintaining farmers' incomes to help them get through a period of severe financial stress. During the past several years export demand for U.S. commodities has been strong, stocks have been reduced to reasonable levels, and incomes of farmers have been relatively high. Farm policies can take some of the credit for these improvements; other causes were droughts in the 1988 and 1989 growing seasons and favorable international economic conditions.

The desire to keep the general structure of the 1985 Food Security Act finds support in the international negotiations now proceeding under the auspices of the General Agreement on Tariffs and Trade (GATT). The United States is promoting a significant, phased reduction in supports for agriculture that distort trade in farm products. The current GATT talks are scheduled to end at the close of 1990. If the United States is successful in the negotiations, reforms in current U.S. farm policy may be required. But even people who favor substantial changes in farm programs feel that these changes should wait until the GATT talks are completed to avoid undermining the position of the U.S. negotiators.

FLEXIBILITY OF FARM PROGRAMS: A TOPIC OF DEBATE

Despite the general satisfaction with present policies and programs, a simple extension of the current law is unlikely. Current federal commodity programs have received much criticism for their inflexibility. This inflexibility arises from the fairly strict rules governing what crops farmers may plant if they are to qualify for current and future

BOX 1
MAJOR FARM PROGRAM TOOLS

The programs for wheat, feed grains, cotton, rice, and soybeans, administered by the Commodity Credit Corporation (CCC), are intended to support the incomes of farmers, stabilize prices of farm commodities, and encourage U.S. agricultural exports. The primary tools used are deficiency payments, market price supports (nonrecourse loans and direct purchases), marketing loans, reductions in planted acreage, and export subsidies.

Deficiency Payments. Deficiency payments are direct federal payments to producers participating in CCC programs for feed grains, wheat, rice, and cotton. Deficiency payments are generally calculated as the difference between a crop's *target price* (specified in the law) and the higher of the market price or the nonrecourse loan rate, and are paid on the basis of the producer's program yield multiplied by the number of acres planted to the crop. *Program yield* is now set for each farm, based on an average of past yields; the number of acres planted to the crop is typically constrained by other components of the program. Since deficiency payments are direct income supplements, they are regarded by some as production subsidies that may encourage farmers to plant more of a crop than they would if they were guided only by the returns from market sales.

CCC programs normally require some land to be taken out of production without payment. Thus, some portion of deficiency payments may be regarded as compensation for agreeing to reduce production.

Market Price Supports. *Nonrecourse loans* are used to support market prices in the feed grains, wheat, and soybean programs. Participating producers may pledge all or part of their crop as collateral for a CCC loan. The gross amount of the loan equals the amount of the crop pledged multiplied by the nonrecourse loan rate, which varies by crop and by year. Nonrecourse loans support the market price at or around the nonrecourse loan rate because producers have the option of forfeiting the loan collateral to the CCC if the market price is not high enough to make it profitable to repay the loan and sell the crop. Producers benefit from nonrecourse loans because they are assured a minimum price for their crop, because they receive credit at subsidized rates, and because these loans allow them to market their crops at the most profitable time.

Marketing Loans. Producers in the cotton, rice, and honey marketing loan programs may repay their nonrecourse loans at per-unit rates based on world market prices (which may be less than the rates at which the loans were issued). Marketing loans allow market prices to be determined by world supply and demand conditions rather than by domestic nonrecourse loan rates, making these commodities more competitive on world markets. The per-unit benefit to farmers--the difference between the nonrecourse loan rate and the loan repayment rate--is similar to a deficiency payment.

Reductions in Planted Acreage. Producers participating in CCC programs typically must reduce their plantings by devoting some portion of their acreage to a conservation use rather than planting it to the program crop. *Acreage Reduction Programs* are required components of crop programs for which no direct compensation is received. *Paid Land Diversion Programs* are voluntary under current law. In paid programs, producers are compensated for removing some additional portion of their land from production. The purpose of these programs is to limit production, support market prices, and cut government costs (deficiency payments and marketing loan benefits are not paid on land idled under these two programs).

The amount of land subject to Acreage Reduction and Paid Land Diversion programs is determined annually. Another program, the Conservation Reserve Program, is a long-term acreage retirement program that pursues resource conservation goals but that also has effects on production similar to those of the annual programs.

Export Subsidies. The *Export Enhancement Program* and federal guarantees of export loans promote exports of U.S. commodities by providing favorable prices or credit terms. The Export Enchancement Program began in 1985 and has mostly been used to encourage exports of wheat. In addition to specific export promotion programs, the marketing loan programs in cotton and rice and the reductions in nonrecourse loan rates, all included in the Food Security Act of 1985, have made U.S. commodities more competitive on world markets.

Other CCC activities also affect market prices and producers' returns. The *Farmer-Owned Grain Reserve Program* pays farmers for storing wheat or feed grains. The farmer-owned reserve was designed to stabilize prices: grain in the reserve becomes freely available to the market only when prices rise above prescribed release prices. Farmers may now exchange generic commodity certificates for grain in the farmer-owned reserve, but incentives to do so, particularly because of the loss of the federal storage payment, are not strong.

The release of CCC-owned grain stocks through sales or exchanges for generic commodity certificates has been an important form of government intervention in the commodity markets. The CCC is not permitted to sell those stocks for cash at current and expected price levels. Instead, it exchanges them for certificates, with an effect very much like cash sales.

federal payments and other program benefits. The commodity programs at issue are those designed to support prices and incomes of producers of wheat, feed grains (corn, barley, sorghum, and oats), cotton, and rice. (See Box 1 on pages 2 and 3 for a general explanation of how federal commodity programs operate.)

The basic cause of the inflexibility of current programs is their eligibility requirements. Farmers must first have a *crop acreage base* to be eligible for program benefits. The crop acreage base for a specific crop assigned to a farm for the current year is the average of acreage planted or considered planted to the crop during the past five growing seasons.[1] With a few exceptions, producers must plant the maximum acreage they are allowed under the terms of the federal commodity programs if they wish to maximize current program benefits and retain their eligibility for next year's benefits (see Box 2). For example, if a producer with a crop acreage base for corn of 100 acres chose to plant the land to soybeans, the crop acreage base for corn for that farm in the following year would be reduced to 80 acres. Since crop acreage bases are valuable assets that farmers do not want to lose, they have an incentive to plant the same crop year after year even if market prices favor an alternative crop. Current rules also inhibit farmers from adopting crop rotations that might be agronomically or environmentally preferable. Thus, easing the rules of current programs to offer farmers more flexibility has fairly broad appeal.

COMBINING INCREASED FLEXIBILITY WITH OTHER GOALS FOR PROGRAM CHANGE

Increasing flexibility is one aim of proposals that also pursue other goals, such as reducing the role of government payments in farmers' production decisions, promoting farming practices that are beneficial for the environment, and reducing federal budgetary expenditures for the farm programs.

1. Land considered planted in a crop includes that left idle during the year to comply with an acreage reduction program (see Box 1).

Reducing the Role of Government Farm Programs in Farmers' Production Decisions

Current U.S. farm programs promote inefficient patterns of production and resource use. Farm resources would be used more efficiently if government program benefits did not affect planting decisions. Severing the links between program benefits and production decisions is commonly referred to as *decoupling*. In essence, decoupling would ensure that farm management decisions were guided by expected market returns rather than by government program payments. Program payments would still be made, but they would not be contingent on planting specific crops. Program changes that increase flexibility are natural companions of changes that would decouple program payments.

Current programs, with their relatively high subsidies for some crops and relatively low (or no) subsidies for others, cause producers to shift toward more subsidized crops and away from less subsidized crops. Subsidies, and differences among subsidies, distort the price signals conveyed to producers through the market. Too little production of some crops, and too much of others, results in lost market opportunities in the one case and a tendency toward commodity surpluses in the other. There are several recent instances of production distortions caused by commodity programs. The target price for oats, for example, is low relative to that of barley, an important alternative crop. Imports of oats have risen in recent years, although excess stocks of barley have existed and the government has been subsidizing exports of barley. If market prices alone determined planting decisions, producers would plant more oats and less barley. Both of these crops are currently subsidized (or potentially subsidized, depending on market prices). The difference between the subsidies causes the distortion.[2]

To take another example, attractive benefits under the Commodity Credit Corporation's (CCC's) corn program tilt the balance in favor of planting corn even though market returns from soybeans, a major

2. Other crops might also be grown on land now devoted to barley or oats if market prices alone determined planting decisions. In the Northern Plains, for example, where barley and oats compete for land, sunflowers or wheat might be attractive alternatives to both barley and oats on the basis of market returns.

BOX 2
PLANTING FLEXIBILITY WITHIN THE CURRENT FEDERAL COMMODITY PROGRAMS

Current programs afford producers some limited flexibility in their planting decisions. In most cases, the decision to take advantage of the flexibility is strongly influenced by expected government program payments.

The 50/92 and 0/92 Programs

The 50/92 program allows producers of cotton and rice to receive 92 percent of their deficiency payments even though they plant as little as 50 percent of the acreage permitted to be planted in the crop program. The 0/92 program allows wheat and feed grain producers to receive 92 percent of their deficiency payments even if they do not plant any of the program crop. Flexibility is quite limited in these programs. They require that land not planted to the program crop be devoted to a conserving use, which is typically an annual or perennial grass cover. These programs decouple planting decisions from payments in that most of the deficiency payment is made even if the program crop is not grown. However, because flexibility is limited, producers cannot really follow market signals in making their planting decisions.

Planting Nonprogram Crops on Crop Acreage Base With No Loss of Base in Future Years

Producers can plant up to 25 percent of their permitted corn, wheat, or other program crop acreage to soybeans, sunflowers, or safflower with no loss of base for the original program crop. However, producers who do this lose deficiency payments that they would have earned had they planted the program crop. Though flexibility is allowed, the government program payments still provide strong incentives to plant the original program crop.

In a related provision, producers can plant up to 20 percent of certain designated crops for harvest (including canola, rapeseed, crambe, milkweed, guayule, meadowfoam, and others) on permitted program crop acres without loss of crop acreage base. As in the program for soybeans, sunflowers, and safflower, producers do not lose their entitlement for future benefits, but have to give up current program payments if they take advantage of this option.

Revisions of the 1990 Wheat Program

The program for the 1990 wheat crop allows producers to plant wheat for harvest on land that would have been used to satisfy the requirements of the acreage reduction program. The acreage reduction program requirement for the 1990 wheat crop is 5 percent of base acreage. To further encourage wheat production, the program allows producers to plant wheat for harvest in excess of their crop acreage base, but not to exceed 105 percent of the base. Producers must give up one acre's worth of deficiency payments (equivalent to the program yield multiplied by the deficiency payment rate) for each acre planted over their original permitted base, which equals 95 percent of their crop acreage base.

Producers who choose to plant wheat in excess of their crop acreage base for wheat can plant it on the crop acreage base for another program crop without losing base in the other program crop. The calculation of producers' wheat base in future years will not include acres planted to wheat in excess of 100 percent of the crop acreage base.

This revision of the 1990 wheat program increases participating farmers' control over their planting decisions, but only in a limited way. Cash crops other than wheat cannot be grown on land that would otherwise be used to satisfy the acreage reduction program. Also, since expected government program payments will play an important role in producers' decisions about using this flexibility, the change can be described as offering them limited flexibility without decoupling.

Temporarily Redesignating Land as Oats Base

Current programs allow producers to temporarily place in their oats crop acreage base portions of their farm acreage base other than the average amount of land normally planted to soybeans. Land eligible to be redesignated includes crop acreage bases for other program crops, and certain land devoted to conserving uses. This program option is designed to encourage plantings of oats for harvest. Most of the redesignated land is drawn from conserving uses rather than from the more valuable cash crops.

alternative, exceed market returns from corn at current prices (see Box 3). The United States is a large exporter of soybeans, and some analysts claim that exports would be greater if the corn program did not discourage soybean planting and production. Further, some feel that the current program encourages major competitors, such as Brazil and Argentina, to increase their production of soybeans.

A reduction in the distorting effects of government subsidies, coupled with more freedom in making planting decisions, would benefit the economy by allowing producers to use their resources more efficiently.

A second, perhaps more important, source of inefficiency in current programs is the requirement that producers leave some land idle if they are to participate in the programs and receive program benefits. The direct economic loss from leaving productive land unplanted is clear, since the idled land could be used to produce more of the program crop or some alternative crop. From another point of view, the same output could be produced with fewer purchased inputs if land currently left idle were brought back into production.

Promoting Farming Practices That Benefit the Environment

Environmental and conservation groups see the incentives and rules of current programs as restricting opportunities for farmers to employ crop rotations that might reduce soil erosion and the use of agricultural chemicals. For example, current programs encourage the continuous planting of corn, a practice that may generate environmental problems. Producers who rotate corn with other crops, particularly soybeans, require less nitrogen fertilizer and appear to use smaller amounts of pesticides. Under current law, producers who have been planting corn year after year would, if they chose to begin a program of rotating corn with other crops, reduce their crop acreage base and their entitlement for future benefits.

A program change offering more flexibility would allow farmers to adopt environmentally preferable practices without losing their right to future program benefits. A program change incorporating decoupling would go further: it would not penalize farmers by reducing program payments in the current year if they opted for a crop rotation that

included crops, such as soybeans, for which no program payments are made.

A combination of flexibility and decoupling would generate environmental benefits to the extent that current farm programs encourage practices that are detrimental to the environment. Some proposed program changes would go beyond eliminating the disincentives to engage in environmentally preferred practices by creating positive incentives to use crop rotations and reduce the use of chemical inputs. Such program changes would increase flexibility but are distinct from those that incorporate decoupling. Under decoupling, the current influence of government payments and programs on planting decisions would be removed. Under programs that promote specific, environmentally sound farming practices, the incentives and payments of current programs would be redirected rather than removed.

Reducing Federal Farm Program Costs

Commodity Credit Corporation outlays for farm price and income support programs have fallen dramatically in recent years, from a peak of $25.8 billion in 1986 to $10.5 billion in 1989. CCC outlays are projected by the Congressional Budget Office to remain in the $10 billion to $12 billion range over the next several years if current policies are extended.[3] The need for reductions in the federal deficit may cause pressures for policy changes that would further reduce farm program spending.

Most of the general approaches to changing farm policy allow scope for adjusting the eligibility for payments and the amounts of payments under farm programs so as to increase or decrease outlays. For example, program changes that would combine increased flexibility with decoupling of payments could include a goal of reducing program outlays by cutting payment rates without undermining the general intent of the policy change. The same is true of proposals combining flexibility with positive incentives to use environmentally beneficial

3. See Appendix C of Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1989) for a discussion of the current policy baseline for CCC outlays.

25-276 - 90 - 2 : QL 3

BOX 3
AN EXAMPLE OF FARMERS' PLANTING AND PROGRAM PARTICIPATION DECISIONS

Producers must decide each year how to use the land they have available for planting to annual crops. Producers who have crop acreage bases (calculated on acreage planted to the crop over the past five years) can choose to participate in the government program. To qualify for maximum program payments and other benefits, participants must comply with the acreage reduction requirement and must plant the program crop on the permitted portion of their base (see Figure 1). Alternatively, they could plant the program crop but not participate in the program. In that case, they would not receive deficiency payments or other program benefits, but would be free from the acreage reduction requirement. Producers who do not participate in a CCC commodity program but who plant the program crop on their crop acreage base retain full entitlement to enter the program in the future.

A second alternative available to producers is to plant the land to some crop other than the program crop. Producers who choose not to plant the program crop lose a portion of their entitlements to future benefits, since crop acreage bases are calculated as the moving average of past area planted and considered planted. Land used to comply with an acreage reduction program is considered planted in calculating the base.

The table below shows the calculations that a producer might make about what to plant. Planting decisions are affected by many factors. While expected returns are of key importance, farmers may choose to forgo some current income to reduce risk or to maintain their eligibility for future program payments. The producer in this example is assumed to have 100 acres of corn program base, and has to decide whether to participate in the corn program (column 1), plant corn but not participate in the program (column 2), or plant soybeans (column 3). In this example, the acreage reduction requirement is assumed to be 10 percent of base acres. Production costs, yields, and market prices are those shown in the table.

The producer would maximize returns by participating in the government corn program and planting 90 acres in corn. The net market return from this choice ($11,000) is less than the other two alternatives, but the expected government payment more than makes up the differences. Were there no government program, the comparison would be between columns 2 and 3, and the most profitable option would be to plant soybeans. Market signals alone indicate that soybeans should be planted. It is the influence of the government program that causes corn to be planted.

Changes in expected prices could alter the decision. For example, if the expected soybean price remained at $6.00 per bushel but the corn price rose above $2.58 per bushel, the most profitable alternative would be to plant corn but not participate in the government program. At this corn price, the

producer might still choose to participate in the program when prices are expected to be at or slightly above this break-even point, because of the uncertainty of price forecasts. The government payments would cushion the reduction of receipts if prices turned out to be lower than expected. If there were no government program (comparing columns 2 and 3 only), a corn price of $2.38 per bushel or above would make planting corn more profitable than planting soybeans with an expected price of $6.00 per bushel.

A higher expected soybean price, holding the corn price at $2.00 per bushel, would make planting soybeans become more attractive than planting corn. In this example, a soybean price of $6.43 or higher causes the expected net return from planting soybeans to exceed that of corn, even when the government payments from the corn program are included. However, the producer may still choose to plant corn as a program participant rather than to plant soybeans, even when the soybean price is somewhat above this break-even level, because of the uncertainty of the price forecasts. Moreover, the producer's corn crop acreage base would be reduced if soybeans were planted. The producer might plant corn, even with some sacrifice of current income, just to maintain a crop acreage base and with it the rights to future program benefits.

	(1) Plant Corn As Participant	(2) Plant Corn As Nonparticipant	(3) Plant Soybeans
Acreage Reduction Requirement (Percent of base acreage)	10	0	0
Acres in Principal Crop	90	100	100
Acres in Cover Crop	10	0	0
Variable Production Costs per Acre			
Principal crop	$125	$125	$55
Cover crop	$25	n.a.	n.a.
Total variable costs	$11,500	$12,500	$5,500
Yield per Acre	125	125	38
Total Production (In bushels)	11,250	12,500	3,800
Price per Bushel	$2.00	$2.00	$6.00
Gross Market Returns	$22,500	$25,000	$22,800
Market Returns Less Total Variable Costs	$11,000	$12,500	$17,300
Deficiency Payments			
Rate per bushel	$0.80		
Program yield	110		
Qualifying bushels	9,900		
Total deficiency payments	$7,920		
Returns Over Variable Costs (Including government payments)	$18,920	$12,500	$17,300

NOTE: n.a. = not applicable.

farming practices, though payments would have to be large enough to encourage the use of the practices if they would cause any loss in market returns.

Combining increased flexibility with measures to reduce program spending appeals to some people who are interested in cutting federal costs. Increasing flexibility would reduce the effects of program cuts on the incomes of some farmers. If program benefits are to be reduced, easing the restrictions imposed by the programs on producers might make the cuts more acceptable.

Not all current participants would benefit from increased flexibility. Those more likely to benefit include farmers who can put their land to relatively profitable alternative uses. The availability of good alternative uses will vary both regionally and across farms. Wheat farmers have shown little support for increased flexibility, on the ground that profitable alternatives to wheat production are not available to them. Diversified farms whose managers have experience, equipment, and marketing outlets for alternative crops would be in the best position to take advantage of increased flexibility.

The 1990 farm bill in its final form is expected to have some elements of increased producer flexibility. It remains to be seen to what extent this increased flexibility will be combined with efforts to decouple program payments, to encourage environmentally preferred farming practices, or to cut program spending.

The triple base option analyzed in this study embodies one combination of these goals for program change. The option would increase producer flexibility, decouple a portion of farmers' planting decisions, and reduce program spending. It would allow increased use of crop rotation, though the form of the option analyzed does not include measures to encourage specific farming practices. The Congress will probably consider proposals that embody other combinations of these goals for program change, differing in their emphases on flexibility, decoupling, environmental benefits, and budget costs.

THE TRIPLE BASE OPTION

The triple base option examined in this study is an alternative to current government farm programs for wheat, feed grains (corn, sorghum, barley, and oats), cotton, and rice. The option differs from current policy in that a portion of each participating producer's farm that can now earn government payments (deficiency payments) would no longer be eligible for them. Instead, the producer could plant any crop on that portion of the farm without losing entitlement for remaining future program benefits.

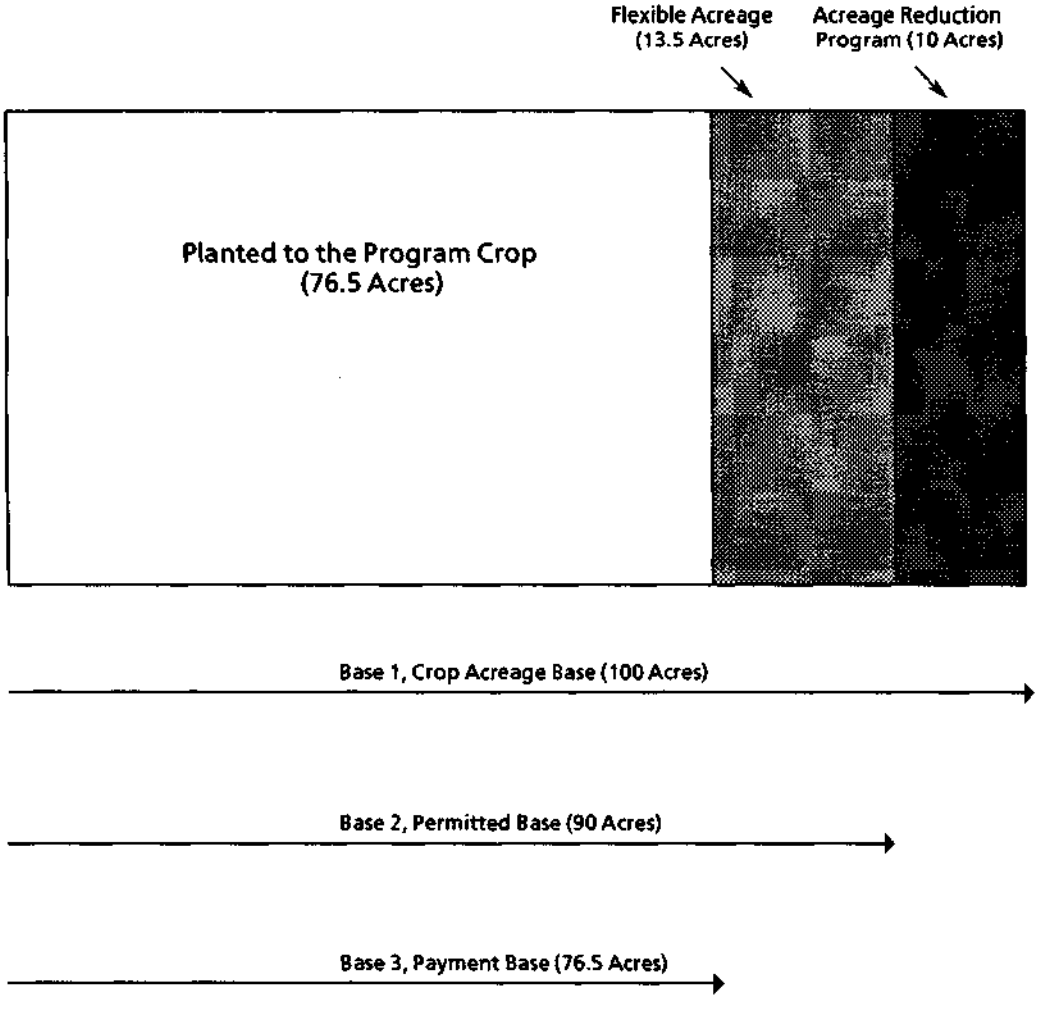
The first of the three bases from which the triple base program takes its name is the producer's *crop acreage base*, discussed in the previous section. The second is the *permitted base*--the maximum allowable acreage that can be planted to the program crop by a participating producer (if an acreage reduction program is in effect). It equals the crop acreage base less the amount of land required to be idled. For example, if a farmer has 100 acres of corn base and a 10 percent acreage reduction requirement, the permitted base is 90 acres (see Figure 1).

The third base is the producer's *payment base*. Under current law, the payment base is the same as the permitted base if the producer plants it all to the program crop. Under the triple base option described here, the producer's payment base would be some fixed proportion of the permitted base, say 85 percent. In the example of a 100-acre corn base, with a 10 percent acreage reduction program in effect, the payment base would be 76.5 acres--85 percent of the 90-acre permitted base.[4]

The portion of the producer's permitted base that would receive no program payments under the triple base option--13.5 acres in the corn example--could be planted to the original program crop, to a different program crop, to a nonprogram crop, or to nothing at all. This land may be designated *flexible acreage*. Current law restricts the use of

4. Others writers have described the three bases differently. Some describe the bases as: Base 1--Crop program acreage base; Base 2--Permitted acreage; and Base 3--Unpaid permitted acreage. Another alternative: 1--Acreage reduction program land; 2--Permitted and paid; and 3--Permitted but unpaid. There is no fundamental difference among these definitions.

Figure 1.
The Three Bases of the Triple Base Option--An Example



SOURCE: Congressional Budget Office.

NOTE: The crop acreage base is the producer's average acreage planted and considered planted to the program crop during the previous five years. The permitted base is the maximum that can be planted under an acreage reduction program. Under the triple base option, the producer's payment base would be some fixed proportion of the permitted base--in this example, 85 percent.

such land. With only a few exceptions, participating producers cannot plant this portion of their land to anything other than the original program crop or a cover crop and still receive program benefits. While the triple base option would allow its use for other purposes, the increased flexibility would be gained at a cost, since deficiency payments would no longer be made on this acreage.

The triple base option would affect producers' planting decisions, and those in turn could affect crop production, commodity supply, land use, and prices. These effects, and their consequences for government program costs, are analyzed in Chapter II.

Only one design of the triple base option--but two types of responses by the Administration to the new program--are examined in this study. The key feature of the option is that it allows producers--and in some ways forces them--to respond more to the market than to government program benefits when making production decisions. Specific program rules and benefits could be adjusted to vary the option's effect on federal spending, to redistribute program benefits toward selected groups of farmers, or to pursue other goals of farm policy.

How the Triple Base Option Would Increase Producers' Flexibility

Flexibility would be enhanced under the triple base option because producers could plant crops other than the program crop on the flexible acreage without losing their entitlement to future program benefits. Most versions of this option provide flexibility only on those acres not currently receiving program payments.

At present, farmers have the legal right to nearly complete flexibility in that participation in commodity programs is voluntary. In practice, however, the expectation of significantly higher net returns, along with reduced income risk, make participation very attractive and, in many cases, economically necessary. Under the triple base option, participation would continue to be voluntary. It would also continue to be attractive. The difference would be that government programs would directly affect planting decisions on a smaller portion of the farm.

The flexibility offered under the triple base program would come at a relatively high cost to producers: the loss of deficiency payments on the land granted flexibility. As a permanent arrangement, it would be very similar to reducing each producer's crop acreage base. While producers' crop acreage bases would be protected--they would not lose the right to their bases even if they planted crops other than the program crop on their flexible acres--no benefits would be paid on these acres. Thus, the protection would be of little value. Reducing the crop acreage base would have much the same effect, but flexibility sounds more appealing.

How the Triple Base Option Would Decouple Program Benefits

In the triple base option, the planting decision on the flexible acreage is decoupled from program benefits in a most direct sense--no program payments are made on this acreage no matter what is planted on it. The government program could still affect the planting decision, however, because the program crop would be planted on a large portion of the farm (the program crop must be planted on the payment base to retain base credit for calculating the crop acreage base for later years). Producers might be more inclined to switch crops--especially to those requiring new investments in equipment--if the entire farm, not just the flexible acres, could be switched with no loss of program benefits.

Placing limitations on the allowable alternative crops would also affect the planting decision by constraining the producers' options. The option examined in this report assumes no limitations.

The current 50/92 and 0/92 programs are forms of decoupling (see Glossary). Under these programs, producers can choose not to plant the program crop and still receive most of the deficiency payments that would be made if the crop had been planted. There is little flexibility under these programs, however, because alternative uses of the land are severely limited.

How the Triple Base Option Would Reduce Farm Program Costs

Under the triple base option, deficiency payments would be made on less production than under current law. In the corn example in Box 3,

payments are made on 90 acres of production under current law but on only 76.5 acres under the option. If nothing else changed, program costs would fall with the reduction in acreage receiving payments--15 percent in this example.

Of course, other things would change, causing savings to be higher or lower than the initial change in payment acres would indicate. Factors that might change include the acreage reduction program level, market prices, and the rate of program participation.[5] These factors could change either because incentives to producers might change or because of modifications in the government programs. For example, if acreage was shifted away from production of program crops, market prices of program crops would rise, deficiency payment rates would fall, and federal costs would drop more than in proportion to the cut in payment acreage. On the other hand, production of the program crop might remain unchanged, or even grow, depending on how program administrators and farmers responded to the new option.

PROGRAM ADMINISTRATORS AND FARMERS UNDER THE TRIPLE BASE OPTION

The effects of the triple base option on production and prices of commodities, farmers' incomes, and government program costs would depend critically on how program administrators and farmers reacted to the option.

Actions of Program Administrators

The government has a considerable degree of discretion over certain important aspects of farm programs, a key area being acreage reduction. Acreage reduction discourages production by requiring producers who wish to benefit from price support programs to withdraw part of their crop acreage base from production. Less production results in higher prices, lower exports, lower stocks, and lower costs of government programs.

5. Some sources of outlay savings would depend on program design. For example, savings would increase if eligibility for marketing loan benefits was also reduced.

Factors currently governing acreage reduction decisions include levels of commodity stocks and prices. Since expanding exports is now a key goal of farm policy, crop prices are important because lower prices make U.S. commodities more competitive internationally. But lower prices also reduce farmers' incomes and raise the costs of government programs. These are indirect effects. Acreage reduction also directly affects farmers' incomes and expenses by causing productive land to be left unused. Making decisions about acreage reduction involves balancing the interests of the various groups that are affected.

Changes in demand and supply projections can govern administrators' decisions about acreage reduction. For example, a forecast of higher export demand might cause them to relax acreage requirements. Otherwise, if acreage reduction requirements remained the same, an increase in export demand would cause prices to be higher, stocks lower, and government costs lower than administrators would consider appropriate.

In fact, requirements for acreage reduction for most crops are now far smaller than several years ago. For example, between the 1988 and 1990 wheat crops, the acreage reduction requirement in effect will have dropped from 27.5 percent to just 5 percent of base acreage. The requirement for acreage reduction in the corn program is expected to fall from 20 percent of base acreage in 1988 to 10 percent in 1990. In addition, an optional paid land diversion program was in effect for corn in 1988, under which producers were paid to keep more land idle than was required under the acreage reduction program. The lowering of acreage reduction requirements is the result mainly of a much tighter supply situation caused by the retirement of land in the conservation reserve program and by recent droughts.

The triple base option would lead to lower production of program crops, other things holding constant. If, as CBO assumes, the government were to maintain the same stock and price goals, acreage reduction requirements would be further relaxed with the introduction of the triple base option.

Other analyses of this option have assumed that acreage reduction programs would remain unchanged from baseline levels. Incorporating this assumption tends to raise market prices of supported crops above baseline levels and generates substantial budgetary savings. In

the analysis in Chapter II, estimates of the effects of the triple base option are shown in two ways: first, with no changes in the acreage reduction requirements from baseline levels; and, second, with acreage reduction requirements reduced after the introduction of the triple base option. In the latter case, these requirements are reduced from baseline levels by an amount sufficient to keep the prices of program crops about where they would have been before land was shifted away from program crops toward nonprogram crops. This second set of estimates seems to show a more likely outcome of the introduction of the triple base option.

Actions of Producers

A portion of farmers' planting decisions would be less influenced by government programs under the triple base option. On producers' flexible acreage--the unpaid part of permitted acreage--producers could plant the program crop, an alternative cash crop, a cover crop, or, perhaps, nothing at all. Their decisions would be affected by experience, marketing opportunities for alternative crops, expected prices, availability of equipment or people to do custom work, climate, production costs, and other factors. Producers who are already diversified could have an initial advantage over more specialized producers.

Producers who are relatively specialized might be inclined to plant the program crop on their unpaid acres because they are familiar with its production and have the necessary equipment and marketing outlets--factors that tend to lower the costs of producing the program crop. Still, even with lower costs, producers would be unlikely to keep planting the program crop on the unpaid acreage unless market prices made it profitable.

Participation in federal commodity programs could increase or decrease under the triple base option, depending on whether expected returns from participating exceeded expected returns from not participating. CCC programs are voluntary and would remain so under the triple base option. The option would be less attractive to producers than current law because they would receive deficiency payments on fewer acres. As against this, participating in the program would probably continue to be more attractive than not participating.

The main benefits of participating would be the government payments and the reduction of income risk. The deficiency payment rate is inversely related to market prices, so total returns to participants are somewhat more certain than total returns to nonparticipants. The costs would mostly be the income lost from having to idle a portion of the farm in an acreage reduction program. Whether the overall rate of participation under the triple base option would be higher or lower than under current law might depend largely on the government's acreage reduction program decisions. If acreage reduction requirements were lowered, as might be appropriate for most crops, then the rate of participation could be equal to or higher than under current law, even though total benefits would be lower than with current programs.

DISADVANTAGES OF THE TRIPLE BASE OPTION

The major disadvantage of this option compared with current policy is that it would reduce the incomes of farmers. But most farm program changes designed to reduce program costs while keeping prices of U.S. commodities competitive in world markets also reduce farm income. Incomes of producers of program crops would fall because the amount of production on which they receive government payments would drop. Incomes of producers of nonprogram crops, such as soybeans, would also fall because they would face new competition from the other producers, and market prices of their products would drop.[6]

Producers of nonprogram crops whose incomes would be reduced would be likely to oppose the triple base option or to urge limits on the alternative crops that could be grown on the unpaid permitted acreage. When the 50/92 program was introduced in the 1985 Food Security Act, producers of nonprogram crops opposed unrestricted plantings on 50/92 acres. They argued that they would face unfair competition from growers who were receiving government payments on land that could now be used to produce their nonprogram crops. That argument would not strictly apply to the triple base option, however, because no

6. Nonprogram crops are all crops other than those that entitle producers to direct deficiency payments. Prices of soybeans, an important nonprogram crop, are supported through a nonrecourse loan program of the Commodity Credit Corporation but are considered a nonprogram crop because soybean producers' incomes are not supported through direct government payments. Major program crops include wheat, corn, sorghum, barley, oats, cotton, and rice.

payments would be earned on the flexible acres newly available for planting nonprogram crops.

The triple base program could be somewhat more complex to administer than current law, depending on how the program was designed. If there were restrictions on plantings on the unpaid permitted acres, verifying compliance would become more difficult. Without restrictions, administering the triple base option would be like administering the present law.

Some people believe that target prices should continue to decline, and with them the government's involvement in production decisions, until farm subsidies are eliminated. These people might view the triple base option as a device to derail the trend of recent years toward lower levels of government support. There is nothing in the triple base approach, however, that would prevent this trend from continuing--either through further reductions in target prices or through reductions in the percentage of the permitted base on which payments would be made.

Finally, while the triple base option might lessen the economic problems and inefficiencies created by farm programs, it would not eliminate them. For example, the triple base option would not prevent the use of acreage reduction programs to reduce government costs by cutting production at the expense of economic efficiency. Higher acreage reduction programs help to support market prices, and would have the same effect under the triple base option. This use of acreage reduction programs may be an effective way of reducing federal outlays, at least in the near term, but causes significant losses to the economy as a whole. Limiting production in order to prop up prices in internationally traded commodities has been seen by some as a self-defeating policy for the United States, on the grounds that it creates or expands markets for competitors. The United States is the only country that relies heavily on supply controls.

CHAPTER II

ANALYSIS OF A TRIPLE BASE PROGRAM

The Congressional Budget Office estimates that the triple base option, if begun in crop year 1991, could reduce outlays of the Commodity Credit Corporation (CCC) by an estimated $6.0 billion over the 1991-1994 period if no changes were made in acreage reduction programs (see Case 1 in Table 1).[1] Some changes in the programs could be expected, however, if the Secretary of Agriculture anticipated that land would be shifted from program crops to other crops. Outlay savings would be reduced significantly if requirements for acreage reduction were relaxed. Savings are estimated at $0.9 billion over the 1991-1994 period if acreage reduction programs for feed grains and wheat were reduced from baseline levels by enough to keep market prices near levels assumed in the baseline (see Case 2 of Table 1).

The basic elements of the program assumed for these estimates are as follows:

- Producers would receive deficiency payments on 85 percent of their permitted acres;
- No restrictions would be placed on what producers can plant on the 15 percent of their permitted acres ineligible for deficiency payments; and
- Benefits from marketing loans and nonrecourse loans would be the same as under current law.

The responses of producers would vary. Some producers would plant a different program crop, plant a nonprogram crop, or put to another use that portion of their permitted acres no longer eligible for

1. CBO's August 1989 baseline is used for comparison. See Congressional Budget Office, *The Economic and Budget Outlook: An Update* (August 1989), Appendix C, for a discussion of the assumptions underlying this baseline.

TABLE 1. ESTIMATED EFFECTS OF THE TRIPLE BASE OPTION ON COMMODITY CREDIT CORPORATION OUTLAYS (By fiscal year, in millions of dollars)

Commodity	1990[a]	1991	1992	1993	1994
Case 1--Changes From the Baseline When Acreage Reduction Programs Are Kept at Baseline Levels					
Wheat	--	-163	-330	-297	-284
Corn	--	-596	-1,316	-1,030	-816
Sorghum	--	-51	-114	-87	-72
Barley	--	-6	-16	-14	-7
Oats	--	b	b	b	b
Rice	--	-33	-122	-117	-132
Upland Cotton	--	-38	-117	-95	-102
Soybeans	--	0	13	18	0
Total	--	-887	-2,002	-1,622	-1,413
Case 2--Changes From the Baseline When Acreage Reduction Programs for Feed Grains and Wheat Are Adjusted to Maintain Crop Prices Near Baseline Levels					
Wheat	--	54	160	172	166
Corn	--	-119	-214	-172	-178
Sorghum	--	-9	-21	-17	-15
Barley	--	4	10	9	7
Oats	--	b	b	b	b
Rice	--	-33	-122	-117	-132
Upland Cotton	--	-38	-117	-95	-102
Soybeans	--	0	43	24	0
Total	--	-141	-261	-197	-254
CBO August 1989 Baseline					
Wheat	238	1,290	1,807	1,855	1,771
Corn	4,680	6,187	5,313	4,569	4,229
Sorghum	609	635	511	345	198
Barley	143	155	95	77	37
Oats	2	2	1	1	1
Rice	407	605	748	788	767
Upland Cotton	274	906	857	876	755
Soybeans	175	84	63	40	4
Other Commodities	610	541	493	537	388
Other Outlays	2,699	1,403	1,278	1,250	1,222
Total	9,837	11,808	11,166	10,338	9,372

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

b. Less than $500,000.

deficiency payments. Many would continue to grow the same program crop on the newly flexible acres. In its analysis of likely alternatives, CBO concluded that most of the newly flexible acres would remain in the program crop. The aggregate estimated shifts out of program crop production on flexible acres range from 3.1 million acres for corn (about one-third of the total that could be shifted) to a negligible amount for rice. Net shifts in acres planted differ from these gross shifts mainly because of switching among program crops. Also, changes in relative commodity prices and changes in farm program participation cause additional shifts among crops.

DECISIONS OF PROGRAM ADMINISTRATORS

The potential for reducing federal farm program spending is a key reason for interest in the triple base option. The disparity between the two estimates shown in Table 1 makes clear how critical the decisions of program administrators can be in determining the effects of this program option on spending.

Case 1 generates much larger outlay savings than Case 2 because the movement of land out of program crop production in response to the triple base option reduces production and raises prices. Total deficiency payments are reduced both because payments are being made on only 85 percent of permitted acres and because increases in market prices cause deficiency payment rates to be lower. Savings occur for all crops with deficiency payments in Case 1. Outlays for the soybean program increase, however, as higher plantings of soybeans cause prices to fall, and more farmers make use of nonrecourse loans.

In Case 2, the acreage reduction programs for feed grains and wheat were assumed to be reduced by an amount sufficient to keep prices close to baseline levels. This assumption was not made for cotton and rice because the net changes of acres planted to these crops were quite small. This alternative assumption causes savings to fall relative to Case 1 for three reasons. First, and most important, market prices for feed grains and wheat are lower in Case 2 than in Case 1, causing deficiency payment rates to be higher. Second, reducing the acreage reduction requirement causes an increase in the number of acres receiving payments on each farm. Payments in this option are made on 85 percent of permitted acres, and reducing the requirement

for acreage reduction increases the number of permitted acres. Third, payment acres rise further because of increases in program participation. Acreage reduction requirements discourage program participation because a portion of each producer's land must be left idle. Reducing the acreage reduction requirement makes participation more attractive. Participation in the wheat and feed grains programs is quite high, and could increase further. Increases in participation raise government outlays because deficiency payments must be made on a portion of the crop that would otherwise have received no payments. This effect of increased participation on outlays holds under current law as well as under the triple base option.

Case 2 is a better indicator than Case 1 of the effects of the triple base option on federal spending, primarily because acreage reduction requirements would very likely be relaxed if the Administration believed that the triple base option would significantly reduce plantings of program crops. Leaving acreage reduction programs at baseline levels would lead to less production, higher prices, lower exports, and lower stocks than under the baseline. If these outcomes were preferred to those arising under current policy, they could have been achieved under current law by raising acreage reduction programs, and spending would have been reduced as well.

RESPONSES OF FARMERS

The triple base option would add a new, but not particularly complicated, dimension to farmers' management decisions--what to plant on that portion of their permitted base no longer eligible for program payments. Many farms have more arable land than crop acreage base, and the decision about what to do with the newly flexible acres would be very similar to the decision about what to do with land not now covered by a program base. The decision would be different in two ways. First, the original program crop could be planted on the flexible acres, but producers cannot currently plant the program crop on land in excess of the permitted base.[2] Second, production of the program crop on the flexible acres would still be eligible for marketing loan and

2. A September 1989 amendment to the wheat program for the 1990 crop year allows producers to plant in excess of their crop acreage base in exchange for a reduction in the number of acres covered by deficiency payments.

nonrecourse loan benefits. Continuing to plant the program crop on the flexible acres is therefore somewhat more attractive than if these benefits were to be restricted in the same way as deficiency payments.

Estimates of net returns per acre for major crops by region of the country were examined to determine possible shifts in plantings resulting from the triple base option. Table 2 shows the estimated net changes in plantings of major crops stemming from the triple base option under the two cases. In Case 1, there is a net reduction in land (relative to the CBO baseline) devoted to the program crops, and an addition to soybeans. In Case 2, the net change in land devoted to program crops is smaller because acreage reduction program requirements were relaxed. Land is assumed to shift out of program crop production into soybeans and other nonprogram crops. This shift, however, is largely accommodated by reducing the amount of land that has to be idled to satisfy the acreage reduction requirements.

The changes shown in Table 2 for both Case 1 and Case 2 are relatively small. These are net effects that do not reveal the somewhat larger expected movements in and out of program crop production. Tables 3 and 4 show the assumed changes underlying the net acreage shifts shown in Table 2 for crop year 1991. In Table 3, for instance, 8.8 million acres of permitted wheat base would no longer be eligible for deficiency payments and would be part of the flexible pool of acres that could be planted to other crops without loss of crop base. Of this 8.8 million acres, it is assumed that 1.32 million are actually planted to some other crop (or grazed or left fallow). The bottom portion of Table 3 shows in detail the assumptions about how this land is used. Of the 1.32 million acres shifted out of wheat, 0.5 million acres are planted to corn, 0.1 million acres to sorghum, 0.3 million to barley, and 0.12 to soybeans, while 0.2 million are planted to other crops or put to some other use.

The gross shift out of wheat of 1.32 million acres is partly offset by a shift into wheat from other program crops of 0.35 million acres. The bottom portion of Table 3 shows that it is assumed that 0.2 million of this comes from the corn base, 0.1 million from the sorghum base, and 0.05 million from the barley base. There are further adjustments. An increase in the expected price of wheat in Case 1 in the 1991 crop year induces additional plantings of 0.17 million acres. The net shift of -0.8

million acres is shown in the final row of the top portion of Table 3 as well as in Table 2.

Assumptions for other crops are shown similarly. Among the program crops, the gross shift out of corn production is the largest--both

TABLE 2. ESTIMATED CHANGES IN ACREAGE PLANTED TO PROGRAM CROPS AND SOYBEANS RESULTING FROM THE TRIPLE BASE OPTION (By crop year, in millions of acres)

Commodity	1991	1992	1993	1994
Case 1--Changes From the Baseline When Acreage Reduction Programs Are Kept at Baseline Levels				
Wheat	-0.8	-0.8	-0.9	-0.9
Corn	-0.6	-0.7	-0.4	-0.4
Sorghum	-0.2	-0.2	-0.2	-0.2
Barley	0.2	0.2	0.2	0.2
Oats	0.2	0.2	0.2	0.2
Cotton	0.1	0.1	0.1	0.1
Rice	a	a	a	a
Soybeans	0.9	0.9	0.6	0.6
Case 2--Changes From the Baseline When Acreage Reduction Programs for Feed Grains and Wheat Are Adjusted to Maintain Crop Prices Near Baseline Levels				
Wheat	a	a	a	a
Corn	-0.3	-0.2	-0.2	-0.1
Sorghum	0.6	0.6	0.5	0.4
Barley	0.4	0.4	0.4	0.3
Oats	0.2	0.2	0.2	0.2
Cotton	0.1	0.1	0.1	0.1
Rice	a	a	a	a
Soybeans	1.9	1.7	1.6	1.3
CBO August 1989 Baseline				
Wheat	77.5	77.3	77.3	77.5
Corn	75.1	75.5	75.3	75.0
Sorghum	11.8	11.3	11.0	11.0
Barley	10.0	9.2	8.5	8.5
Oats	12.4	12.4	12.4	12.4
Cotton	10.3	10.3	10.2	10.2
Rice	3.1	3.2	3.2	3.3
Soybeans	59.1	59.1	59.7	60.3

SOURCE: Congressional Budget Office.

a. Less than 50,000 acres.

TABLE 3. ESTIMATED SHIFTS IN ACREAGE AMONG CROPS RESULTING FROM THE TRIPLE BASE OPTION CASE 1: ACREAGE REDUCTION PROGRAMS KEPT AT BASELINE LEVELS (Crop year 1991, in millions of acres)

	Wheat	Corn	Sorghum	Barley	Oats	Cotton	Rice	Soybeans
Flexible Acreage	8.80	8.04	1.53	0.88	0.24	1.38	0.49	n.a.
Gross Shift Out	-1.32	-2.01	-0.15	-0.14	0.00	-0.07	-0.02	n.a.
Shift in From Other Program Crops	0.35	0.50	0.10	0.30	0.20	0.20	0.00	1.55
Net Triple Base Shift	-0.97	-1.51	-0.05	0.16	0.20	0.13	-0.02	1.55
Net Acreage Adjustment From Market Price Changes	0.17	0.91	-0.18	0.00	0.00	-0.05	-0.01	-0.65
Net Change in Planted Acreage	-0.80	-0.60	-0.23	0.16	0.20	0.08	-0.03	0.90

Assumed Shifts Among Crops

	Shifted Out Of:							
	Wheat	Corn	Sorghum	Barley	Oats	Cotton	Rice	Total Shift In
Shifted Into:								
Wheat		0.20	0.10	0.05				0.35
Corn	0.50							0.50
Sorghum	0.10							0.10
Barley	0.30							0.30
Oats	0.10	0.05		0.05				0.20
Cotton		0.20						0.20
Rice								0.00
Soybeans	0.12	1.41					0.02	1.55
Other	0.20	0.15	0.05	0.04		0.07		0.71
Total Shift Out	1.32	2.01	0.15	0.14		0.07	0.02	

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

NOTES: n.a. = not applicable.

The shaded portion of the table analyzes the shifts in acreage assumed to result from market price changes under Case 1. For example, of the 1.32 million acres shifted out of wheat, 0.5 million acres would be shifted to corn, 0.1 million acres to sorghum, and so on. The gross shift out would be offset by a shift into wheat from other crops of 0.35 million acres. The top row shows that 0.2 million acres would be shifted into wheat from corn, 0.1 million from sorghum, and so on.

TABLE 4. ESTIMATED SHIFTS IN ACREAGE AMONG CROPS RESULTING FROM THE TRIPLE BASE OPTION CASE 2: ACREAGE REDUCTION PROGRAMS CHANGED TO MAINTAIN CROP PRICES NEAR BASELINE LEVELS
(Crop year 1991, in millions of acres)

	Wheat	Corn	Sorghum	Barley	Oats	Cotton	Rice	Soybeans
Flexible Acreage	11.50	9.50	1.75	1.06	0.24	1.38	0.49	n.a.
Gross Shift Out	-1.83	-3.13	-0.23	-0.20	0.00	-0.07	-0.02	n.a.
Shift in From Other Program Crops	0.35	0.40	0.10	0.30	0.20	0.20	0.00	2.33
Net Triple Base Shift	-1.48	-2.73	-0.13	0.10	0.20	0.13	-0.02	2.33
Net Acreage Adjustment From ARP or Market Price Changes	1.48	2.43	0.76	0.26	0.00	-0.05	-0.01	-0.43
Net Change in Planted Acreage	0.00	-0.30	0.63	0.36	0.20	0.08	-0.03	1.90

Assumed Shifts Among Crops

	Shifted Out Of: Wheat	Corn	Sorghum	Barley	Oats	Cotton	Rice	Total Shift In
Shifted Into:								
Wheat		0.20	0.10	0.05				0.35
Corn	0.40							0.40
Sorghum	0.10							0.10
Barley	0.30							0.30
Oats	0.10	0.05		0.05				0.20
Cotton		0.20						0.20
Rice								0.00
Soybeans	0.12	2.19					0.02	2.33
Other	0.81	0.49	0.13	0.10		0.07		1.80
Total Shift Out	1.83	3.13	0.23	0.20		0.07	0.02	

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

NOTES: n.a. = not applicable.

The shaded portion of the table analyzes the shifts in acreage assumed to result from the acreage reduction program (ARP) or market price changes under Case 2. For example, of the 1.83 million acres shifted out of wheat, 0.4 million acres would be shifted to corn, 0.1 million acres to sorghum, and so on. The gross shift out would be offset by a shift into wheat from other crops of 0.35 million acres. The top row shows that 0.2 million acres would be shifted into wheat from corn, 0.1 million from sorghum, and so on.

in total number of acres and as a percentage of flexible acres. Areas where corn is raised generally have the most attractive alternatives. In Case 1, of the 2.01 million acres shifted out, 1.41 million are assumed to be planted to soybeans. Nearly 2.2 million acres are assumed to be shifted from corn to soybeans in Case 2. The flexible acreage for wheat and feed grains is larger in Case 2 than in Case 1 because of lower acreage reduction requirements and greater program participation, both of which help increase flexible acreage.

EFFECTS ON FARM NET RETURNS

Table 5 shows estimates of changes in net returns over variable costs for major commodities under the triple base option, relative to the CBO baseline. Changes in net returns are also divided into changes in returns from the market and changes in government payments. Net returns over variable costs are calculated by adding the farm value of production (season average farm price multiplied by production) and the value of government payments (deficiency payments plus net marketing loan benefits) and subtracting estimated variable cash production expenses.

The changes shown in the table are at best a rough estimate of the effects of the triple base option on farm returns, for two reasons. First, the triple base option allows producers to plant crops other than program crops or soybeans on their flexible acres. To the extent that this is done, the measures of Table 5 overstate the reduction of income of directly affected producers. Switching to production of nonprogram crops (other than soybeans) would generate net returns that are not included in the table. Second, the method used to estimate production costs does not take account of cost efficiencies that analysts argue would be generated by the triple base option. Increasing farmers' flexibility, for example, should lead to some regional shifts in production from relatively high-cost areas toward lower-cost areas. Greater use of crop rotations that allow application of less fertilizer and pesticides would also result. These effects of increasing flexibility would tend to lower the average unit costs of production. The production costs shown are based on average costs per acre and do not reflect these potential efficiency gains.

TABLE 5. NET RETURNS TO PRODUCERS OVER VARIABLE COSTS UNDER THE TRIPLE BASE OPTION COMPARED WITH BASELINE RETURNS (By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
		Changes From the CBO Baseline			
Case 1					
Wheat	--	-171	-201	-191	-180
Corn	--	-725	-509	-490	-405
Sorghum	--	-81	-69	-57	-49
Barley	--	-18	-19	-11	-7
Oats	--	-4	-4	-4	-4
Cotton	--	-189	-182	-94	-129
Rice	--	-104	-102	-109	-119
Soybeans	--	-214	-174	-136	-102
Total	--	-1,505	-1,260	-1,082	-995
Case 2					
Wheat	--	199	209	218	189
Corn	--	-254	-178	-179	-202
Sorghum	--	1	10	10	-1
Barley	--	9	7	5	4
Oats	--	-4	-4	-4	-4
Cotton	--	-189	-182	-94	-129
Rice	--	-104	-102	-109	-119
Soybeans	--	-451	-431	-427	-229
Total	--	-793	-671	-580	-491
		CBO August 1989 Baseline			
Wheat	5,794	5,987	6,010	6,084	6,166
Corn	11,903	12,385	12,412	12,541	12,627
Sorghum	1,060	950	898	859	850
Barley	468	442	386	376	384
Oats	191	192	194	194	194
Cotton	1,868	1,861	1,919	1,982	2,010
Rice	925	991	1,037	1,015	1,051
Soybeans	6,726	6,627	6,766	6,725	6,806
Total	28,935	29,435	29,622	29,776	30,088
		Analysis of Net Returns			
		Changes From the CBO Baseline			
Case 1					
Net Market Returns	--	671	518	360	390
Government Payments	--	-2,176	-1,778	-1,452	-1,385
Net Returns to Producers	--	-1,505	-1,260	-1,092	-995
Case 2					
Net Market Returns	--	-427	-452	-357	-176
Government Payments	--	-366	-219	-223	-315
Net Returns to Producers	--	-793	-671	-580	-491
		CBO August 1989 Baseline			
Net Market Returns	21,055	20,685	21,619	22,622	23,515
Government Payments	7,880	8,750	8,003	7,154	6,573
Net Returns to Producers	28,935	29,435	29,622	29,776	30,088

SOURCE: Congressional Budget Office.

NOTE: Net returns to producers over variable costs are calculated by adding the farm value of production and the value of government payments and subtracting estimated variable cash production expenses.

a. The alternative policy is assumed to begin with the 1991 crop year.

Despite these cautions, the general result shown in the table undoubtedly holds: that the triple base option would reduce farm returns. In Case 1, in which acreage reduction programs are held at baseline levels, estimated total net returns for all crops fall. Market returns rise in Case 1 for those crops shown, as seen in the bottom section of Table 5. (On a crop-by-crop basis, market returns rise for all programs crops except cotton, which experiences a small increase in production accompanied by a small price decline. The price drop is sufficient to cause gross market returns and, as a result, net market returns to decline for cotton). Reductions in government payments estimated for Case 1 overwhelm the estimated increases in market returns, causing significant declines in total net returns as shown in the table.

Net market returns rise for the program crops in Case 1 primarily because production declines as land is shifted out of program crop production. Since demand for most agricultural commodities is relatively inelastic, declines in production lead to greater than proportional increases in market prices. This causes gross market returns to rise. Production costs fall because acreage planted falls, assuring that net returns also rise.

Though net market returns rise in Case 1 for those crops shown, net market returns for the entire farm sector might not rise. Land moving into production of crops other than the program crops and soybeans would tend to cause net returns from those other uses of land to fall. The overall effect would depend on how responsive prices were to production changes in the other crops affected relative to the responsiveness of program crop prices to changes in their production levels.

For Case 2, the reduction in net returns over variable costs is smaller than for Case 1 (see Table 5). In Case 2, net market returns fall rather than rise as in Case 1. Net market returns rose in Case 1 mostly because corn and wheat prices rose. In this second case, corn and wheat prices are kept near baseline levels by reducing the acreage reduction requirements of the feed grains and wheat programs, which in turn leaves net market returns for these crops close to baseline levels. The drop in net market returns is dominated by returns from soybean production.

The difference in government payments between Case 2 and Case 1 is even more pronounced than the difference in market returns.

Government payments fall relative to baseline levels in both cases, but by far less in Case 2--mostly because corn and wheat prices are not permitted to rise and reduce deficiency payment rates, as they did in Case 1.

Wheat shows a significant increase in net returns in Case 2, unlike other crops, because total deficiency payments are higher than in the baseline. The rise in deficiency payments is a result of increases in participation. Even though the payment rate per bushel is at baseline levels and payments are made on only 85 percent of permitted acreage, the estimated increase in participation causes the amount of production covered by deficiency payments to rise relative to baseline levels.

CONCLUSION

As an alternative to current farm commodity programs for wheat, feed grains, cotton, and rice, the triple base option would increase farmers' discretion (flexibility) in making planting decisions. It would also reduce the role of government payments in these planting decisions on a portion of each farm (decouple program payments), and it would reduce federal spending for farm programs. Some environmental benefits--an additional goal of program change--might result from increased use of crop rotation, but the program is not specifically designed to encourage farming practices favored by environmentalists. (A more detailed analysis of the effects of the triple base option on commodity supply, use, and price, on net returns to producers, and on CCC outlays may be found in Appendix A.)

Sensitivity of the Estimates

The estimated effects of the program change on farmers' planting decisions appear to be rather small. For the most part, newly flexible acres--those that no longer must be planted to the program crop to receive program payments--continue to be planted to the program crop. This suggests that government programs may not be as restraining or distorting as some think, at least under conditions projected in the CBO baseline. However, even with the increased flexibility, government programs would still influence plantings because of the acreage reduction programs and because the flexibility granted is less than

complete. Producers must still plant the program crop on 85 percent of their permitted acres to receive maximum deficiency payments. There would probably be more changes in planting patterns without this restriction.

The estimates of relatively small shifts in acreage may understate or mask the potential effects of this program change. The analysis reports only on the shifts in acreage among the most extensively planted crops, ignoring the potential effects on production and prices of smaller crops. Less than two million acres each of dry edible beans and sunflowers are planted annually, for example. What might seem to be a very small shift of acreage out of wheat or corn--plantings of which total more than 130 million acres--would cause very large changes in production and prices of these smaller crops.

Second, the results of the analysis depend on the current policy baseline that is used for comparison. The soybean price is projected to remain under $5.50 per bushel through 1994 in this baseline. A projection of stronger export demand for soybeans and their products would have resulted in a higher price projection. The higher the soybean price relative to the corn price in the baseline, the greater would be the expected acreage shift resulting from the triple base option. The same caveat holds for other crops in the CBO baseline. The flexibility offered under the triple base option would cause larger acreage shifts if higher prices for alternative crops were projected.

The current policy baseline also excludes possible supply shocks, such as another drought in the United States, or demand shocks such as changes in farm or trade policies in other countries. Shocks of this kind, one or more of which are likely to happen during the next five years but cannot be foreseen, could cause changes in the relative market prices of commodities that would encourage farmers to shift toward planting crops with expectations of higher prices. The triple base option would increase farmers' flexibility in making these production adjustments called for by market needs.

Effects on Farm Income and Government Costs

Uncertainty also surrounds the effects of the triple base option on farmers' incomes and government program costs, although the direc-

tion and relative sizes of the estimated effects are consistent with expectations as well as with the findings of other analyses. (See Appendix B for a discussion of other analyses of farm program options similar to the triple base option.)

Aggregate farm income would fall with the introduction of the triple base option because government payments would fall: the program is specifically designed to cut government costs. Farm income would also tend to fall because acreage reduction programs would very likely be relaxed with the introduction of the program. (Though reduction programs cause an inefficient use of farm resources, they lead to higher commodity prices and higher farm incomes, at least in the near term). At the same time, some farmers could receive higher incomes, relative to baseline levels, if they were able to profit from the new flexibility in making planting decisions. Most current program participants would see their incomes decline, however, because they would lose deficiency payments on the portion of their acreage taken out of production.

Farmers who currently grow only nonprogram crops would see their incomes decline with the introduction of the triple base option. The study did not estimate the size of the loss--soybeans was the only nonprogram crop covered in the analysis--but the loss would depend on the extent to which land formerly devoted to program crop production was used for other crops. In this sense, the income loss of producers of nonprogram crops could be regarded as the reduction of a benefit. While they are not directly involved in government commodity programs, they have benefited to the extent that the subsidies and rules of government commodity programs have drawn potential competitors away, reduced production, and raised prices and incomes.

In the more likely scenario (Case 2), government costs are projected to decline from baseline levels by about $900 million over the 1991-1994 period with the introduction of the triple base option. The savings would be much larger if the Administration chose to keep requirements for acreage reduction programs at levels assumed in the baseline. It is more likely, however, that acreage reduction programs would be relaxed as land moved out of program crop production and into other crops. Current government programs have kept some farmers planting program crops even though market returns would

dictate otherwise, and with increased flexibility they would choose to shift into other crops.

Although acreage reduction programs reduce government costs and raise farm income, they lead to an inefficient use of farm resources. One criticism of the triple base option is that under it those programs would continue. The estimates made in this study assume that the administrators of the acreage reduction programs are guided in their decisions by levels of production and market prices.

Even though farmers' incomes would probably decline, many who now participate in government programs might find the triple base option preferable to other ways of cutting farm program costs. In particular, those producers who have attractive alternative uses of their land might prefer the triple base option with its increase of flexibility over some other method of cutting government payments that would not relax current constraints on plantings.

APPENDIXES

APPENDIX A

ESTIMATED EFFECTS OF THE TRIPLE BASE OPTION

Tables A-1 through A-24 show the estimated effects of the triple base option on commodity supply, use, and price; on farmer net returns; and on Commodity Credit Corporation program outlays for wheat, corn, sorghum, barley, oats, rice, cotton, and soybeans. Comparisons are made with projections underlying the Congressional Budget Office August 1989 baseline for CCC outlays. Estimated effects are shown for two different assumed reactions of program administrators to the new policy. In Case 1, the administrators make no change in their acreage reduction program from the levels assumed in the CBO baseline. In Case 2, they lower acreage reduction requirements for wheat and feed grains from baseline levels in order to maintain the production and prices of these crops near baseline levels. In cotton and rice, acreage reduction programs are not changed; there is no difference between the two cases for these crops.

The triple base option gives farmers who participate in the price and income support programs an opportunity that they do not have under current law to plant crops other than those for which they have established a crop acreage base on a portion of that base acreage. In the option analyzed, this planting flexibility applies to 15 percent of acreage permitted to be planted under the terms of the programs applying to each program crop. Assessing the effects of the triple base option requires estimating how farmers would use this flexibility--that is, how much of the land granted the new flexibility would be planted to nonprogram crops, to other program crops, or to the original program crop. Estimating these acreage shifts was the first of two steps used to examine the effects of the triple base option.

These acreage shifts cause total plantings of the various crops to rise or fall. Plantings would also be affected by changes in acreage reduction programs (in Case 2), and changes that might occur in farmers' price expectations. The second step of the analysis involved estimating the effects of the changes in plantings on commodity use, stocks, prices, government outlays, and farmers' net returns.

ESTIMATING ACREAGE SHIFTS ON FLEXIBLE ACRES

The part of the analysis involving the greatest uncertainty lay in estimating the acreage shifts on flexible acres. The triple base option gives farmers eligible to participate in the commodity programs a new element in their land use decisions that has not been observed before. Previous econometric analyses of farmers' planting decisions are not directly applicable for two reasons. First, their results tend to reflect the dominance of government policy variables; this option would greatly reduce the effects of government programs but only on a portion of each producer's farm. Second, most of the previous studies were national in scope, whereas farmers' planting alternatives may differ greatly from one region to the next.

The approach taken in this study was to divide the country into major producing regions for each program crop. Regions used for corn, for example, included the Lake States and Corn Belt, the Northeast, the Southeast, the Southwest (primarily Texas and California), and the Northern Plains. Budgets were created showing market returns over variable costs of production for the major crops that are alternatives to corn within each producing region. The budgets used market prices and crop yields projected by CBO, and variable costs of production based on U.S. Department of Agriculture (USDA) estimates. These budgets indicate how profitable the alternatives to corn might be once the benefits of federal programs were removed, as would be the case for the flexible acres in the triple base option.

The amount of flexible acreage within each region was estimated using 1988 farm program enrollment data for each state, obtained from the USDA's Agricultural Stabilization and Conservation Service, which administers the programs. Next, estimates were made of the newly flexible acreage that would remain in the original program crops or would be planted to another program crop or to a nonprogram crop within each major production region, using the crop budgets as guides.

It was assumed in the analysis that farmers would expect some acreage shifts to occur in the aggregate (for example, out of corn and into soybeans) and would adjust the prices they expect to receive accordingly. Their decisions on planting and program participation would be based on these revised price expectations. In general, the

study assumes that farmers adjust their expectations quickly in response to changing market conditions or policy parameters. In the case of corn, higher expected corn prices would reduce participation in the corn program, decrease the amount of corn land idled in the acreage reduction program, and increase corn production. In the case of soybeans, lower expected market prices would tend to reduce soybean plantings.

Changes in price expectations arising out of the triple base option could thus change planting decisions so as to magnify or moderate the more direct effects of changing cropping patterns on the acreage granted flexibility. The results of this analysis of acreage shifts are summarized in Table 2 in Chapter II.

ESTIMATING THE MARKET EFFECTS OF CHANGING PRODUCTION LEVELS

The second step in the analysis was to estimate the effects of these changing crop production patterns on the supply, use, and market price of each of the major commodities, and the corresponding changes in government program outlays and net returns to farmers over variable costs. The models used in this portion of the analysis are those developed by CBO to project CCC outlays and estimate the effects of changes in CCC policy.[1] Models for each of the major commodities incorporate economic and technical relationships among production, domestic use of the commodity, exports, and market prices. Estimates of government program costs are based on market prices, target prices for commodities with deficiency payments, and changes in government commodity stocks.

Production of each of the major commodities is estimated within the models based on acres planted to the crop and the expected yield. Planted acreage is the sum of the area planted by program participants and by producers planting outside the program. The expected benefits and costs of participating in the government programs determine the rate of participation. Plantings outside the program are influenced,

1. See Congressional Budget Office, *The Outlook for Farm Commodity Program Spending, Fiscal Years 1989-1994* (May 1989), for a discussion of assumptions and methods used to project Commodity Credit Corporation outlays.

first, by how many producers with program base choose not to participate, and second, by expected prices of the program crop. Some interactions among crops are incorporated into the models, the most important being those between corn and soybeans, when they compete for the same land. In this analysis, plantings were adjusted to take account of the acreage shifts estimated to result from the triple base option. Crop yields are based on expected trend yields but may be influenced by changes in acreage reduction programs. Producers are inclined to leave their least productive land idle; as acreage reduction programs become larger, average yields tend to rise.

Once levels of production are determined, the models solve simultaneously for levels of market prices, the various categories of domestic use, exports, and stocks on hand at the end of the marketing year (ending stocks). Equations relating levels of prices to the categories of demand, including the market demand for ending stocks, were estimated by CBO or constructed using results of econometric analyses available from other sources. Government price support and stock management activities may influence the equilibrium market price. If prices were tending to fall below the nonrecourse loan rate for a commodity, for example, the model would estimate a quantity of loan forfeitures (government acquisitions) sufficient to support the price near the nonrecourse loan rate.

Market prices estimated in these models determine deficiency payment rates for each supported crop. Deficiency payment rates, along with levels of participation in the programs, are used to calculate total deficiency payments. Deficiency payments are the bulk of federal outlays in these crop programs. Forfeitures of nonrecourse loans during periods of relative surplus add to outlays. Sales of government stocks reduce net outlays. The results of this second portion of the analysis are shown in Tables A-1 through A-24.

There are three tables for each commodity. The first--for example, Table A-1 for wheat--shows the acreage reduction program assumed to be in place, and acres planted, production, use, stocks, and prices for the baseline case and the two alternatives. The second table--for example, Table A-2 for wheat--shows net returns over variable costs for each commodity for the baseline case and the two alternatives. The third table--for example, Table A-3 for wheat--shows changes in net CCC outlays for each commodity for the baseline case and the two alternatives.

TABLE A-1. WHEAT: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction Program (As a percentage of base acreage)					
Baseline	5.0	5.0	5.0	5.0	5.0
Change From the Baseline					
Case 1	--	0.0	0.0	0.0	0.0
Case 2	--	-3.8	-3.8	-3.9	-3.8
Acres Planted (In millions)					
Baseline	77.1	77.5	77.3	77.3	77.5
Change From the Baseline					
Case 1	--	-0.8	-0.8	-0.9	-0.9
Case 2	--	b	b	b	b
Production (In millions of bushels)					
Baseline	2,511	2,559	2,593	2,633	2,678
Change From the Baseline					
Case 1	--	-22	-24	-24	-25
Case 2	--	-1	0	1	0
Total Use (In millions of bushels)					
Baseline	2,405	2,506	2,606	2,671	2,701
Change From the Baseline					
Case 1	--	-22	-24	-24	-25
Case 2	--	-1	0	1	0
Ending Stocks (In millions of bushels)					
Baseline	687	762	772	757	757
Change From the Baseline					
Case 1	--	0	0	0	0
Case 2	--	0	0	0	0
Season Average Price (In dollars per bushel)					
Baseline	3.50	3.26	3.19	3.24	3.28
Change From the Baseline					
Case 1	--	0.09	0.06	0.05	0.05
Case 2	--	0.00	0.00	0.00	0.00

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

b. Less than 50,000 acres.

TABLE A-2. WHEAT: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Case 1					
Cash Receipts	--	147	69	60	63
Government Payments	--	-360	-315	-296	-290
Total Receipts	--	-212	-245	-237	-227
Variable Cash Expenses	--	-42	-44	-45	-47
Net Cash Income	--	-171	-201	-191	-180
Case 2					
Cash Receipts	--	8	-5	-5	3
Government Payments	--	145	170	179	142
Total Receipts	--	154	165	174	145
Variable Cash Expenses	--	-45	-44	-44	-44
Net Cash Income	--	199	209	218	189
CBO August 1989 Baseline					
Cash Receipts	8,779	8,346	8,281	8,534	8,783
Government Payments	1,146	1,616	1,775	1,676	1,601
Total Receipts	9,925	9,962	10,056	10,210	10,384
Variable Cash Expenses	4,131	3,975	4,046	4,126	4,218
Net Cash Income	5,794	5,987	6,010	6,084	6,166

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-3. WHEAT: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION
(By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Case 1					
Net Lending and Storage	-15	7	1	4	-3
Direct Payments	-148	-342	-302	-292	-1,084
Other	0	4	4	4	12
Total	-163	-330	-297	-284	-1,074
Case 2					
Net Lending and Storage	-1	2	0	-1	0
Direct Payments	55	158	172	167	552
Other	0	0	0	0	0
Total	54	160	172	166	552
CBO August 1989 Baseline					
Net Lending and Storage	83	112	35	33	263
Direct Payments	1,357	1,682	1,730	1,644	6,413
Other	-150	13	90	93	96
Total	1,290	1,807	1,855	1,771	6,723

SOURCE: Congressional Budget Office.

TABLE A-4. CORN: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction Program (As a percentage of base acreage)					
Baseline	10.0	10.0	10.0	10.0	5.0
Change From the Baseline					
Case 1	--	0.0	0.0	0.0	0.0
Case 2	--	-3.4	-3.5	-3.4	-3.0
Acres Planted (In millions)					
Baseline	75.6	75.2	75.5	75.3	75.0
Change From the Baseline					
Case 1	--	-0.6	-0.7	-0.4	-0.4
Case 2	--	-0.3	-0.2	-0.2	-0.1
Production (In millions of bushels)					
Baseline	7,957	8,081	8,273	8,388	8,512
Change From the Baseline					
Case 1	--	-65	-77	-45	-44
Case 2	--	-37	-23	-21	-15
Total Use (In millions of bushels)					
Baseline	7,914	8,193	8,359	8,461	8,549
Change From the Baseline					
Case 1	--	-51	-71	-58	-47
Case 2	--	-30	-25	-21	-17
Ending Stocks (In millions of bushels)					
Baseline	1,991	1,883	1,801	1,733	1,700
Change From the Baseline					
Case 1	--	-14	-20	-6	-3
Case 2	--	-7	-6	-5	-4
Season Average Price (In dollars per bushel)					
Baseline	1.97	1.99	2.09	2.17	2.23
Change From the Baseline					
Case 1	--	0.09	0.09	0.05	0.05
Case 2	--	0.00	0.00	0.00	0.00

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 Baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-5. CORN: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Case 1					
Cash Receipts	--	620	542	305	305
Government Payments	--	-1,423	-1,140	-850	-765
Total Receipts	--	-803	-598	-545	-460
Variable Cash Expenses	--	-78	-89	-55	-55
Net Cash Income	--	-725	-509	-490	-405
Case 2					
Cash Receipts	--	-83	-68	-64	-56
Government Payments	--	-248	-171	-171	-192
Total Receipts	--	-331	-239	-235	-248
Variable Cash Expenses	--	-77	-61	-56	-46
Net Cash Income	--	-254	-178	-179	-202
CBO August 1989 Baseline					
Cash Receipts	15,640	16,059	17,281	18,219	18,961
Government Payments	4,847	5,113	4,202	3,630	3,209
Total Receipts	20,487	21,172	21,483	21,849	22,170
Variable Cash Expenses	8,583	8,787	9,071	9,307	9,543
Net Cash Income	11,903	12,385	12,412	12,541	12,627

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-6. CORN: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION
(By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Case 1					
Net Lending and Storage	0	-8	-8	-2	-18
Direct Payments	-596	-1,305	-1,020	-814	-3,735
Other	0	-3	-2	0	-5
Total	-596	-1,316	-1,030	-816	-3,758
Case 2					
Net Lending and Storage	0	0	0	0	0
Direct Payments	-119	-214	-172	-178	-683
Other	0	0	0	0	0
Total	-119	-214	-172	-178	-683
CBO August 1989 Baseline					
Net Lending and Storage	880	577	587	723	2,767
Direct Payments	5,304	4,740	3,968	3,457	17,469
Other	3	-4	15	49	48
Total	6,187	5,313	4,569	4,229	20,445

SOURCE: Congressional Budget Office.

TABLE A-7. SORGHUM: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction Program (As a percentage of base acreage)					
Baseline	10.0	10.0	10.0	10.0	10.0
Change From the Baseline					
Case 1	--	0.0	0.0	0.0	0.0
Case 2	--	-3.4	-3.5	-3.4	-3.0
Acres Planted (In millions)					
Baseline	12.4	11.8	11.3	11.0	11.0
Change From the Baseline					
Case 1	--	-0.2	-0.2	-0.2	-0.2
Case 2	--	0.6	0.6	0.5	0.4
Production (In millions of bushels)					
Baseline	740	711	693	679	689
Change From the Baseline					
Case 1	--	-14	-14	-14	-14
Case 2	--	36	35	30	22
Total Use (In millions of bushels)					
Baseline	770	745	745	720	720
Change From the Baseline					
Case 1	--	-9	-9	-9	-9
Case 2	--	24	24	20	15
Ending Stocks (In millions of bushels)					
Baseline	265	231	180	138	107
Change From the Baseline					
Case 1	--	-5	-9	-14	-18
Case 2	--	12	24	34	41
Season Average Price (In dollars per bushel)					
Baseline	1.71	1.78	1.89	1.97	2.03
Change From the Baseline					
Case 1	0.00	0.08	0.05	0.04	0.04
Case 2	0.00	0.01	0.01	0.01	0.02

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-8. SORGHUM: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Case 1					
Cash Receipts	--	30	10	2	1
Government Payments	--	-127	-95	-75	-67
Total Receipts	--	-97	-85	-73	-66
Variable Cash Expenses	--	-16	-16	-16	-17
Net Cash Income	--	-81	-69	-57	-49
Case 2					
Cash Receipts	--	56	59	54	32
Government Payments	--	-24	-17	-16	-13
Total Receipts	--	32	42	38	19
Variable Cash Expenses	--	31	32	28	20
Net Cash Income	--	1	10	10	-1
CBO August 1989 Baseline					
Cash Receipts	1,268	1,266	1,308	1,362	1,433
Government Payments	598	475	384	299	255
Total Receipts	1,866	1,741	1,692	1,661	1,688
Variable Cash Expenses	806	791	794	802	838
Net Cash Income	1,060	950	898	859	850

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-9. SORGHUM: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION (By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Case 1					
Net Lending and Storage	0	0	0	0	0
Direct Payments	-51	-114	-87	-72	-324
Other	0	0	0	0	0
Total	-51	-114	-87	-72	-324
Case 2					
Net Lending and Storage	0	0	0	0	0
Direct Payments	-9	-21	-17	-15	-62
Other	0	0	0	0	0
Total	-9	-21	-17	-15	-62
CBO August 1989 Baseline					
Net Lending and Storage	86	-12	-5	-54	15
Direct Payments	549	523	350	252	1,674
Other	0	0	0	0	0
Total	635	511	345	198	1,689

SOURCE: Congressional Budget Office.

TABLE A-10. BARLEY: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction Program (As a percentage of base acreage)					
Baseline	10.0	10.0	10.0	10.0	10.0
Change From the Baseline					
Case 1	--	0.0	0.0	0.0	0.0
Case 2	--	-3.4	-3.5	-3.4	-3.0
Acres Planted (In millions)					
Baseline	9.8	10.0	9.2	8.5	8.5
Change From the Baseline					
Case 1	--	0.2	0.2	0.2	0.2
Case 2	--	0.4	0.4	0.4	0.3
Production (In millions of bushels)					
Baseline	467	484	452	427	433
Change From the Baseline					
Case 1	--	8	8	8	8
Case 2	--	20	20	19	17
Total Use (In millions of bushels)					
Baseline	473	470	450	450	445
Change From the Baseline					
Case 1	--	5	5	5	5
Case 2	--	13	13	12	12
Ending Stocks (In millions of bushels)					
Baseline	137	152	153	130	119
Change From the Baseline					
Case 1	--	8	16	24	32
Case 2	--	7	13	20	25
Season Average Price (In dollars per bushel)					
Baseline	2.00	1.90	1.85	2.00	2.10
Change From the Baseline					
Case 1	--	-0.02	-0.02	-0.02	-0.02
Case 2	--	-0.04	-0.04	-0.04	-0.04

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-11. BARLEY: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Case 1					
Cash Receipts	--	7	7	7	7
Government Payments	--	-16	-17	-9	-4
Total Receipts	--	-9	-10	-2	3
Variable Cash Expenses	--	9	9	10	10
Net Cash Income	--	-18	-19	-11	-7
Case 2					
Cash Receipts	--	18	18	18	17
Government Payments	--	11	10	7	7
Total Receipts	--	29	28	25	24
Variable Cash Expenses	--	20	21	20	20
Net Cash Income	--	9	7	5	4
CBO August 1989 Baseline					
Cash Receipts	934	920	836	854	910
Government Payments	87	111	115	71	46
Total Receipts	1,021	1,031	951	925	956
Variable Cash Expenses	553	589	565	549	572
Net Cash Income	468	442	386	376	384

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-12. BARLEY: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION (By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Case 1					
Net Lending and Storage	0	0	0	0	0
Direct Payments	-6	-16	-14	-7	-43
Other	0	0	0	0	0
Total	-6	-16	-14	-7	-43
Case 2					
Net Lending and Storage	0	0	0	0	0
Direct Payments	4	10	9	7	30
Other	0	0	0	0	0
Total	4	10	9	7	30
CBO August 1989 Baseline					
Net Lending and Storage	59	-3	-20	-24	12
Direct Payments	96	98	97	61	352
Other	0	0	0	0	0
Total	155	95	77	37	364

SOURCE: Congressional Budget Office.

TABLE A-13. OATS: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction Program (As a percentage of base acreage)					
Baseline	5.0	5.0	5.0	5.0	5.0
Change From the Baseline					
Case 1	--	0.0	0.0	0.0	0.0
Case 2	--	0.0	0.0	0.0	0.0
Acres Planted (In millions)					
Baseline	12.4	12.4	12.4	12.4	12.3
Change From the Baseline					
Case 1	--	0.2	0.2	0.2	0.2
Case 2	--	0.2	0.2	0.2	0.2
Production (In millions of bushels)					
Baseline	405	409	413	415	417
Change From the Baseline					
Case 1	--	7	7	7	7
Case 2	--	7	7	7	7
Total Use (In millions of bushels)					
Baseline	430	440	440	445	445
Change From the Baseline					
Case 1	--	3	3	3	3
Case 2	--	3	3	3	3
Ending Stocks (In millions of bushels)					
Baseline	121	119	121	120	121
Change From the Baseline					
Case 1	--	3	7	10	13
Case 2	--	3	7	10	13
Season Average Price (In dollars per bushel)					
Baseline	1.55	1.55	1.55	1.55	1.55
Change From the Baseline					
Case 1	0.00	-0.02	-0.02	-0.02	-0.02
Case 2	0.00	-0.02	-0.02	-0.02	-0.02

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-14. OATS: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Case 1					
Cash Receipts	--	3	3	3	3
Government Payments	--	0	0	0	0
Total Receipts	--	3	3	3	3
Variable Cash Expenses	--	7	7	7	7
Net Cash Income	--	-4	-4	-4	-4
Case 2					
Cash Receipts	--	3	3	3	3
Government Payments	--	0	0	0	0
Total Receipts	--	3	3	3	3
Variable Cash Expenses	--	7	7	7	7
Net Cash Income	--	-4	-4	-4	-4
CBO August 1989 Baseline					
Cash Receipts	628	634	640	644	646
Government Payments	0	0	0	0	0
Total Receipts	628	634	640	644	646
Variable Cash Expenses	437	442	446	450	452
Net Cash Income	191	192	194	194	194

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-15. OATS: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION
(By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Case 1					
Net Lending and Storage	0	0	0	0	0
Direct Payments	0	0	0	0	0
Other	0	0	0	0	0
Total	0	0	0	0	0
Case 2					
Net Lending and Storage	0	0	0	0	0
Direct Payments	0	0	0	0	0
Other	0	0	0	0	0
Total	0	0	0	0	0
CBO August 1989 Baseline					
Net Lending and Storage	2	1	1	1	5
Direct Payments	0	0	0	0	0
Other	0	0	0	0	0
Total	2	1	1	1	5

SOURCE: Congressional Budget Office.

TABLE A-16. COTTON: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction (As a percentage of base acreage)					
Baseline	25.0	20.0	15.0	15.0	15.0
Change From the Baseline, Cases 1 and 2	--	0.0	0.0	0.0	0.0
Acres Planted (In millions)					
Baseline	10.1	10.7	10.3	10.3	10.2
Change From the Baseline, Cases 1 and 2	--	0.1	0.1	0.1	0.1
Production (In millions of bales)					
Baseline	13.4	13.1	13.4	13.6	13.9
Change From the Baseline, Cases 1 and 2	--	0.1	0.2	0.1	0.1
Total Use (In millions of bales)					
Baseline	13.5	13.4	13.5	13.7	14.0
Change From the Baseline, Cases 1 and 2	--	0.1	0.2	0.1	0.1
Ending Stocks (In millions of bales)					
Baseline	4.2	4.0	4.1	4.1	4.1
Change From the Baseline, Cases 1 and 2	--	0.0	0.0	0.0	0.0
Season Average Price (In dollars per pound)					
Baseline	0.588	0.582	0.581	0.591	0.595
Change From the Baseline, Cases 1 and 2	--	-0.010	-0.014	-0.001	-0.001

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-17. COTTON: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Cases 1 and 2					
Cash Receipts	--	-44	-49	19	7
Government Payments	--	-126	-96	-92	-123
Total Receipts	--	-170	-145	-73	-116
Variable Cash Expenses	--	19	37	21	13
Net Cash Income	--	-189	-182	-94	-129
CBO August 1989 Baseline					
Cash Receipts	3,781	3,666	3,744	3,855	3,970
Government Payments	648	702	738	717	686
Total Receipts	4,429	4,368	4,482	4,572	4,656
Variable Cash Expenses	2,561	2,507	2,563	2,590	2,646
Net Cash Income	1,868	1,861	1,919	1,982	2,010

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-18. COTTON: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION (By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Cases 1 and 2					
Net Lending and Storage	0	0	0	0	0
Direct Payments	-38	-117	-95	-102	-352
Other	0	0	0	0	0
Total	-38	-117	-95	-102	-352
CBO August 1989 Baseline					
Net Lending and Storage	217	123	124	25	489
Direct Payments	668	713	731	709	2,821
Other	21	21	21	21	84
Total	906	857	876	755	3,394

SOURCE: Congressional Budget Office.

TABLE A-19. RICE: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acreage Reduction Program (As a percentage of base acreage)					
Baseline	15.0	15.0	12.5	12.5	10.0
Change From the Baseline, Cases 1 and 2	--	0.0	0.0	0.0	0.0
Acres Planted (In millions)					
Baseline	3.05	3.05	3.21	3.15	3.30
Change From the Baseline, Cases 1 and 2	--	-0.03	-0.02	-0.04	-0.03
Production (In millions of cwt)					
Baseline	170	171	181	179	189
Change From the Baseline, Cases 1 and 2	--	-2	-1	-2	-1
Total Use (In millions of cwt)					
Baseline	168	174	181	187	193
Change From the Baseline, Cases 1 and 2	--	-1	-2	-2	-3
Ending Stocks (In millions of cwt)					
Baseline	33	34	37	35	35
Change From the Baseline, Cases 1 and 2	--	-1	0	0	2
Season Average Price (In dollars per cwt)					
Baseline	7.00	6.40	6.30	6.40	6.50
Change From the Baseline, Cases 1 and 2	--	0.13	0.08	0.13	0.10

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

NOTE: Cwt = hundredweight, or 100 pounds.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-20. RICE: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Cases 1 and 2					
Cash Receipts	--	11	7	11	9
Government Payments	--	-124	-115	-130	-136
Total Receipts	--	-113	-108	-119	-127
Variable Cash Expenses	--	-9	-6	-10	-8
Net Cash Income	--	-104	-102	-109	-119
CBO August 1989 Baseline					
Cash Receipts	1,189	1,093	1,139	1,148	1,225
Government Payments	554	733	789	761	776
Total Receipts	1,743	1,826	1,928	1,909	2,001
Variable Cash Expenses	818	835	891	894	950
Net Cash Income	925	991	1,037	1,015	1,051

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-21. RICE: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION
(By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Cases 1 and 2					
Net Lending and Storage	-2	-21	-16	-24	-63
Direct Payments	-31	-101	-101	-108	-341
Other	0	0	0	0	0
Total	-33	-122	-117	-132	-404
CBO August 1989 Baseline					
Net Lending and Storage	29	110	130	109	378
Direct Payments	377	495	618	679	2,169
Other	1	0	0	0	1
Total	407	605	748	788	767

SOURCE: Congressional Budget Office.

TABLE A-22. SOYBEANS: CHANGES IN SUPPLY, USE, AND PRICES UNDER THE TRIPLE BASE OPTION (By crop year)

	1990[a]	1991	1992	1993	1994
Acres Planted (In millions)					
Baseline	59.0	59.1	59.2	59.7	60.3
Change From the Baseline					
Case 1	--	0.9	0.9	0.6	0.6
Case 2	--	1.9	1.7	1.6	1.3
Production (In millions of bushels)					
Baseline	1,918	1,941	1,961	1,999	2,040
Change From the Baseline					
Case 1	--	30	31	21	21
Case 2	--	62	56	53	44
Total Use (In millions of bushels)					
Baseline	1,897	1,940	1,969	2,011	2,047
Change From the Baseline					
Case 1	--	20	26	25	22
Case 2	--	36	51	56	48
Ending Stocks (In millions of bushels)					
Baseline	218	209	196	187	183
Change From the Baseline					
Case 1	--	8	9	5	4
Case 2	--	16	16	12	8
Season Average Price (In dollars per bushel)					
Baseline	5.30	5.24	5.31	5.28	5.30
Change From the Baseline					
Case 1	--	-0.16	-0.14	-0.10	-0.08
Case 2	--	-0.33	-0.31	-0.29	-0.18

SOURCE: Congressional Budget Office. Comparisons are with the CBO August 1989 baseline.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-23. SOYBEANS: CHANGES IN NET RETURNS TO PRODUCERS RESULTING FROM THE TRIPLE BASE OPTION
(By crop year, in millions of dollars)

	1990[a]	1991	1992	1993	1994
Changes Compared With Baseline					
Case 1					
Cash Receipts	--	-159	-116	-96	-61
Variable Cash Expenses	--	55	58	40	41
Net Cash Income	--	-214	-174	-136	-102
Case 2					
Cash Receipts	--	-339	-327	-326	-143
Variable Cash Expenses	--	112	104	101	86
Net Cash Income	--	-451	-431	-427	-229
CBO August 1989 Baseline					
Cash Receipts	10,172	10,163	10,423	10,550	10,817
Variable Cash Expenses	3,446	3,536	3,657	3,825	4,011
Net Cash Income	6,726	6,627	6,766	6,725	6,806

SOURCE: Congressional Budget Office.

a. The alternative policy is assumed to begin with the 1991 crop year.

TABLE A-24. SOYBEANS: CHANGES IN COMMODITY CREDIT CORPORATION OUTLAYS RESULTING FROM THE TRIPLE BASE OPTION (By fiscal year, in millions of dollars)

	1991	1992	1993	1994	1991-1994
Changes Compared With Baseline					
Case 1					
Net Lending and Storage	0	13	18	0	31
Other	0	0	0	0	0
Total	0	13	18	0	31
Case 2					
Net Lending and Storage	0	43	24	0	67
Other	0	0	0	0	0
Total	0	43	24	0	67
CBO August 1989 Baseline					
Net Lending and Storage	66	45	22	-14	119
Other	18	18	18	18	72
Total	84	63	40	4	191

SOURCE: Congressional Budget Office.

APPENDIX B

ANALYSES OF PROGRAM OPTIONS SIMILAR TO THE TRIPLE BASE OPTION

Recent studies by the consultants Abel, Daft, and Earley, and by the Food and Agricultural Policy Research Institute (FAPRI) examine alternatives to current farm programs that are similar to the triple base option.[1] The Department of Agriculture has also estimated savings from a triple base option much like the one examined in this study. The USDA alternative was cited in the President's fiscal year 1990 budget as a possible way to cut farm program spending. Details on the USDA analysis beyond the savings estimates were not released.

These analyses differ from the one reported in this study and from each other with respect to the specifics of the alternative analyzed, the baseline used for comparison, and their assumptions as to how the Secretary of Agriculture would adjust acreage reduction programs after the alternative was introduced. Despite these differences, the program alternatives are similar in nature and comparable.

DIFFERENCES IN THE OPTIONS BEING ANALYZED

All of the options analyzed are alike in that they make deficiency payments on only a portion of permitted acres and allow the unpaid part of permitted acres to be planted to any crop with no loss of base credit. The option analyzed in the FAPRI study was similar to that examined here, except that payments would be made on 80 percent rather than 85 percent of permitted acres. In the USDA option, payments would be made on 85 percent of permitted acres, but only program crops or soybeans could be planted on the newly flexible acreage.

1. See Abel, Daft, and Earley, *An Analysis of Alternative Policies for Grains and Cotton* (Alexandria, Va.: Abel, Daft, and Earley, December 1988), and Patrick Westhoff, *Impacts of the 80-Percent Deficiency Payment Program on Commodity Markets, Producer Returns, and Government Program Costs* (Ames, Iowa: Food and Agriculture Policy Research Institute, April 1989).

The Abel, Daft, and Earley study assumed that producers would receive deficiency payments on a percentage of permitted acres varying across crops and from year to year. The payment acreage percentage for each crop would be calculated as that necessary to achieve outlay changes for each commodity that would be the same as for a second program alternative examined by Abel, Daft, and Earley. The other program change involves realigning target prices so as to keep them in a fixed relationship to production costs. Commodity Credit Corporation outlays in this alternative exceed their baseline levels for wheat, barley, oats, and cotton, but the increases are more than offset by decreases in spending in the other supported crops. The payment acreage percentages used by Abel, Daft, and Earley range from about 28 percent for corn to 158 percent for barley. The payment acreage exceeds permitted acreage in the case of barley because higher payments are necessary to raise spending to the outlay goals for the barley program used in the analysis.

ESTIMATES OF OUTLAY SAVINGS

The estimates of outlay savings made by each study are summarized in Table B-1. The estimates for any particular fiscal year may not be comparable because the alternative programs are not all introduced in the same year. The option begins with 1989 crops in the Abel, Daft, and Earley study and with 1990 crops in the FAPRI and USDA analyses. The triple base option begins with 1991 crops in the Congressional Budget Office analysis. Estimates reported by Abel, Daft, and Earley are by crop year rather than by fiscal year.

The options analyzed by FAPRI, USDA, and Case 1 of the CBO study have a similar program design and all assume that there would be no changes in acreage reduction programs from levels in the current policy baselines. The estimated savings are also quite similar across these analyses. They exceed, by a substantial margin, estimated savings in CBO's Case 2, in which requirements of acreage reduction programs were reduced.

Abel, Daft, and Earley eliminated acreage reduction programs for wheat and feed grains, rather than merely reducing the program's requirements as CBO assumed would be done in Case 2. Nevertheless,

TABLE B-1. FOUR ESTIMATES OF THE EFFECTS OF TRIPLE BASE OPTIONS ON COMMODITY CREDIT CORPORATION OUTLAYS (By fiscal year, in billions of dollars)

Study	1989	1990	1991	1992	1993	1994
Abel, Daft, and Earley	a	a	n.a.	n.a.	n.a.	n.a.
Food and Agriculture Research Policy Institute	n.a.	-0.71	-2.03	-1.85	-1.83	n.a.
Department of Agriculture[b]	n.a.	-0.81	-1.58	-2.42	-2.28	-1.71
Congressional Budget Office						
Case 1	n.a.	n.a.	-0.90	-2.00	-1.62	-1.41
Case 2	n.a.	n.a.	-0.14	-0.26	-0.20	-0.25

SOURCES: Abel, Daft, and Earley, *An Analysis of Alternative Policies for Grains and Cotton* (Alexandria, Va.: Abel, Daft, and Earley, December 1988); Patrick Westhoff, *Impacts of the 80-Percent Deficiency Payment Program on Commodity Markets, Producer Returns, and Government Program Costs* (Ames, Iowa: Food and Agriculture Policy Research Institute, April 1989); U.S. Department of Agriculture; and Congressional Budget Office.

NOTES: The Abel, Daft, and Earley study covers crop years 1989 and 1990 only, the FAPRI and USDA studies start the program with the 1990 crop year, and the CBO study starts the program with the 1991 crop year.

n.a. = not applicable.

a. Estimated outlay savings average $2.4 billion during the 1989 and 1990 crop years.

b. The option analyzed by the Department of Agriculture allows planting of only program crops, including soybeans, on the unpaid portion of permitted acres.

the outlay savings reported by Abel, Daft, and Earley are higher than in any of the other studies, stemming from more severe cuts in the proportion of acreage eligible for payments (at least in feed grains, which account for the bulk of CCC outlays in current policy baselines).[2]

OTHER FINDINGS

Changes in acreage planted to major crops estimated to result from the adoption of the triple base option, and changes in commodity prices caused by higher or lower production, are summarized in Table B-2.

2. The triple base option examined in the CBO analysis would increase rather than reduce outlays if acreage reduction programs for wheat and feed grains were eliminated.

TABLE B-2. COMPARISON OF ASSUMPTIONS AND RESULTS OF THREE ANALYSES OF TRIPLE BASE OPTIONS

Study	Wheat	Corn	Sorghum	Barley	Oats	Cotton	Rice	Soybeans
Payment Acres as a Percentage of Permitted Area								
Abel, Daft, and Earley	80	29	29	130	40	59	46	n.a.
FAPRI	80	80	80	80	80	80	80	n.a.
CBO	85	85	85	85	85	85	85	n.a.
Acreage Reduction Program Requirements[a] (Percentage of crop acreage base)								
Abel, Daft, and Earley								
Baseline	5.0	10.0	10.0	10.0	5.0	25.0	20.0	n.a.
Option	0.0	0.0	0.0	0.0	0.0	25.0	15.0	n.a.
FAPRI								
Baseline	5.0	12.5	12.5	12.5	5.0	25.0	25.0	n.a.
Option	5.0	12.5	12.5	12.5	5.0	25.0	25.0	n.a.
CBO								
Baseline	5.0	10.0	10.0	10.0	5.0	15.0	12.5	n.a.
Case 1	5.0	10.0	10.0	10.0	5.0	15.0	12.5	n.a.
Case 2	1.2	6.5	6.5	6.5	5.0	15.0	12.5	n.a.
Changes in Acreage Planted to Major Crops from Baseline Levels[b] (In millions of acres)								
Abel, Daft, and Earley	2.5	4.0	1.6	1.2	0.5	0.0	0.1	n.a.
FAPRI	-0.4	-0.1	-0.1	-c	+c	-0.1	-c	0.1
CBO								
Case 1	-0.8	-0.7	-0.2	0.2	0.2	0.1	-c	0.9
Case 2	+c	-0.2	0.6	0.4	0.2	0.1	-c	1.7
Changes in Commodity Prices from Baseline Levels[b] (In dollars per bushel)[b]								
Abel, Daft, and Earley	-0.20	-0.25	-0.23	-0.20	-0.10	0.00	-0.10	n.a.
FAPRI	0.04	0.02	0.02	0.02	-0.02	0.072	0.07	-0.17
CBO								
Case 1	0.06	0.09	0.05	-0.02	-0.02	0.014	0.08	-0.14
Case 2	0.00	0.00	0.01	-0.04	-0.02	0.014	0.08	-0.31

SOURCES: Abel, Daft, and Earley, *An Analysis of Alternative Policies for Grains and Cotton* (Alexandria, Va.: Abel, Daft, and Earley, December 1988); Patrick Westhoff, *Impacts of the 80-Percent Deficiency Payment Program on Commodity Markets, Producer Returns, and Government Program Costs* (Ames, Iowa: Food and Agriculture Policy Research Institute, April 1989); and Congressional Budget Office.

NOTE: n.a. = not applicable.

a. Figures are for the second year of implementation of the option: crop year 1990 for the Abel, Daft, and Earley study; 1991 for the FAPRI study; and 1992 for the CBO study.

b. Rice prices are in dollars per hundredweight; cotton prices are in dollars per pound.

c. Less than 50,000 acres.

The changes from the baseline shown in Table B-2 are for the second year that each program is in place. This information was not available for the USDA analysis.

Acres planted to program crops rise above baseline levels for each crop in the Abel, Daft, and Earley analysis. This follows directly from their assumption that acreage reduction programs would be eliminated for wheat and feed grains and reduced for rice. Dropping or cutting acreage reduction programs makes land that would otherwise have been left idle to satisfy CCC program requirements now available to be planted. Abel, Daft, and Earley conclude that much of this acreage would be planted to the program crops, even with fairly significant commodity price declines.

The FAPRI option is similar to CBO's Case 1 in that acreage reduction programs are held at baseline levels. FAPRI's analysts concluded that the net changes in acres planted would be smaller than those assumed by CBO. In wheat, for example, the net reduction in acres planted during the second year of the triple base option is 0.4 million in the FAPRI analysis, but 0.8 in the CBO analysis. In fact, these differences are relatively small, given the uncertainties surrounding the estimates of both analyses.

The FAPRI analysis shows decreases in acres planted to barley and cotton, while CBO's Case 1, which is generally comparable, shows increases. Apart from these differences in sign, the FAPRI analysis and CBO analysis of Case 1 are not dissimilar.

The final portion of Table B-2 shows the changes in commodity prices resulting from the program change in each of the analyses. The price changes are closely tied to shifts in acreage planted and the resulting changes in production. Prices fall for all program crops except cotton in the Abel, Daft, and Earley study. The price drops--$0.20 per bushel for wheat and $0.25 per bushel for corn--are relatively large but are consistent with the sizes of the estimated acreage changes.

Prices for all program crops except oats rise in the FAPRI study, again consistent with the direction and relative sizes of the net changes in planted acres. Soybean prices fall as acreage is shifted into soybean production. With the exception of barley, price changes in CBO's Case 1 are in the same direction as in the FAPRI analysis. The

differences in relative sizes of the price changes are directly related to the differences in estimated acreage shifts between the two studies.

Wheat and corn prices in CBO's Case 2 are unchanged from baseline levels by design. Acreage reduction programs for these crops are assumed to be reduced just enough to return prices to these levels following the acreage shifts resulting from the triple base option. In some respects, CBO's Case 2 represents a middle ground between Abel, Daft, and Earley, who eliminate acreage reduction programs for wheat and corn, and FAPRI and CBO's Case 1, in which acreage reduction programs are assumed to be kept unchanged from baseline levels. The differences in results show the importance of the underlying assumptions about how the Secretary of Agriculture would respond to program changes when making decisions about acreage reduction programs.

GLOSSARY

Acreage Reduction Program. A program in which producers agree not to plant part of their crop acreage base in the supported crop. Participation is voluntary and unpaid, but producers must participate to receive deficiency payments and other program benefits.

Crop Acreage Base. A crop acreage base for a supported crop entitles a producer to participate in the government price and income support program for that crop and receive program benefits. The crop acreage base is calculated as the average of acreage planted and considered planted to the crop during the previous five years and is adjusted each year. Acreage that is considered planted acreage includes land idled under government programs, and land that could not be planted because of natural disaster.

Commodity Credit Corporation (CCC). A wholly owned government corporation created in 1933 to stabilize and support farm income and prices. Most of the activities of the corporation are carried out by the Agricultural Stabilization and Conservation Service of the U.S. Department of Agriculture. CCC activities are financed through borrowings from the U.S. Treasury and appropriations made to reimburse it for losses realized in its operations.

Conservation Reserve Program. A long-term land retirement program. Landowners receive annual rental payments and assistance in putting an approved vegetative cover on the land in exchange for agreeing to devote the land to conserving uses during the 10-year term of the contract.

Crop Year or Marketing Year. The 12-month period beginning around harvest time, during which a crop is marketed. The wheat crop year begins in June, the rice and cotton crop year in August, and the corn and soybean crop year in September. The crop year is identified by the calendar year in which the crop is harvested. The 1988 wheat crop, for example, is harvested during calendar year 1988, even though most of

it was planted during the fall of 1987. The 1988 wheat crop year, therefore, extends from June 1988 through May 1989.

Deficiency Payment. A direct payment made to producers participating in a program when the average market price falls below the target price for the crop. The total deficiency payment, which can be paid in a combination of generic commodity certificates and cash, equals the product of the producer's planted acres, program yield, and the deficiency payment rate. Generally, the deficiency payment rate equals the difference between the target price and the greater of the market price or the nonrecourse loan rate.

Export Enhancement Program. A program offering subsidies, in the form of generic commodity certificates, to allow U.S. agricultural commodities--mostly wheat--to be sold to certain foreign purchasers at prices below U.S. market prices. The program was designed primarily to compete directly with European Community subsidized grain sales.

Farm Acreage Base. The total of crop acreage bases for program crops (wheat, feed grains, cotton, and rice) on any farm, plus the average annual acreage planted to soybeans and land devoted to conserving uses.

Farmer-Owned Reserve. A storage program designed to ensure adequate stock levels to dampen sharp price movements in wheat and feed grains. Farmers receive extended nonrecourse loans and place their grain in storage, usually on their own farms. The CCC makes annual storage payments. Farmers can remove their grain from storage when market prices reach specific "release prices" or grain can be exchanged for generic commodity certificates.

Generic Commodity Certificates. Negotiable, dollar-denominated certificates received by CCC program participants in lieu of cash payments. Generic certificates can be used to redeem outstanding nonrecourse loans, exchanged for CCC-owned stocks, or, in some cases, exchanged for cash.

Marketing Loan Program. A program in which a producer may repay a nonrecourse commodity loan at a per-unit rate that is lower than the rate used to compute the value of the loan when granted. For example, a rice grower can place one hundredweight (cwt) of rice under loan and

receive the nonrecourse loan rate of $6.50. If the world market price, adjusted to the farm level, were less than $6.50 per cwt--say $5.00--then the producer could satisfy the terms of the loan and regain clear title to the crop by paying $5.00 to the CCC. Marketing loans protect farmer returns while reducing or eliminating the price-supporting function of the nonrecourse loan program.

Marketing Year. *See* Crop Year.

Nonrecourse Loan. Loan offered to producers participating in CCC programs for wheat, feed grains, soybeans, cotton, rice, and honey. When a loan is made, the producer's crop is pledged as collateral, and the total amount of the loan equals the amount of crop pledged times the *nonrecourse loan rate.* These are nonrecourse loans because the commodity can be forfeited to satisfy the loan even if its market price has fallen below the nonrecourse loan rate. Producers can repay their loans with cash or, effectively, with generic commodity certificates. The *basic loan rate* is largely specified in the law. The *adjusted loan rate* in wheat and feed grains is the final rate used and may be below the basic rate. The Secretary of Agriculture may set the adjusted rate up to 20 percent below the basic rate.

Paid Land Diversion Program. Similar to an acreage reduction program except that participants are paid for the land removed from production of the program crop. Under current law, participation is not required for producers to receive deficiency payments and other program benefits.

Program Yield. A yield figure assigned to each farm and used to calculate deficiency payments. Current program yields are calculated as the average of program yields during 1981 to 1985, with the high and low years removed.

Release Price. *See* Farmer-Owned Reserve.

Target Price. A price level established by law to calculate deficiency payments for wheat, feed grains, cotton, and rice.

50/92 and 0/92. Provisions in the farm law allowing producers to receive 92 percent of their deficiency payments even though they plant as little as 50 percent of the acreage permitted to be planted in the crop program (in 50/92) or even though they do not plant any of the program crop (in 0/92).