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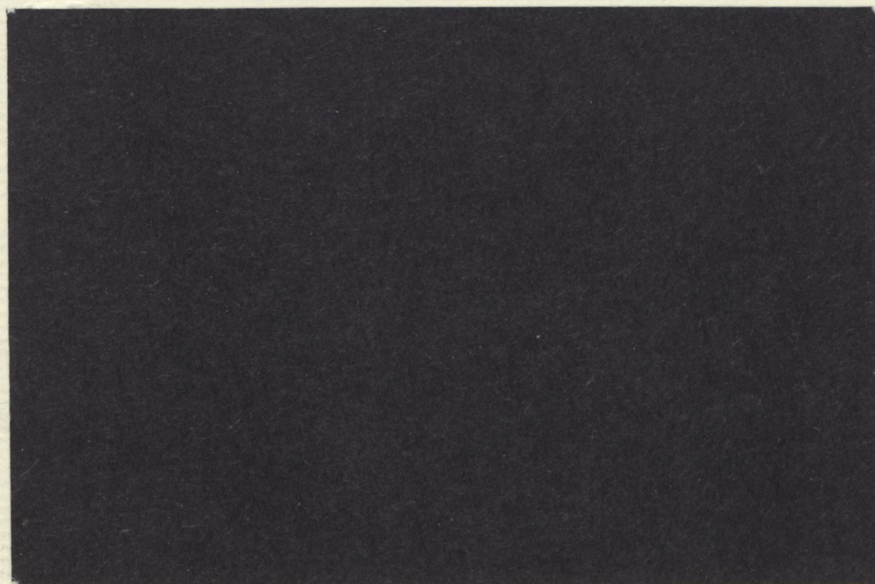
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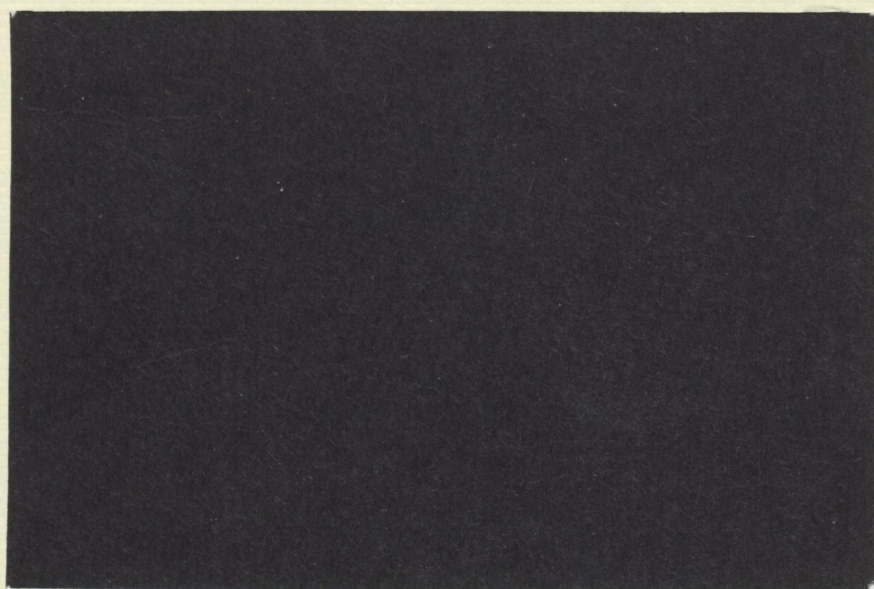


FAPRI Staff Report

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**An Evaluation of Price Support Equilibration
Options for the 1990 Farm Bill**

FAPRI Staff Report #4-90
April 1990

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Executive Summary

A price support equilibration program is analyzed using the modeling system maintained by the Food and Agricultural Policy Research Institute (FAPRI). Three options are compared to the March 1990 FAPRI baseline over marketing years 1991/92-1995/96, the expected duration of the 1990 farm bill.

Program Assumptions

Equilibration Option A

- The current base acreage system is replaced with a normal crop acreage (NCA) system. Government payments are based on actual plantings, and there is no 0-92 program.
- A soybean marketing loan of \$6.22 per bushel is made available on 60-65 percent of production. The target prices for oats and barley are increased by 50 and 15 percent, respectively.
- Acreage reduction program (ARP) rates and other program provisions remain at baseline levels.

Equilibration Options B and C

- ARP rates are increased to offset elimination of the 0-92 program, and the soybean marketing loan rate is reduced according to a formula. Under Option C, all support prices are reduced by 1 percent. Other program assumptions are the same as under Option A.

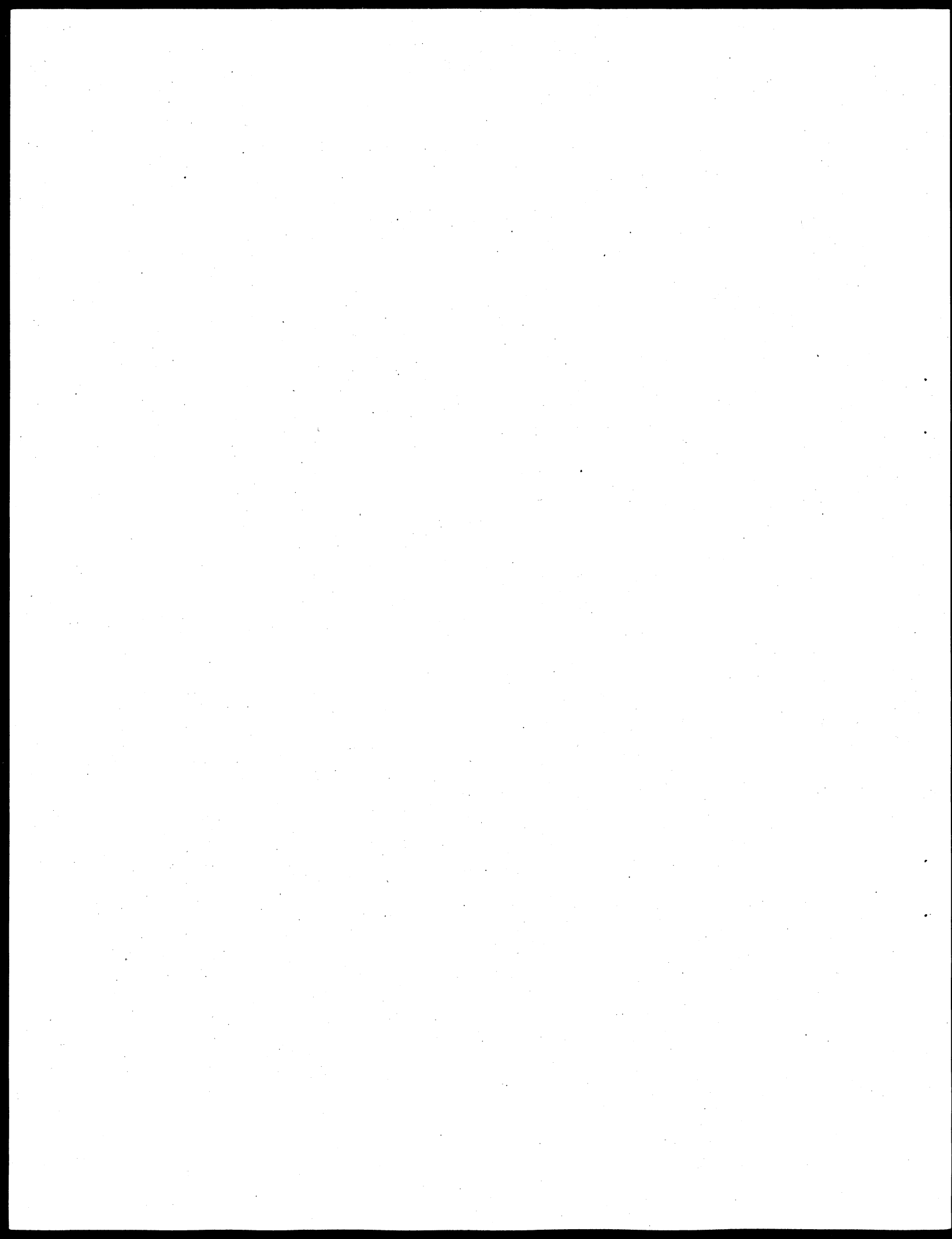
Results

Equilibration Option A

- Eliminating the 0-92 program results in an increase in planted area for all major crops.
- Production of soybeans, oats, and barley increases significantly in response to higher support levels.
- For eight major crops, total net returns above variable production costs are unchanged from baseline levels. Lower market prices offset higher government payments.
- Net outlays by the Commodity Credit Corporation (CCC) exceed baseline levels by an average of \$3.4 billion.

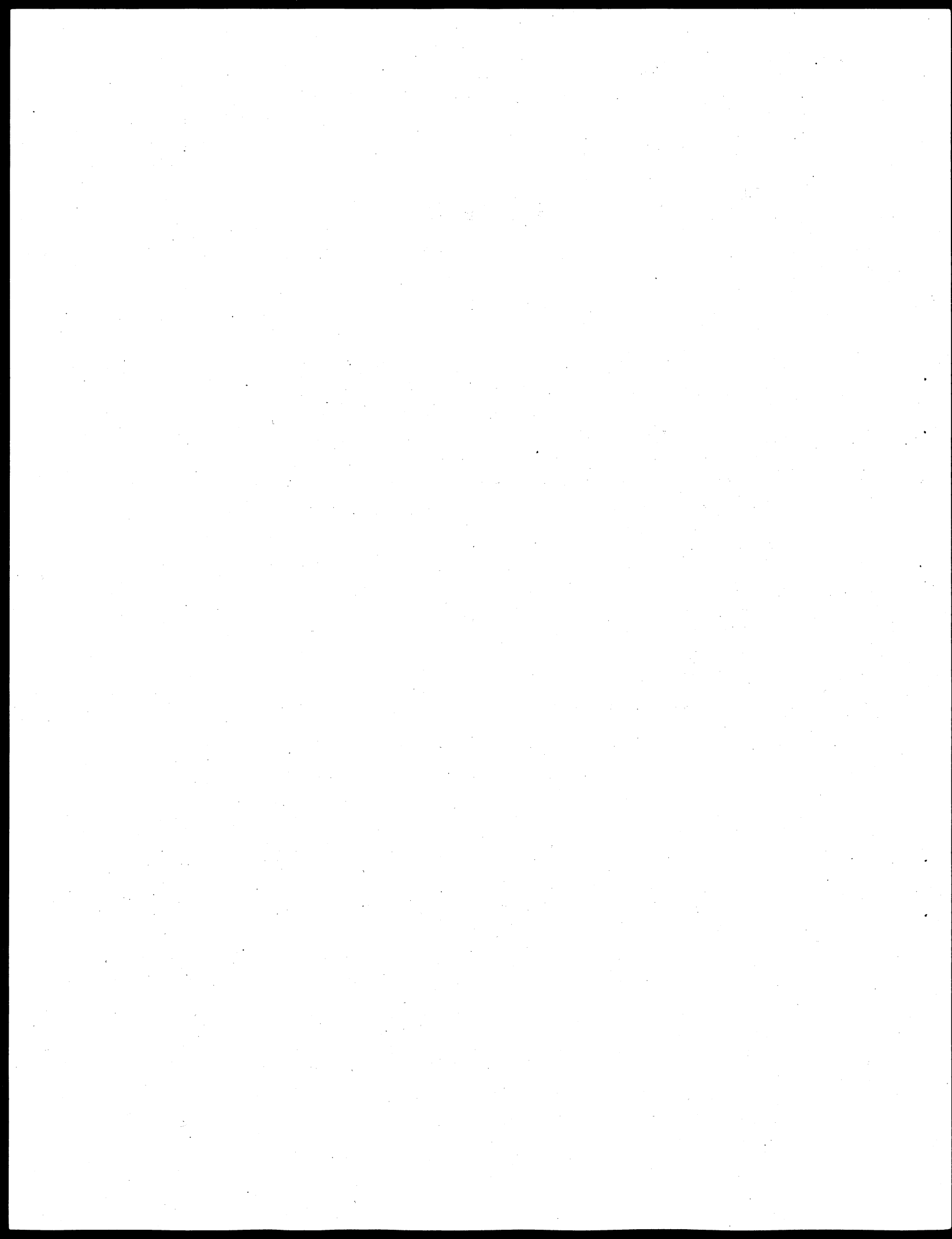
Equilibration Options B and C

- Total planted acreage exceeds baseline levels only slightly.
- Net returns fall slightly under Option B because of higher ARP rates. They fall further under Option C because of reduced target prices.
- Net CCC outlays exceed baseline levels by an average of \$0.5 billion per year under Option B, and return to baseline levels under Option C.



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An Evaluation of Price Support Equilibration Options for the 1990 Farm Bill

Introduction

Two concerns commonly expressed during debate on the 1990 farm bill are that current commodity programs are too inflexible, and that they are biased against producers of certain crops. A wide variety of proposals has been put forth to address the flexibility issue, ranging from a complete decoupling of government payments and current production decisions to an expansion of the flexibility provisions in current law. Other proposals call for a realignment of support prices to eliminate perceived biases in current programs.

The normal crop acreage (NCA) system of the late 1970s provided farmers with more flexibility than that given under current programs. There were no binding base acreage constraints for individual crops, so farmers could more easily adjust planting decisions than under current law. Unlike the decoupling proposals, the NCA system required farmers to produce a crop to receive deficiency payments. To those who oppose decoupling because it would result in transparent "welfare" payments to producers, this is an important point. Several groups have proposed a revival of the NCA approach, although each group recommends some changes in how the system is implemented.

Realigning support prices is seen as important by some for reasons of both equity and practicality. For example, corn producer income is protected by target prices that are set at a high level relative to the soybean loan rate. This has implications for equity, and it also means that soybean production is discouraged, even when soybean market prices are high relative to corn market prices. Providing additional income support for soybean production would address equity concerns and help make the United States more competitive in world soybean markets. Likewise, producers of barley and oats contend that target prices for those commodities are too

low relative to target prices for wheat and corn. Realigning support prices is particularly important under an NCA approach, it is argued, because farmers would "chase deficiency payments" if current base restrictions were relaxed and current support prices maintained.

This report examines the consequences of equilibrating support prices by comparing four alternative policy scenarios:

1. A continuation of current agricultural policies. Crop-specific base acreages and acreage reduction programs remain in effect. Limited flexibility is provided by the 0-25 program, which allows farmers to plant oilseeds on up to 25 percent of their program acreage base without affecting their future payment base. Target prices are frozen for all commodities at 1990/91 levels. This scenario represents the March 1990 baseline by the Food and Agricultural Policy Research Institute (FAPRI), and it is intended to represent the results of extending the 1985 Food Security Act.

2. A price support equilibration program with baseline acreage reduction program rates. A normal crop acreage system is established. Provided they comply with set-aside provisions, farmers receive deficiency payments determined by actual planted area, rather than historical bases for individual commodities. There is no 0-92 program. Soybean producers qualify for a marketing loan of \$6.22 per bushel on 60-65 percent of their production. Oat and barley target prices are increased by 50 percent and 15 percent, respectively. All other target prices and program provisions remain at baseline levels. This is referred to as Equilibration Option A.

3. A price support equilibration program with increased acreage reduction program rates. Rates for the acreage reduction program (ARP) are increased by 2.5 percent for

feed grains, wheat, and cotton (5 percent for rice) to offset the effect of eliminating the 0-92 program. This results in a reduction in the soybean marketing loan rate, to \$6.05 per bushel on 65 percent of production, given the assumed formula. All other program provisions are the same as under Option A. This is referred to as Equilibration Option B.

4. A price support equilibration program with increased acreage reduction program rates and reduced target prices. Support prices for all commodities (including soybeans) are reduced by 1 percent from the levels of Options A and B in order to reduce government program costs. All other program provisions are the same as under Option B. This is referred to as Equilibration Option C.

The next section of the report defines each of the scenarios in detail. The following section discusses the consequences for U.S. agriculture of each of the policy options. Next, qualifications and the sensitivity of the results to particular assumptions are discussed. The last section summarizes the analysis and discusses implications for the 1990 farm bill debate.

Policy Options

The FAPRI baseline is contingent on a series of assumptions about agricultural policies, the general economy, weather, and technological change. FAPRI Staff Report #1-90 details these assumptions and presents important results for U.S. agriculture for marketing years 1989/90 to 1998/99. *Table 1* compares key program assumptions of the baseline to those used in each of the other policy scenarios. More specific information about program parameters is reported in *Appendix Table A.1*.

FAPRI Baseline

The agricultural outlook prepared by FAPRI as a benchmark for alternative policy analysis assumes a continuation of current agricultural policies by the major trading nations of the world. U.S. target prices are frozen at 1990/91 levels, and current formulas determining loan

rates and dairy support prices remain in effect throughout the projection period. The same assumptions also hold true at the world level; therefore, support prices in the European Community and Japan are also frozen after 1990.

Planting flexibility is limited for participants in U.S. government programs. The current base acreage system is continued, meaning there are crop-specific bases that are determined by a moving average of acreage planted and "considered planted." Acreage considered planted includes land idled under the acreage reduction program and the 0-92 and 50-92 programs, as well as land planted to oilseeds under the 0-25 program. The ARP programs limit plantings of particular crops, and they require farmers to idle acreage in order to qualify for deficiency payments and other farm program benefits.

Baseline program provisions can be illustrated by the case of a typical midwestern corn and soybean farmer. This farmer owns 400 acres, of which 200 acres are corn base. If there is a 10 percent ARP in effect, the farmer must idle 20 acres and plant no more than 180 acres of corn in order to receive program benefits. Prior to the introduction of the 0-25 program, planting fewer than 180 acres of corn would have resulted in a reduced payment base in future years. The farmer was almost "forced" (due to the high opportunity cost of not participating in the government program) to plant 200 acres of soybeans and 180 acres of corn, and to idle 20 acres. With the 0-25 program, planting up to 25 percent of the corn base to soybeans incurs no future base penalty, although current corn deficiency payments on those acres are forfeited.

A series of other assumptions underlies the FAPRI baseline projections. It is assumed that Commodity Credit Corporation (CCC) and Farmer-Owned Reserve (FOR) stocks will continue to be managed under current rules and management strategies. By 1991, the conservation reserve is assumed to reach the 40 million acres targeted by the Food Security Act of 1985, even though current enrollment is 34 million acres and no new enrollment periods

Table 1. Program assumptions of alternative policy strategies

Policy Instrument	Baseline	Equilib. Option A	Equilib. Options B & C
Base acreage	Continuation of current base acreage system: crop-specific bases determined by planting history	Normal crop acreage system: NCA equals sum of current crop bases and oilseed area	Same as Option A
Permitted flexibility	Continuation of current 0-25 program for oilseeds, but no additional flexibility	Farmers may plant any program crop or oilseed within their NCA, but they must comply with set-aside requirements and must plant the crop to receive deficiency payments	Same as Option A
Acreage reduction programs	Continuation of current programs	Set-aside rates expressed as a proportion of planted, not base, acreage; set-aside rates equivalent to baseline ARP rates	Same as Option A, except set-aside rates increased by 2.5 percent for feed grains and wheat; 5 percent for rice
0-92 program	Continuation of current program	No 0-92 program	No 0-92 program
Target prices	Frozen at 1990 levels	Same as baseline, except the barley and oats target prices are increased by 15 and 50 percent, respectively	Option B: same as Option A Option C: all target prices reduced 1 percent from Option A
Soybean marketing loan program	No soybean marketing loan	\$6.22 per bushel, available on 60-65 percent of production, depending on stock levels	Option B: \$6.05 on 65 percent Option C: \$5.98 on 65 percent

have been announced. Program yields continue to be frozen. Average weather is assumed to prevail in every year of the projection period, and historical rates of technological change are assumed to continue. After slow growth in 1990, the general economy is assumed to grow at a modest pace, while inflation remains in check. Political changes in Eastern Europe and the Soviet Union are not assumed to result in any dramatic changes in agricultural trade. No impacts of a possible GATT agreement are included in the baseline.

Equilibration Option A

The equilibration options establish a normal crop acreage system and realign support prices. Each farm is assigned an NCA equal to the sum of the acreage bases for individual program crops and historical plantings of oilseeds. Farmers may plant any crop within their NCA, but deficiency payments are made only on land that is actually planted. This is in sharp contrast to the Bush administration's proposal, which makes deficiency payments determined by historical bases regardless of whether or not the crop is actually produced. No 0-92 program is assumed under the equilibration options, since the 0-92 program makes payments on land that is not planted.

In the baseline, acreage reduction program (ARP) requirements are expressed as a proportion of base acreage. Under the equilibration options, set-aside rates are expressed as a proportion of the area planted to particular crops. Thus, farmers may choose to plant more than their historical base of a particular crop, but they must increase land-idling proportionately to qualify for program payments. In Option A, set-aside requirements are set at levels equivalent to the ARP rates under the baseline. For example, the baseline ARP rate for corn is 10 percent. The equivalent set-aside rate is 11.1 percent, and that is the level of set-aside assumed under Option A. Hereafter, set-aside rates under the equilibration options are expressed in ARP equivalents to facilitate comparisons to baseline levels.

A marketing loan is made available for soybeans, at a level determined by target prices and set-aside rates for corn and cotton. For corn, multiplying a \$2.75 per bushel target price by 0.9 (to account for a 10 percent ARP requirement), and the result by 2.5 (an assumed "normal" relationship between soybean and corn prices), yields a soybean-equivalent price of \$6.19 per bushel. For cotton, multiplying \$0.729 per pound by 0.875 (given a 12.5 percent ARP), and the result by 10, yields a soybean-equivalent price of \$6.38. Taking a weighted average of the two based on ratios of planted area yields a marketing loan rate of \$6.22 to provide "equity" with the corn and cotton programs. This is the same formula proposed by the American Soybean Association (ASA) in its Graduated Equity Loan proposal.

The soybean marketing loan is made available on a proportion of production determined by projected levels of carryover stocks. If stocks are less than 250 million bushels, the loan is available on 75 percent of production. For 250-300 million bushels, the proportion is 70 percent; for 300-350 it is 65 percent; and for more than 350 million bushels it is 60 percent. This inverts the stock-trigger mechanism proposed by the ASA, thus stabilizing government expenditures by making the producer bear more of the risk when market prices fall. Given analysis results, soybean producers receive the \$6.22 marketing loan on 65 percent of their production in 1991/92 and 1992/93, and 60 percent from 1993/94 to 1995/96.

Barley target prices are increased 15 percent above baseline levels, to \$2.72 per bushel. This brings barley participant net returns more in line with returns from the wheat program, but it keeps the barley target price slightly below the corn target price of \$2.75 per bushel. The oat target price is increased by 50 percent, to \$2.17 per bushel. Such a large increase is required to bring oat participant net returns into line with returns to competing crops.

The equilibration program gives the aforementioned typical midwestern farmer a variety of alternatives. With a 10 percent ARP in effect, the farmer could choose to plant 180 acres of corn and 200 acres of beans and to idle 20

acres, as before. The farmer would receive corn deficiency payments on 180 acres and would be guaranteed the \$6.22 marketing loan on 65 percent of his or her soybean production. A farmer who wanted to plant only corn could plant 360 acres, idle 40, and receive corn deficiency payments on all 360 acres planted. Alternatively, the farmer could plant all 400 acres to soybeans and qualify for the marketing loan on 65 percent of production, but receive no corn deficiency payments. None of these decisions would affect payments in future years.

Under Option A, all other policy, weather, technological, and macroeconomic assumptions are held at baseline levels. This means that no changes in stock management, the conservation reserve, export programs, or other policies are incorporated in this analysis.

Equilibration Option B

Option B entails all the same assumptions as Option A, except set-aside rates are increased to offset some of the effects of eliminating the 0-92 program. For wheat, feed grains, and cotton, ARP rates are increased by 2.5 percent above the levels of the baseline and Option A. For example, the feed grain ARP rate is increased to 12.5 percent, from 10 percent in the baseline and under Option A. Since proportionally more 0-92 acres come from rice than from the other crops in the baseline, the rice ARP rate is increased by 5 percent--from 15 percent in the baseline and under Option A--to 20 percent under Option B.

Since the formula to determine the soybean marketing loan rate incorporates set-aside rates, the increased idling requirements reduce the marketing loan rate to \$6.05 per bushel. Given the resulting carryover stock levels, the \$6.05 marketing loan is available on 65 percent of soybean production in every year. Target prices and all other program assumptions are held at baseline levels.

Equilibration Option C

Option C utilizes all the assumptions of Option B, except all target prices and the

soybean marketing loan rate are reduced by 1 percent from the levels of Option B. This is done so that the average budgetary cost of the program over the life of the farm bill is the same as under the baseline. Political and budgetary realities may make it difficult to pass a farm bill costing more than current legislation, so Option C is intended to provide information about the effects of a budget-neutral equilibration program.

Results

Each of the policy alternatives was analyzed using the FAPRI agricultural modeling system over the period 1991/92-1995/96, the expected duration of the 1990 farm bill. The analysis focuses on the consequences of each option for the U.S. crop sector in terms of acreage, production, trade, prices, producer returns, and government budgetary costs. The figures included in this section indicate average changes from the baseline for each of the equilibration options. Annual estimates for the baseline and the three equilibration options are reported in the appendix tables.

Crop Acreage and Production

Three factors account for most of the shifts in acreage and production under the equilibration options relative to the baseline:

1. **Changing to an NCA system** in and of itself allows some acreage shifts to take place. Eliminating individual crop bases means that some of the constraints inhibiting acreage shifts in the baseline are eliminated. Although these changes may be very important to individual farmers, the impact on national acreage of the shift to an NCA system by itself is relatively small.

2. **Eliminating the 0-92 program** results in a significant overall reduction in idled area, if ARP requirements are maintained at baseline levels. Much of the land idled under the 0-92 program is not very productive, and some of that land might not be planted even if the program were to be eliminated. However, its elimination

does contribute to an overall increase in planted area and production. An increase in ARP rates increases idled area, but the land removed from production is not the same as that in the 0-92 program.

3. Increasing support prices for soybeans, barley, and oats has a significant impact on the mix of crops planted. Not surprisingly, land tends to shift into production of crops with increased support prices. The NCA permits larger acreage shifts due to support price changes than would be possible if the current base acreage system were maintained.

Except for barley and oats, only marginal changes in program participation rates are estimated under the equilibration options (*Appendix Table A.2*). Lower market prices than under the baseline encourage modest increases in participation rates under Option A relative to the baseline. Higher set-aside rates reduce program participation under Option B, and reduced target prices contribute to a further reduction under Option C. Participation rates of barley and especially oats increase sharply in response to higher target prices.

Under Option A, the total amount of land idled under annual government programs falls by an average of 5.7 million acres (29.2 percent) from the baseline level (*Figure 1* and *Appendix Table A.3*). This is approximately the number of acres idled by the 0-92 program in the baseline. Total area planted to 15 principal crops increases by 4.6 million acres (1.7 percent). The increase in planted acreage is less than the reduction in idled acreage. This is primarily because of slippage--much of the 0-92 land would not be planted even if the program were eliminated. In fact, the increase in planted area would have been even smaller had it not been for the increase in support prices for soybeans, barley, and oats.

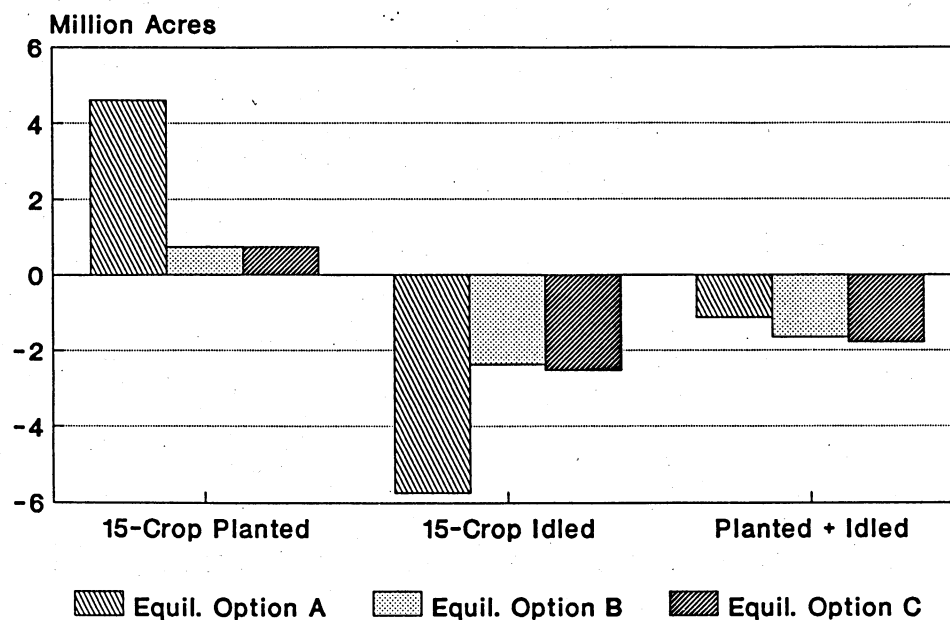
Under Options B and C, the amount of area idled remains greater than under Option A because of the increase in ARP rates. This and the corresponding reduction in the soybean marketing loan rate result in less planted area than under Option A, with total planted area less than one million acres above baseline levels.

Among individual crops, the largest absolute increase in planted area is for soybeans, although the proportional change in barley and oats acreage is larger (*Figure 2*). For barley and oats, the effect of higher target prices on producer returns and planted acreage is clear. For soybeans, the net effect of the marketing loan program on producer net returns is relatively small on average, but in some years the effect is much larger. The marketing loan also reduces the variability of returns. These factors, along with the reduction in area idled by government programs and the increase in producer flexibility caused by the NCA, all contribute to the increase in soybean acreage.

Under Option A, the acreages for corn, wheat, cotton, sorghum, and rice also increase from baseline levels, because the effect of eliminating the 0-92 program dominates the effect of acreage shifting to soybeans, barley, and oats. Under Options B and C, the higher ARP rates result in modest reductions from baseline levels in the area planted to corn, wheat, and cotton, and significant reductions from levels of Option A for all crops. Sorghum acreage remains above baseline levels under Options B and C, because the 0-92 program accounts for a higher proportion of sorghum base acreage in the baseline. The 1 percent difference in support prices between Options B and C has minimal effects on planted area.

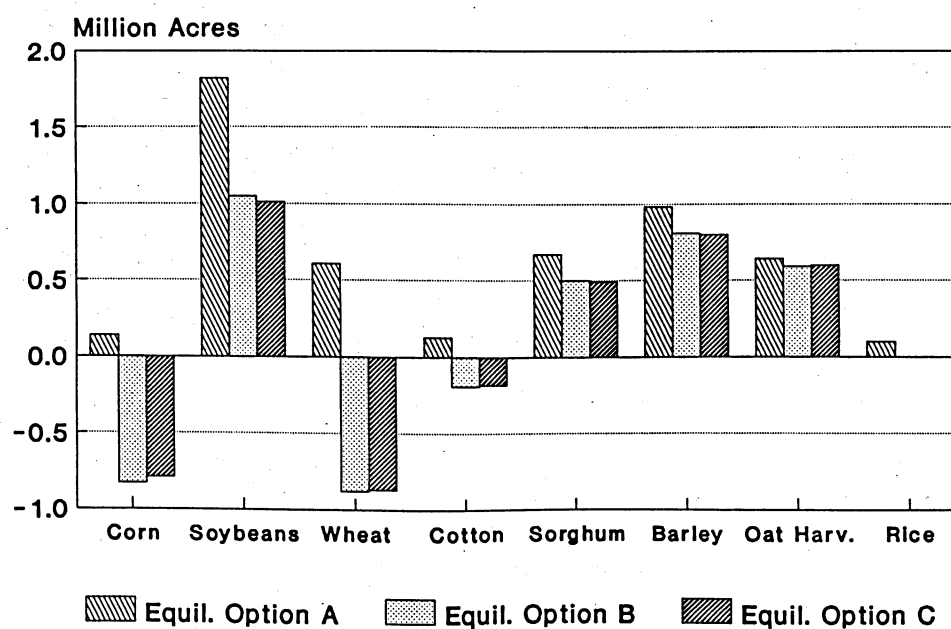
Changes in crop production under the various options generally follow the changes in acreage, as estimated yield changes are very small (*Appendix Table A.4*). Generally speaking, production changes are proportionally smaller than acreage changes, because average yields tend to increase when area decreases (as marginal land leaves production) and to decrease when area increases. The estimated effects on yield presume that program yields remain frozen under the equilibration options, as they are in the baseline. If program yields were tied to a moving average of proven yields (as they were prior to the 1985 Food Security Act), farmers would have strong incentives to increase input usage and yields to increase future program payments.

Figure 1. Land Use
Absolute Change from Base, 1991-95 Avg.



Source: Appendix Table A.3

Figure 2. Planted Acreage
Absolute Change from Base, 1991-95 Avg.



Source: Appendix Table A.3

Trade

Current agricultural policies are often blamed for lost U.S. competitiveness in world markets for soybeans, barley, and oats. It is argued that constraints on base acreage and misaligned support prices limit U.S. production, thus reducing foreign demand and encouraging competitors to increase supplies. Soybean markets lost to Argentina and Brazil, barley markets lost to the European Community, and increasing oat imports by the United States are all seen as symptomatic of the problem with current programs.

Exports of soybeans, soybean products, and barley all increase under the equilibration options in response to increased production and lower market prices (*Figure 3* and *Appendix Table A.5*). The largest proportional change is for barley, because barley exports are very sensitive to relative grain prices, and the equilibration options significantly reduce the price of barley relative to wheat and corn. The absolute increase in soybean sector exports is also significant, as a sharp drop in soybean prices results in a 3 percent reduction in South American soybean production from baseline levels under Option A. Oat imports fall in response to increased domestic supplies, but the United States remains a significant importer of oats because of relatively inelastic export supplies by other countries. Under Option A, corn and wheat exports are almost the same as under the baseline; modest price declines for those commodities are offset by even sharper declines in prices of barley, soybeans, and other competing products. Under Options B and C, higher corn and wheat prices result in lower exports. Sorghum prices fall relative to corn, so sorghum exports increase under all the equilibration options. Cotton and rice exports increase under Option A because of lower prices, but cotton exports fall below baseline levels under Options B and C.

The total volume of agricultural exports under Option A exceeds the baseline level by 1.7 percent (*Figure 4*). Lower prices, however, result in a 3 percent decline in the value of exports. Under Options B and C, both the volume and the

value of U.S. exports of 10 principal commodities are essentially unchanged from baseline levels. Although the equilibration options make the United States more competitive in world markets for certain commodities, that does not translate into an improved trade balance as measured in value terms.

Commodity Prices

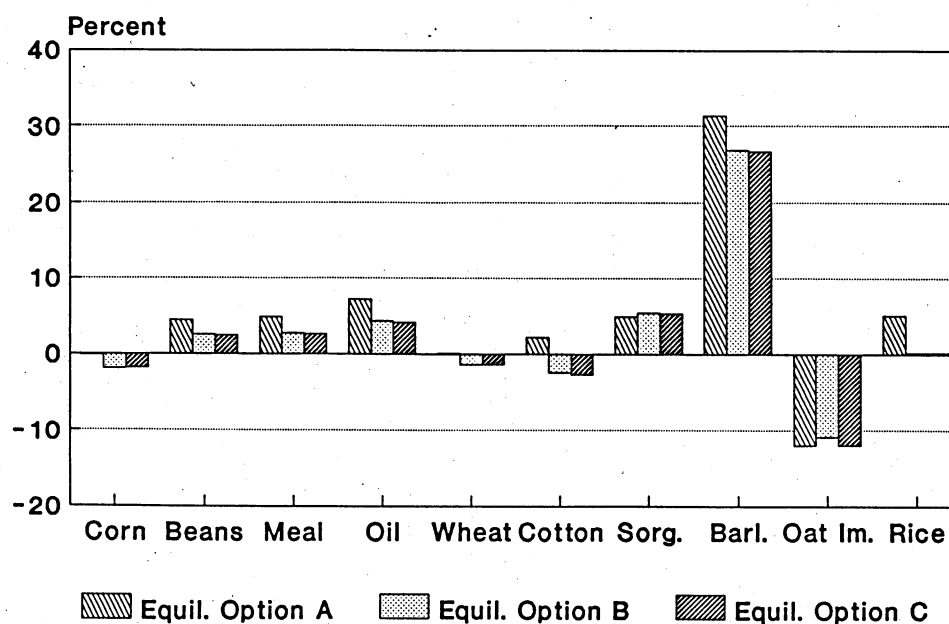
The increase in total acreage and production under Option A results in a reduction in market prices for all commodities (*Figure 5* and *Appendix Table A.6*). In proportional terms, market prices for oats fall most dramatically, which is not surprising given the large increase in the oat target price and in oat production. Average soybean and barley prices each fall by approximately 10 percent from baseline levels under Option A.

Under Options B and C, lower production levels result in market prices higher than those under Option A. Corn, wheat, and cotton prices exceed baseline levels. Oat, barley, and soybean prices remain well below baseline levels, however. The changes in soybean prices are large relative to changes in production, because within the FAPRI modeling system U.S. and foreign demand for soybeans and soybean products is not extremely responsive to price changes.

Producer Net Returns

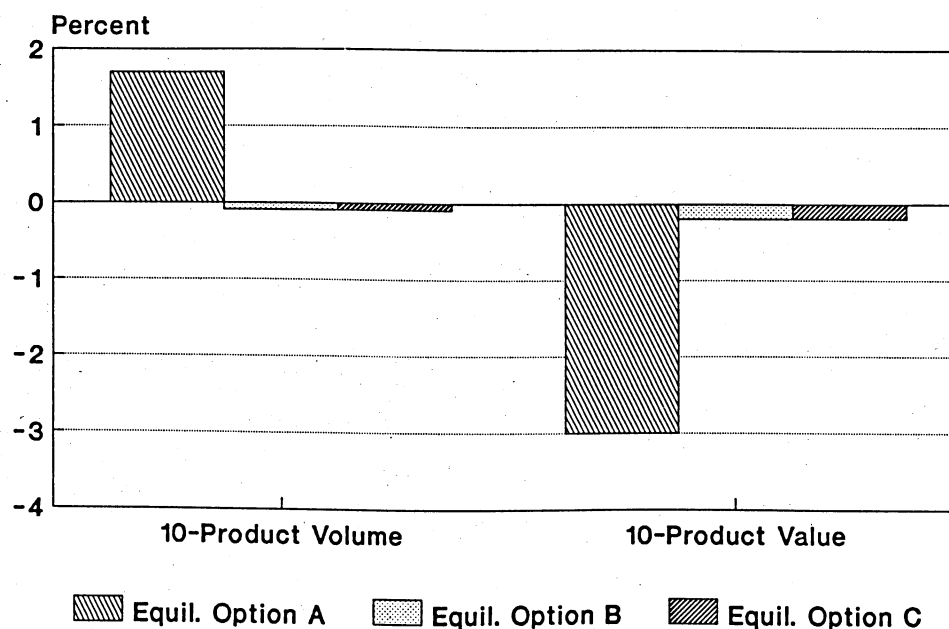
Producer net returns over variable production costs can be used as a crude measure of the benefits of alternative policies to producers. Three different measures are used here: market net returns per planted acre, participant net returns per base acre, and total sectoral net returns. Market net returns are figured simply as the value of production minus the variable cost of production. Participant net returns include deficiency payments and take land-idling requirements into account. Sectoral net returns sum up the returns for all participants and nonparticipants.

Figure 3. Export Volumes
Percent Change from Base, 1991-95 Avg.



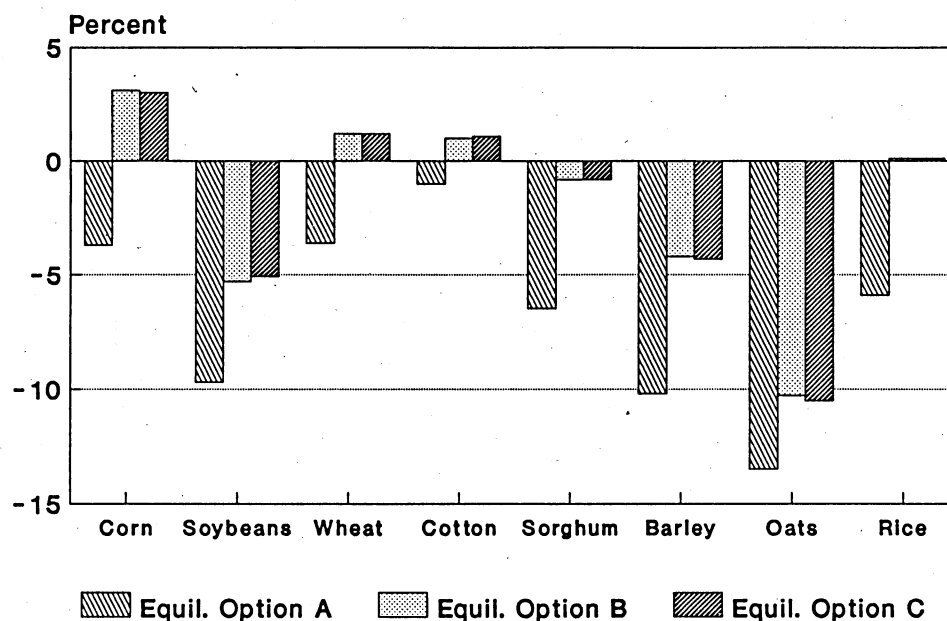
Source: Appendix Table A.5

Figure 4. Total Exports
Percent Change from Base, 1991-95 Avg.



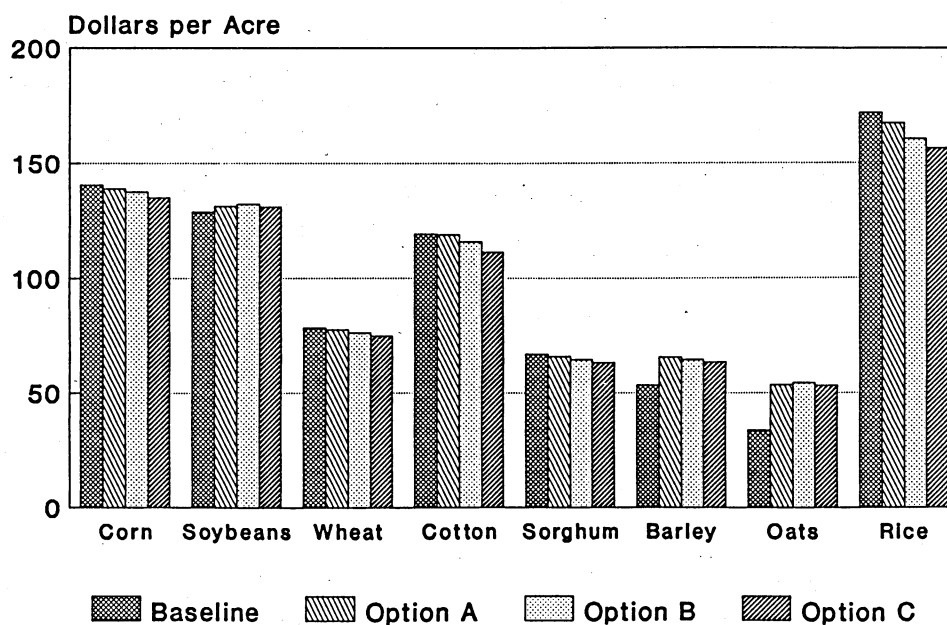
Source: Appendix Table A.5

Figure 5. Market Prices
Percent Change from Base, 1991-95 Avg.



Source: Appendix Table A.6

Figure 6. Participant Net Returns
1991-95 Avg.



Source: Appendix Tables A.8 and A.7

In a decoupled program, market net returns would drive all production decisions. Under the equilibration options examined here, however, market net returns only determine planting decisions by nonparticipants in government programs. Market net returns change in the same direction as market prices for all commodities and equilibration options.

Net returns on soybeans are included in the table summarizing nonparticipant net returns (*Appendix Table A.7*) because there is no element of choice in participation in soybean programs, at least not in the baseline. All farmers qualify for the soybean marketing loan under the equilibration options, and for purposes of computing net returns, it is assumed that all take advantage of it. Soybean net returns increase only slightly under the equilibration options, despite a marketing loan set at a level considerably higher than baseline market prices. This occurs because the marketing loan is available only on 60-65 percent of production, and because market prices fall from baseline levels.

A comparison of participant net returns drives production decisions under the equilibration options. Because the 0-25 program allows producers to expand soybean production on corn base acreage, corn participant returns and soybean net returns differ by an average of only \$12 per acre in the baseline. Under the equilibration options, that difference is narrowed even further (*Figure 6* and *Appendix Tables A.7* and *A.8*). As they were designed to do, the equilibration options narrow the differences between average participant net returns for wheat, barley, and oats. Participant net returns per acre planted or idled are lower under Option B because of increased set-aside requirements. Further reduction under Option C is attributable to the reduction in deficiency payments caused by lower target prices.

Total net returns for all participants and nonparticipants increase under Option A for soybeans, barley, and oats, but they fall relative to the baseline for all other commodities (*Appendix Table A.9*). The average increase in soybean net returns is almost exactly offset by a corresponding decline in corn net returns.

Likewise, the average increase in barley and oat net returns is offset by lower wheat net returns. For the eight major crops, total producer net returns are essentially unchanged from the baseline.

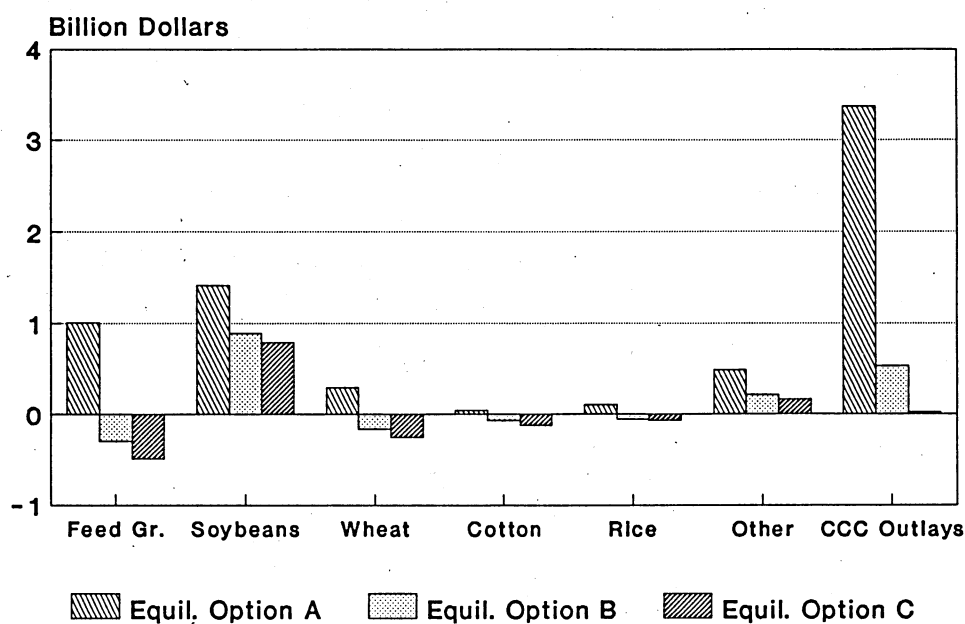
Under Option B, higher set-aside rates increase market prices and nonparticipant net returns relative to Option A, but they reduce participant net returns. The net result is a very small decline in aggregate net returns. Reducing target prices and the soybean marketing loan rate has little effect on market outcomes, but it does reduce producer net returns. Even under Option C, however, the average decline in producer net returns is only \$630 million (2.3 percent).

Government Costs

In the FAPRI baseline, net CCC outlays average \$10 billion per year between fiscal year 1992 and fiscal year 1996. Average net outlays increase by \$3.37 billion (33.7 percent) under Option A (*Figure 7* and *Appendix Table A.10*). Net soybean program costs increase by \$1.42 billion because of the marketing loan program. Feed grain costs increase by more than one billion dollars, in part because of the increase in the oat and barley target prices, but primarily because increased production reduces corn market prices and increases deficiency payments. Wheat, cotton, and rice expenditures also increase in response to more production.

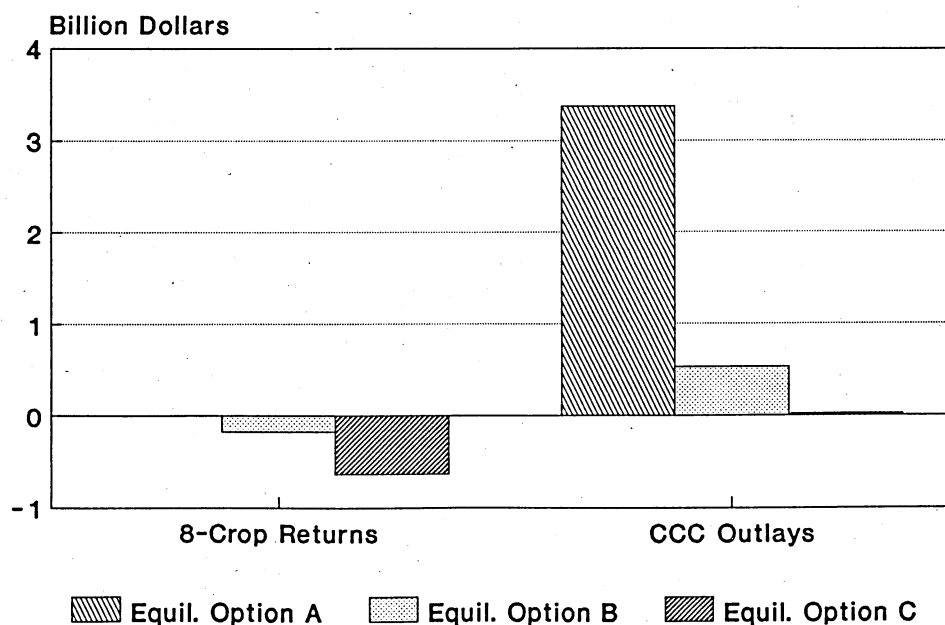
Under Option B, the increase in set-aside rates results in less production being eligible for deficiency payments, and payment rates are reduced by higher market prices. Soybean marketing loan expenditures fall relative to Option A because of the lower marketing loan rate and higher soybean prices. Net CCC outlays fall dramatically from the levels of Option A, but they continue to exceed baseline levels by an average of \$530 million per year. Soybean program costs continue to exceed baseline levels by \$890 million per year, but the feed grain, wheat, cotton, and rice programs all exhibit net savings. Among the feed grains, corn program costs fall by an average of \$610 million relative

Figure 7. Net CCC Outlays
Absolute Change from Base, FY92-96 Avg.



Source: Appendix Table A.10

Figure 8. Net Returns and Gov't Costs
Absolute Change from Base, 5-Yr. Avg.



Source: Appendix Tables A.9 and A.10

to the baseline, while barley and oat program costs increase by \$320 million.

Reduced target prices under Option C result in further savings. All program costs decline relative to Option B, and average net CCC outlays return to baseline levels. Soybean, barley, and oat expenditures continue to exceed those under the baseline, but they are offset by reduced expenditures for corn, wheat, cotton, and rice.

The trade-offs between producer net returns and government costs are illustrated in *Figure 8*. Under Option A, average producer net returns for eight major crops are essentially unchanged from baseline levels, while government costs increase by more than three billion dollars. Under Option B, there is a very small decline in producer net returns, and government costs are only slightly above baseline levels. Under Option C, net returns fall by an average of \$630 million relative to the baseline, while government costs are essentially the same as in the baseline.

The unfavorable trade-off between crop producer net returns and government costs under Option A is attributed primarily to the increase in total area planted. When total area planted returns to approximately the levels of the baseline under Options B and C, the trade-offs are not as undesirable. It also should be noted that including livestock producer returns in the equation would change the picture somewhat. Feed prices are substantially lower in Option A than under the baseline, and that would tend to increase livestock sector profitability, at least in the short run. In the longer run, it would result in lower consumer costs for meat.

Qualifications and Sensitivity

Results of this analysis must be interpreted with caution. Many of the important results are very sensitive to particular assumptions made in preparing the baseline projections or in analyzing the flexibility options. The following is a partial list of qualifications:

1. Elimination of the 0-92 program. If one of the objectives of the equilibration program is to avoid appearances of decoupling by requiring farmers to produce a crop to receive payments, the program would seem to be inconsistent with the continuation of 0-92. However, it is bringing some of that 0-92 land back into production that contributes most to lower market prices and higher program costs under Option A. If the program were changed so that much of the 0-92 land could be kept out of production (perhaps through an annual conservation program where farmers would submit bids to remove marginal land from production for one or more years), it might not be necessary to increase ARP rates to restrain program costs.

2. Variability. The FAPRI baseline assumes average weather in every year of the projection period, and there are no other factors built into the baseline that would result in wide swings in supply, demand, or prices from one year to the next. In the real world, of course, markets will show more variation. This is especially the case now, as levels of stocks stand sharply reduced from levels of the mid-1980s. For example, suppose that weather variability were introduced into the analysis. In years with good weather, large crops, and low prices, the soybean marketing loan would cost the government much more than it would in years with poor weather, small crops, and high prices.

Taking period averages may not solve the problem, because the response of government costs to weather extremes is not symmetric. With soybeans, for instance, costs of the marketing loan program will be essentially zero whenever there is a poor crop, whether the resulting market price is \$6.50 per bushel or \$8.00 per bushel. However, marketing loan program costs will differ sharply when there is a large crop, depending on whether the resulting market price is \$4.00 or \$5.00. Incorporating weather variability, therefore, is likely to increase the average cost of the soybean marketing loan, although its effect on other equilibration program costs is less clear.

3. Export demand. Results are sensitive to both the level and price-responsiveness of export demand. Suppose, for example, that world

demand for soybeans was much stronger in the baseline, so that the baseline U.S. soybean price averaged \$6.50 per bushel. Then there would be little or no government cost associated with introducing a \$6.22 per bushel marketing loan. The price-responsiveness of export demand also plays an important role in determining model results, since it strongly affects the relationship between changes in production and prices. In the FAPRI modeling system, U.S. export demands for soybeans, soybean products, wheat, and corn are not highly responsive to changes in commodity prices, particularly when all prices move in the same direction. This means that small changes in production are associated with relatively large changes in prices and small changes in U.S. exports.

The export response in the FAPRI modeling system is determined by models of supply and demand response in important trading countries that are all linked to U.S. prices and exports. While the models are comprehensive, there is always some uncertainty about true underlying behavior, particularly in the long run.

4. Foreign policy response. The equilibration proposal resembles in some respects the "rebalancing" proposal made by the European Community at the GATT negotiations. The EC proposal would allow increased protection of the EC oilseed market in exchange for reduced supports for major grains. The United States has firmly opposed rebalancing, insisting that the European Community continue to allow duty-free importation of soybeans. By increasing protection of the U.S. soybean industry, the equilibration proposal may weaken the U.S. negotiating position against rebalancing.

If the European Community were to retaliate by establishing a variable levy system for soybeans, the result would be a reduction in U.S. soybean exports and prices. The FAPRI analysis reported here assumes no retaliation.

5. Other policy assumptions. For purposes of this analysis, all program assumptions not related to producer flexibility or support prices were held at baseline levels. Changing stock management policies, loan rate formulas, conservation reserve enrollment, or a

variety of other policies not only would change the levels of key variables reported here for each of the equilibration options but also could change the differences among the different options.

Summary and Conclusions

This report has examined just one set of proposals to provide producers more flexibility while realigning price supports. Flexibility has wide political appeal, and some form of flexibility is likely to find its way into the 1990 farm bill, but there is very little agreement about what form that flexibility should take. Likewise, there is wide perception that current support prices are misaligned, but there is no consensus about which crops are most deserving of increased supports. This is particularly true in a budgetary environment that almost requires that any additional expenditures on one program be offset by savings elsewhere.

The particular equilibration options examined provide a variety of benefits, including income insurance for producers of soybeans, oats, and barley and increased competitiveness in world markets for those commodities. However, the first option examined resulted in a large increase in budgetary expenditures, and none of the options resulted in greater producer net returns simultaneous to fewer government program costs.

The analysis has highlighted a number of the program provisions that determine major results:

1. Eliminating the 0-92 program results in a significant increase in government program costs if nothing is done to offset the reduction in idled land. Increasing ARPs can reduce program expenditures, but it also takes more high-quality land out of production, thereby reducing the net returns of the producers who farm the land best suited to crop production.

2. The soybean marketing loan increases and stabilizes producer returns per bushel at the expense of increasing and destabilizing government costs. Given the FAPRI baseline, the cost of a \$6.22 marketing loan on 60-65 percent of production is significant, but not

explosive. However, costs could be much higher if demand fell or supplies increased, and they could be much lower if demand strengthened or supplies fell.

3. Technically speaking, net returns can be significantly redistributed among producers

of different products without significantly affecting total returns or total budgetary costs. A more difficult question is, Is it politically possible to take money away from producers of corn, wheat, and sorghum to provide more money for producers of soybeans, barley, and oats?

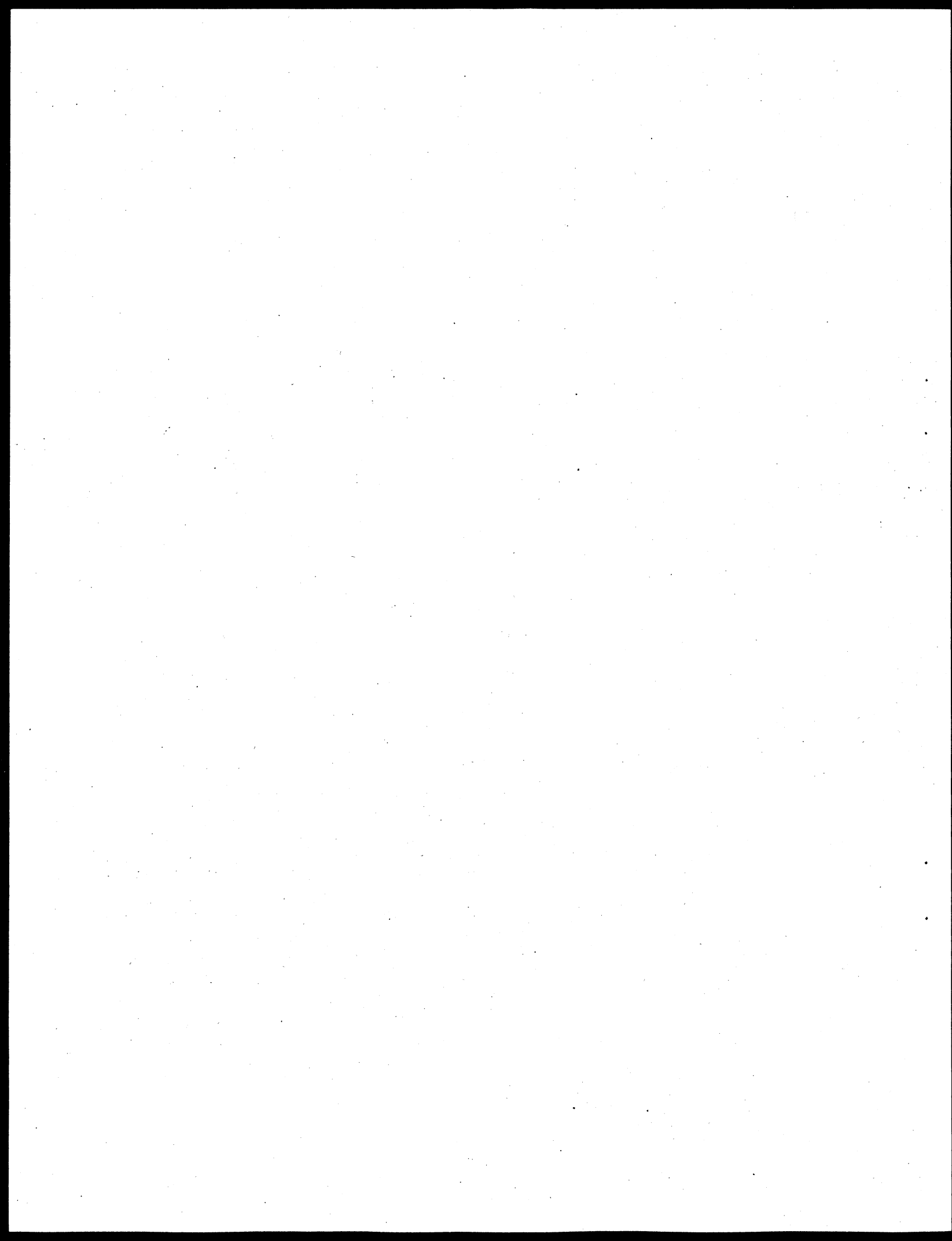


Table A.1. Domestic policy assumptions

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							Absolute	Percent
<hr/>								
Corn Target Price	(Dollars per bushel)							
Baseline	2.75	2.75	2.75	2.75	2.75	*	2.75	
Equil. Option A	2.75	2.75	2.75	2.75	2.75	*	2.75	0.00 0.0
Equil. Option B	2.75	2.75	2.75	2.75	2.75	*	2.75	0.00 0.0
Equil. Option C	2.72	2.72	2.72	2.72	2.72	*	2.72	-0.03 -1.0
 Wheat Target Price								
Baseline	4.00	4.00	4.00	4.00	4.00	*	4.00	
Equil. Option A	4.00	4.00	4.00	4.00	4.00	*	4.00	0.00 0.0
Equil. Option B	4.00	4.00	4.00	4.00	4.00	*	4.00	0.00 0.0
Equil. Option C	3.96	3.96	3.96	3.96	3.96	*	3.96	-0.04 -1.0
 Cotton Target Price								
Baseline	72.90	72.90	72.90	72.90	72.90	*	72.90	
Equil. Option A	72.90	72.90	72.90	72.90	72.90	*	72.90	0.00 0.0
Equil. Option B	72.90	72.90	72.90	72.90	72.90	*	72.90	0.00 0.0
Equil. Option C	72.17	72.17	72.17	72.17	72.17	*	72.17	-0.73 -1.0
 Sorghum Target Price								
Baseline	2.61	2.61	2.61	2.61	2.61	*	2.61	
Equil. Option A	2.61	2.61	2.61	2.61	2.61	*	2.61	0.00 0.0
Equil. Option B	2.61	2.61	2.61	2.61	2.61	*	2.61	0.00 0.0
Equil. Option C	2.59	2.59	2.59	2.59	2.59	*	2.59	-0.03 -1.0
 Barley Target Price								
Baseline	2.36	2.36	2.36	2.36	2.36	*	2.36	
Equil. Option A	2.72	2.72	2.72	2.72	2.72	*	2.72	0.35 15.0
Equil. Option B	2.72	2.72	2.72	2.72	2.72	*	2.72	0.35 15.0
Equil. Option C	2.69	2.69	2.69	2.69	2.69	*	2.69	0.33 13.9
 Oats Target Price								
Baseline	1.45	1.45	1.45	1.45	1.45	*	1.45	
Equil. Option A	2.17	2.17	2.17	2.17	2.17	*	2.17	0.72 50.0
Equil. Option B	2.17	2.17	2.17	2.17	2.17	*	2.17	0.72 50.0
Equil. Option C	2.15	2.15	2.15	2.15	2.15	*	2.15	0.70 48.5
 Rice Target Price								
Baseline	10.71	10.71	10.71	10.71	10.71	*	10.71	
Equil. Option A	10.71	10.71	10.71	10.71	10.71	*	10.71	0.00 0.0
Equil. Option B	10.71	10.71	10.71	10.71	10.71	*	10.71	0.00 0.0
Equil. Option C	10.60	10.60	10.60	10.60	10.60	*	10.60	-0.11 -1.0

Table A.1. continued

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92-	Change from Base	
						95/96	-----	
						Average	Absolute	Percent
<hr/>								
Soybean Loan Rate (Dollars per bushel)								
Baseline	4.50	4.50	4.50	4.50	4.50	*	4.50	
Equil. Option A	6.22	6.22	6.22	6.22	6.22	*	6.22	1.72 38.2
Equil. Option B	6.05	6.05	6.05	6.05	6.05	*	6.05	1.55 34.4
Equil. Option C	5.98	5.98	5.98	5.98	5.98	*	5.98	1.48 32.9
Soybean Marketing Loan Eligibility (Percent of production)								
Baseline	0.0	0.0	0.0	0.0	0.0	*	0.0	
Equil. Option A	65.0	65.0	60.0	60.0	60.0	*	62.0	62.0 ---
Equil. Option B	65.0	65.0	65.0	65.0	65.0	*	65.0	65.0 ---
Equil. Option C	65.0	65.0	65.0	65.0	65.0	*	65.0	65.0 ---
0-92 Acreage (Million acres)								
Baseline	6.1	5.8	5.9	6.9	6.4	*	6.2	
Equil. Option A	0.0	0.0	0.0	0.0	0.0	*	0.0	-6.2 -100.0
Equil. Option B	0.0	0.0	0.0	0.0	0.0	*	0.0	-6.2 -100.0
Equil. Option C	0.0	0.0	0.0	0.0	0.0	*	0.0	-6.2 -100.0
Feed Grain ARP (Percent)								
Baseline	10.0	10.0	10.0	10.0	10.0	*	10.0	
Equil. Option A	10.0	10.0	10.0	10.0	10.0	*	10.0	0.0 0.0
Equil. Option B	12.5	12.5	12.5	12.5	12.5	*	12.5	2.5 25.0
Equil. Option C	12.5	12.5	12.5	12.5	12.5	*	12.5	2.5 25.0
Wheat ARP								
Baseline	5.0	5.0	5.0	5.0	5.0	*	5.0	
Equil. Option A	5.0	5.0	5.0	5.0	5.0	*	5.0	0.0 0.0
Equil. Option B	7.5	7.5	7.5	7.5	7.5	*	7.5	2.5 50.0
Equil. Option C	7.5	7.5	7.5	7.5	7.5	*	7.5	2.5 50.0
Cotton ARP								
Baseline	12.5	12.5	12.5	12.5	12.5	*	12.5	
Equil. Option A	12.5	12.5	12.5	12.5	12.5	*	12.5	0.0 0.0
Equil. Option B	15.0	15.0	15.0	15.0	15.0	*	15.0	2.5 20.0
Equil. Option C	15.0	15.0	15.0	15.0	15.0	*	15.0	2.5 20.0
Rice ARP								
Baseline	15.0	15.0	15.0	15.0	15.0	*	15.0	
Equil. Option A	15.0	15.0	15.0	15.0	15.0	*	15.0	0.0 0.0
Equil. Option B	20.0	20.0	20.0	20.0	20.0	*	20.0	5.0 33.3
Equil. Option C	20.0	20.0	20.0	20.0	20.0	*	20.0	5.0 33.3

Table A.2. Program participation rates

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							----- Absolute	Percent
<hr/>								
Corn			(Percent)					
Baseline	84.8	80.4	79.5	79.1	75.8	*	79.9	
Equil. Option A	83.7	80.8	80.1	80.2	77.9	*	80.5	0.6
Equil. Option B	82.7	77.1	76.7	76.4	73.7	*	77.3	-2.6
Equil. Option C	82.2	76.5	76.1	75.9	73.2	*	76.8	-3.2
Wheat								
Baseline	84.1	84.9	79.8	81.6	78.6	*	81.8	
Equil. Option A	84.7	86.8	83.8	84.9	81.8	*	84.4	2.6
Equil. Option B	81.3	80.9	76.9	79.3	75.0	*	78.7	-3.1
Equil. Option C	80.2	79.8	75.7	78.2	73.9	*	77.6	-4.2
Cotton								
Baseline	87.5	91.1	89.2	87.5	85.2	*	88.1	
Equil. Option A	87.4	91.2	89.6	87.9	85.7	*	88.4	0.3
Equil. Option B	86.4	90.3	88.3	86.5	84.3	*	87.2	-0.9
Equil. Option C	85.9	89.8	87.8	86.0	83.8	*	86.7	-1.4
Sorghum								
Baseline	78.0	73.9	74.2	74.2	73.3	*	74.7	
Equil. Option A	78.0	75.8	75.9	77.0	76.4	*	76.6	1.9
Equil. Option B	77.0	72.7	73.1	74.0	73.5	*	74.1	-0.7
Equil. Option C	76.5	72.2	72.6	73.6	73.0	*	73.6	-1.1
Barley								
Baseline	73.3	70.1	68.0	68.0	67.1	*	69.3	
Equil. Option A	79.3	79.1	77.4	77.9	77.3	*	78.2	8.9
Equil. Option B	78.3	76.1	74.5	74.9	74.2	*	75.6	6.3
Equil. Option C	77.8	75.7	74.1	74.6	73.8	*	75.2	5.9
Oats								
Baseline	25.8	25.6	25.8	26.0	26.3	*	25.9	
Equil. Option A	79.5	81.6	84.3	84.9	84.1	*	82.9	56.9
Equil. Option B	79.2	79.9	81.4	81.1	79.9	*	80.3	54.4
Equil. Option C	77.6	78.6	80.0	79.9	78.7	*	79.0	53.0
Rice								
Baseline	88.1	92.1	91.8	91.0	90.7	*	90.8	
Equil. Option A	88.3	92.8	93.3	93.0	92.7	*	92.0	1.3
Equil. Option B	86.4	90.4	90.6	90.4	90.2	*	89.6	-1.2
Equil. Option C	85.8	90.0	90.2	90.0	89.8	*	89.2	-1.6

Table A.3. Area planted and idled

Variable/Year	91/92	92/93	93/94	94/95	95/96	*	91/92- 95/96	Change from Base	
							Average	Absolute	Percent
Area Planted (15 Crops)									
			(Million acres)						
Baseline	264.2	265.8	267.6	266.5	267.6	*	266.3		
Equil. Option A	268.9	270.4	271.2	271.6	272.6	*	270.9	4.6	1.7
Equil. Option B	265.3	266.4	267.3	267.6	268.8	*	267.1	0.7	0.3
Equil. Option C	265.3	266.4	267.3	267.6	268.8	*	267.1	0.7	0.3
ARP & 0-92 Idled Area									
Baseline	20.1	19.5	19.2	20.2	19.3	*	19.6		
Equil. Option A	14.2	14.1	13.9	13.9	13.5	*	13.9	-5.7	-29.2
Equil. Option B	18.0	17.4	17.1	17.2	16.6	*	17.3	-2.4	-12.2
Equil. Option C	17.9	17.3	16.9	17.1	16.4	*	17.1	-2.5	-12.9
CRP Area									
Baseline	40.0	40.0	40.0	40.0	40.0	*	40.0		
Equil. Option A	40.0	40.0	40.0	40.0	40.0	*	40.0	0.0	0.0
Equil. Option B	40.0	40.0	40.0	40.0	40.0	*	40.0	0.0	0.0
Equil. Option C	40.0	40.0	40.0	40.0	40.0	*	40.0	0.0	0.0
Area Planted + Idled									
Baseline	324.3	325.3	326.8	326.7	326.9	*	326.0		
Equil. Option A	323.1	324.5	325.1	325.5	326.1	*	324.9	-1.1	-0.3
Equil. Option B	323.3	323.8	324.4	324.8	325.4	*	324.3	-1.6	-0.5
Equil. Option C	323.2	323.7	324.2	324.7	325.2	*	324.2	-1.8	-0.5
Corn Area Planted									
Baseline	73.9	74.2	73.6	73.3	73.4	*	73.7		
Equil. Option A	73.9	74.0	73.9	73.7	73.8	*	73.8	0.1	0.2
Equil. Option B	72.6	73.1	72.9	72.8	72.9	*	72.9	-0.8	-1.1
Equil. Option C	72.7	73.1	73.0	72.8	72.9	*	72.9	-0.8	-1.1
Soybean Area Planted									
Baseline	55.4	56.5	58.0	57.7	58.4	*	57.2		
Equil. Option A	57.7	58.3	59.0	59.6	60.5	*	59.0	1.8	3.2
Equil. Option B	57.4	57.4	58.1	58.8	59.6	*	58.3	1.1	1.8
Equil. Option C	57.3	57.4	58.1	58.8	59.6	*	58.2	1.0	1.8
Wheat Area Planted									
Baseline	77.5	77.9	79.0	78.4	78.7	*	78.3		
Equil. Option A	78.0	78.9	79.2	79.1	79.3	*	78.9	0.6	0.8
Equil. Option B	76.5	77.3	77.8	77.6	77.8	*	77.4	-0.9	-1.1
Equil. Option C	76.6	77.3	77.8	77.6	77.8	*	77.4	-0.9	-1.1

Table A.3. continued

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							Absolute	Percent
<hr/>								
Cotton Area Planted			(Million acres)					
Baseline	12.4	12.0	12.2	12.3	12.3	*	12.2	
Equil. Option A	12.3	12.3	12.4	12.4	12.5	*	12.4	0.1 1.1
Equil. Option B	12.1	11.9	12.1	12.1	12.2	*	12.1	-0.2 -1.5
Equil. Option C	12.1	11.9	12.1	12.1	12.2	*	12.1	-0.2 -1.5
Sorghum Area Planted								
Baseline	12.3	12.5	12.2	12.0	11.9	*	12.2	
Equil. Option A	13.0	13.0	12.8	12.7	12.6	*	12.8	0.7 5.5
Equil. Option B	12.8	12.8	12.7	12.5	12.5	*	12.7	0.5 4.1
Equil. Option C	12.8	12.8	12.7	12.5	12.5	*	12.7	0.5 4.1
Barley Area Planted								
Baseline	9.4	9.6	9.4	9.5	9.6	*	9.5	
Equil. Option A	10.5	10.4	10.4	10.5	10.5	*	10.4	1.0 10.3
Equil. Option B	10.2	10.3	10.2	10.3	10.3	*	10.3	0.8 8.6
Equil. Option C	10.2	10.3	10.2	10.3	10.3	*	10.3	0.8 8.6
Oat Area Harvested								
Baseline	5.6	5.6	5.6	5.8	5.7	*	5.7	
Equil. Option A	6.4	6.4	6.3	6.3	6.2	*	6.3	0.6 11.3
Equil. Option B	6.4	6.3	6.2	6.2	6.2	*	6.3	0.6 10.5
Equil. Option C	6.4	6.3	6.2	6.2	6.2	*	6.3	0.6 10.6
Rice Area Planted								
Baseline	3.1	3.0	3.0	3.0	2.9	*	3.0	
Equil. Option A	3.1	3.1	3.1	3.1	3.1	*	3.1	0.1 3.2
Equil. Option B	3.0	3.0	3.0	3.0	3.0	*	3.0	0.0 0.1
Equil. Option C	3.0	3.0	3.0	3.0	3.0	*	3.0	0.0 0.2

Table A.4. Crop production

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							Absolute	Percent
Corn			(Million bushels)					
Baseline	8,153	8,361	8,448	8,581	8,772	*	8,463	
Equil. Option A	8,145	8,328	8,471	8,611	8,786	*	8,468	5 0.1
Equil. Option B	8,013	8,253	8,385	8,529	8,713	*	8,379	-85 -1.0
Equil. Option C	8,016	8,256	8,388	8,531	8,716	*	8,381	-82 -1.0
Soybeans								
Baseline	1,915	1,978	2,053	2,072	2,125	*	2,028	
Equil. Option A	1,981	2,029	2,081	2,129	2,187	*	2,081	53 2.6
Equil. Option B	1,971	2,003	2,055	2,105	2,161	*	2,059	30 1.5
Equil. Option C	1,970	2,002	2,054	2,104	2,160	*	2,058	29 1.4
Wheat								
Baseline	2,540	2,566	2,633	2,616	2,648	*	2,600	
Equil. Option A	2,554	2,590	2,623	2,628	2,656	*	2,610	10 0.4
Equil. Option B	2,511	2,555	2,595	2,590	2,624	*	2,575	-26 -1.0
Equil. Option C	2,510	2,555	2,594	2,590	2,624	*	2,575	-26 -1.0
Cotton			(Million bales)					
Baseline	15.46	15.07	15.45	15.67	15.84	*	15.50	
Equil. Option A	15.28	15.36	15.71	15.85	16.10	*	15.66	0.16 1.1
Equil. Option B	14.99	14.94	15.31	15.43	15.69	*	15.27	-0.23 -1.5
Equil. Option C	14.96	14.91	15.28	15.41	15.67	*	15.25	-0.25 -1.6
Sorghum			(Million bushels)					
Baseline	744	772	763	762	770	*	762	
Equil. Option A	791	798	803	805	812	*	802	40 5.2
Equil. Option B	775	792	795	798	806	*	793	31 4.1
Equil. Option C	775	792	795	798	805	*	793	31 4.1
Barley								
Baseline	487	500	496	505	516	*	501	
Equil. Option A	537	542	547	555	561	*	549	48 9.5
Equil. Option B	527	536	538	548	553	*	540	40 7.9
Equil. Option C	527	536	538	548	553	*	541	40 7.9
Oats								
Baseline	345	344	352	364	358	*	353	
Equil. Option A	390	393	389	395	394	*	392	40 11.3
Equil. Option B	392	387	385	391	391	*	389	37 10.4
Equil. Option C	392	387	386	392	391	*	390	37 10.5
Rice			(Million hundredweight)					
Baseline	170.3	169.1	169.0	169.6	170.7	*	169.7	
Equil. Option A	171.6	173.7	174.6	175.5	176.6	*	174.4	4.7 2.7
Equil. Option B	168.0	169.2	170.0	170.7	171.8	*	170.0	0.2 0.1
Equil. Option C	168.1	169.2	170.0	170.8	171.9	*	170.0	0.3 0.2

Table A.5. Commodity trade

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							----- Absolute	Percent
<hr/>								
10-Commodity Exports (Million metric tons)								
Baseline	132.80	137.22	143.18	148.05	153.46	*	142.94	
Equil. Option A	134.45	139.09	145.28	150.99	156.70	*	145.30	2.36 1.7
Equil. Option B	132.93	136.84	142.55	147.98	153.68	*	142.80	-0.15 -0.1
Equil. Option C	132.91	136.83	142.56	148.00	153.68	*	142.80	-0.15 -0.1
Value of Exports (Billion dollars)								
Baseline	19.86	20.83	20.88	22.11	23.76	*	21.49	
Equil. Option A	19.37	20.21	20.23	21.41	23.00	*	20.85	-0.64 -3.0
Equil. Option B	19.86	20.72	20.86	22.08	23.70	*	21.44	-0.04 -0.2
Equil. Option C	19.86	20.73	20.86	22.08	23.71	*	21.45	-0.04 -0.2
Corn Exports (Million bushels)								
Baseline	2,155	2,259	2,384	2,497	2,622	*	2,383	
Equil. Option A	2,143	2,240	2,372	2,507	2,640	*	2,380	-3 -0.1
Equil. Option B	2,116	2,204	2,330	2,456	2,588	*	2,339	-44 -1.9
Equil. Option C	2,116	2,206	2,332	2,458	2,590	*	2,340	-43 -1.8
Soybean Exports (Million bushels)								
Baseline	672	681	697	720	742	*	702	
Equil. Option A	697	715	724	751	778	*	733	31 4.4
Equil. Option B	694	703	707	733	761	*	720	17 2.5
Equil. Option C	693	702	706	733.4	760.4	*	719	17 2.4
Soybean Meal Exports (Thousand tons)								
Baseline	5,825	6,298	6,934	7,382	7,852	*	6,858	
Equil. Option A	6,001	6,562	7,291	7,792	8,299	*	7,189	331 4.8
Equil. Option B	5,982	6,504	7,111	7,586	8,040	*	7,044	186 2.7
Equil. Option C	5,976	6,495	7,102	7,574	8,031	*	7,036	178 2.6
Soybean Oil Exports (Million pounds)								
Baseline	1,507	1,459	1,593	1,721	1,841	*	1,624	
Equil. Option A	1,560	1,566	1,712	1,862	1,995	*	1,739	115 7.1
Equil. Option B	1,550	1,532	1,665	1,797	1,923	*	1,693	69 4.3
Equil. Option C	1,548	1,529	1,661	1,793	1,920	*	1,690	66 4.1
Wheat Exports (Million bushels)								
Baseline	1,483	1,508	1,562	1,581	1,605	*	1,548	
Equil. Option A	1,489	1,511	1,563	1,584	1,603	*	1,550	2 0.1
Equil. Option B	1,470	1,486	1,538	1,559	1,580	*	1,527	-21 -1.4
Equil. Option C	1,470	1,486	1,538	1,559	1,580	*	1,527	-21 -1.4

Table A.5. continued

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							----- Absolute	Percent
<hr/>								
Cotton Exports	(Million bales)							
Baseline	6.63	6.88	7.05	7.20	7.44	*	7.04	
Equil. Option A	6.67	7.00	7.23	7.41	7.67	*	7.20	0.16 2.2
Equil. Option B	6.45	6.69	6.87	7.04	7.31	*	6.87	-0.17 -2.4
Equil. Option C	6.44	6.67	6.85	7.02	7.29	*	6.85	-0.19 -2.7
Sorghum Exports	(Million bushels)							
Baseline	246	254	266	280	293	*	268	
Equil. Option A	257	266	278	293	310	*	281	13 4.9
Equil. Option B	259	267	280	294	311	*	282	15 5.4
Equil. Option C	259	267	279	294	311	*	282	14 5.3
Barley Exports								
Baseline	94	98	93	94	99	*	96	
Equil. Option A	121	125	125	127	130	*	126	30 31.4
Equil. Option B	117	122	119	123	125	*	121	26 26.8
Equil. Option C	116	122	120	123	125	*	121	26 26.7
Oat Imports								
Baseline	54	55	55	55	55	*	55	
Equil. Option A	50	48	48	48	47	*	48	-7 -12.0
Equil. Option B	50	48	49	49	48	*	49	-6 -10.9
Equil. Option C	49	48	48	48	48	*	48	-7 -12.0
Rice Exports	(Million hundredweight)							
Baseline	81.3	83.6	84.2	83.4	83.1	*	83.1	
Equil. Option A	82.4	87.0	89.2	89.0	88.8	*	87.3	4.2 5.0
Equil. Option B	80.1	82.9	84.8	84.4	84.2	*	83.3	0.2 0.2
Equil. Option C	80.1	83.0	84.8	84.4	84.2	*	83.3	0.2 0.2

Table A.6. Farm prices

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base		
							Absolute	Percent	
Corn	(Dollars per bushel)								
Baseline	2.12	2.04	1.99	2.02	2.07	*	2.05		
Equil. Option A	2.09	2.01	1.90	1.89	1.96	*	1.97	-0.08	-3.7
Equil. Option B	2.22	2.13	2.04	2.05	2.12	*	2.11	0.06	3.1
Equil. Option C	2.22	2.13	2.04	2.05	2.12	*	2.11	0.06	3.0
Soybeans									
Baseline	5.82	6.03	5.45	5.70	6.01	*	5.80		
Equil. Option A	5.26	5.38	5.01	5.19	5.36	*	5.24	-0.56	-9.7
Equil. Option B	5.34	5.61	5.36	5.50	5.66	*	5.49	-0.31	-5.3
Equil. Option C	5.36	5.63	5.37	5.51	5.67	*	5.51	-0.29	-5.1
Wheat									
Baseline	3.18	3.35	3.27	3.36	3.53	*	3.34		
Equil. Option A	3.10	3.20	3.13	3.24	3.41	*	3.22	-0.12	-3.6
Equil. Option B	3.25	3.37	3.28	3.41	3.59	*	3.38	0.04	1.2
Equil. Option C	3.25	3.37	3.28	3.41	3.586	*	3.38	0.04	1.2
Cotton	(Cents per pound)								
Baseline	58.56	61.29	61.87	62.92	64.66	*	61.86		
Equil. Option A	58.31	60.79	61.16	62.13	63.81	*	61.24	-0.62	-1.0
Equil. Option B	59.19	61.99	62.51	63.50	65.14	*	62.47	0.60	1.0
Equil. Option C	59.25	62.08	62.60	63.57	65.20	*	62.54	0.68	1.1
Sorghum	(Dollars per bushel)								
Baseline	1.95	1.92	1.91	1.94	1.99	*	1.94		
Equil. Option A	1.86	1.84	1.76	1.77	1.84	*	1.82	-0.13	-6.5
Equil. Option B	1.97	1.93	1.88	1.89	1.96	*	1.93	-0.02	-0.8
Equil. Option C	1.96	1.94	1.88	1.89	1.96	*	1.93	-0.02	-0.8
Barley									
Baseline	2.04	2.03	2.03	2.07	2.12	*	2.06		
Equil. Option A	1.88	1.85	1.80	1.82	1.89	*	1.85	-0.21	-10.2
Equil. Option B	1.99	1.96	1.92	1.95	2.03	*	1.97	-0.09	-4.2
Equil. Option C	1.99	1.96	1.92	1.95	2.03	*	1.97	-0.09	-4.3
Oats									
Baseline	1.63	1.66	1.66	1.66	1.69	*	1.66		
Equil. Option A	1.50	1.44	1.41	1.40	1.43	*	1.44	-0.22	-13.5
Equil. Option B	1.52	1.48	1.47	1.47	1.50	*	1.49	-0.17	-10.3
Equil. Option C	1.52	1.48	1.47	1.46	1.49	*	1.49	-0.17	-10.5
Rice	(Dollars per hundredweight)								
Baseline	6.63	6.64	6.73	6.94	7.16	*	6.82		
Equil. Option A	6.47	6.24	6.23	6.44	6.69	*	6.42	-0.40	-5.9
Equil. Option B	6.78	6.69	6.66	6.88	7.12	*	6.83	0.01	0.1
Equil. Option C	6.78	6.68	6.66	6.88	7.12	*	6.82	0.01	0.1

Table A.7. Nonparticipant net returns over variable production costs

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							----- Absolute	Percent
Corn	(Dollars per acre)							
Baseline	97.21	89.39	79.43	79.26	81.57	*	85.37	
Equil. Option A	93.55	86.02	68.24	62.76	67.23	*	75.56	-9.81 -11.5
Equil. Option B	109.38	101.09	86.17	83.34	88.21	*	93.64	8.26 9.7
Equil. Option C	109.09	100.92	85.88	83.04	87.91	*	93.37	7.99 9.4
Soybeans								
Baseline	129.80	137.97	115.83	124.59	134.94	*	128.63	
Equil. Option A	132.85	135.39	127.73	129.54	130.83	*	131.27	2.64 2.1
Equil. Option B	130.11	134.85	131.03	132.00	132.91	*	132.18	3.56 2.8
Equil. Option C	128.98	133.69	129.73	130.68	131.58	*	130.93	2.31 1.8
Wheat								
Baseline	57.20	63.31	58.53	59.45	63.87	*	60.47	
Equil. Option A	54.04	57.36	52.69	54.30	58.84	*	55.45	-5.02 -8.3
Equil. Option B	59.99	64.32	58.83	61.45	66.30	*	62.18	1.71 2.8
Equil. Option C	59.95	64.29	58.87	61.43	66.39	*	62.19	1.72 2.8
Cotton								
Baseline	68.67	82.52	77.01	71.98	70.35	*	74.11	
Equil. Option A	67.15	79.22	72.24	66.58	64.48	*	69.94	-4.17 -5.6
Equil. Option B	72.88	87.20	81.40	75.95	73.66	*	78.22	4.11 5.5
Equil. Option C	72.48	86.92	81.14	75.66	73.33	*	77.91	3.80 5.1
Sorghum								
Baseline	41.49	39.25	35.63	34.47	34.46	*	37.06	
Equil. Option A	35.38	33.69	25.57	22.82	23.77	*	28.25	-8.81 -23.8
Equil. Option B	42.56	40.23	33.49	31.25	32.15	*	35.94	-1.12 -3.0
Equil. Option C	42.41	40.28	33.47	31.24	32.14	*	35.91	-1.15 -3.1
Barley								
Baseline	48.50	47.55	45.91	46.12	46.69	*	46.95	
Equil. Option A	38.45	36.70	31.81	30.74	32.40	*	34.02	-12.93 -27.5
Equil. Option B	45.09	42.94	39.08	38.58	40.52	*	41.24	-5.71 -12.2
Equil. Option C	45.09	42.93	38.85	38.59	40.51	*	41.20	-5.76 -12.3
Oats								
Baseline	37.54	38.66	37.14	34.40	34.33	*	36.42	
Equil. Option A	29.82	25.32	21.32	18.32	17.61	*	22.48	-13.93 -38.3
Equil. Option B	31.29	28.04	25.06	22.47	21.79	*	25.73	-10.69 -29.3
Equil. Option C	31.05	28.04	24.81	22.28	21.41	*	25.52	-10.90 -29.9
Rice								
Baseline	24.54	19.93	14.49	13.00	11.15	*	16.62	
Equil. Option A	15.24	-4.27	-16.25	-17.84	-19.11	*	-8.45	-25.07 -150.8
Equil. Option B	34.17	22.73	10.07	9.23	8.36	*	16.91	0.29 1.7
Equil. Option C	33.92	22.47	9.99	9.07	8.30	*	16.75	0.13 0.8

Table A.8. Participant net returns over variable production costs

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92-	Change from Base		
						95/96	-----		
						Average	Absolute	Percent	
Corn									
			(Dollars per acre)						
Baseline	144.46	144.91	140.63	137.66	135.06	*	140.54		
Equil. Option A	143.97	144.31	138.79	134.61	132.08	*	138.75	-1.79	-1.3
Equil. Option B	141.43	142.37	137.51	134.12	132.02	*	137.49	-3.05	-2.2
Equil. Option C	138.87	139.81	134.93	131.54	129.43	*	134.92	-5.63	-4.0
Wheat									
Baseline	80.60	80.76	78.87	76.76	75.30	*	78.46		
Equil. Option A	80.26	79.96	77.89	75.85	74.41	*	77.68	-0.78	-1.0
Equil. Option B	78.27	78.40	76.35	74.45	73.20	*	76.13	-2.33	-3.0
Equil. Option C	76.94	77.07	75.04	73.13	71.89	*	74.81	-3.65	-4.6
Cotton									
Baseline	131.62	129.62	121.82	111.99	101.58	*	119.33		
Equil. Option A	131.58	129.32	121.32	111.35	100.85	*	118.88	-0.44	-0.4
Equil. Option B	127.71	125.83	118.27	108.70	98.54	*	115.81	-3.52	-2.9
Equil. Option C	123.39	121.50	113.98	104.43	94.28	*	111.52	-7.81	-6.5
Sorghum									
Baseline	70.52	70.10	67.37	64.73	62.07	*	66.96		
Equil. Option A	69.91	69.34	66.07	63.07	60.41	*	65.76	-1.20	-1.8
Equil. Option B	68.12	67.73	64.72	61.94	59.42	*	64.39	-2.57	-3.8
Equil. Option C	66.74	66.37	63.36	60.58	58.06	*	63.02	-3.93	-5.9
Barley									
Baseline	55.40	54.96	53.49	51.99	50.38	*	53.24		
Equil. Option A	68.26	67.73	65.54	63.72	62.25	*	65.50	12.26	23.0
Equil. Option B	66.88	66.32	64.42	62.79	61.48	*	64.38	11.14	20.9
Equil. Option C	65.76	65.19	63.26	61.68	60.36	*	63.25	10.01	18.8
Oats									
Baseline	34.66	35.73	34.29	31.68	31.61	*	33.59		
Equil. Option A	57.42	55.82	53.36	50.96	48.95	*	53.30	19.71	58.7
Equil. Option B	57.74	56.44	54.24	51.95	49.97	*	54.07	20.47	60.9
Equil. Option C	56.72	55.47	53.21	50.93	48.91	*	53.05	19.45	57.9
Rice									
Baseline	186.48	182.20	173.56	163.90	152.96	*	171.82		
Equil. Option A	185.05	177.96	168.04	158.01	146.88	*	167.19	-4.63	-2.7
Equil. Option B	176.02	170.59	161.37	152.27	142.08	*	160.47	-11.35	-6.6
Equil. Option C	171.80	166.39	157.19	148.07	137.90	*	156.27	-15.55	-9.0

Table A.9. Total net returns over variable production costs

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							----- Absolute	Percent
<hr/>								
8 Program Crops (Billion dollars)								
Baseline	27.78	28.24	26.28	26.24	26.38	*	26.98	
Equil. Option A	27.96	28.11	26.70	26.25	25.91	*	26.99	0.00 0.0
Equil. Option B	27.56	27.72	26.58	26.22	26.01	*	26.82	-0.17 -0.6
Equil. Option C	27.09	27.26	26.11	25.75	25.57	*	26.36	-0.63 -2.3
Corn								
Baseline	10.57	10.30	9.87	9.70	9.42	*	9.97	
Equil. Option A	10.25	10.08	9.52	9.21	8.98	*	9.61	-0.37 -3.7
Equil. Option B	10.22	10.02	9.51	9.26	9.11	*	9.62	-0.35 -3.5
Equil. Option C	10.03	9.84	9.32	9.08	8.93	*	9.44	-0.53 -5.3
Soybeans								
Baseline	7.01	7.60	6.56	7.01	7.68	*	7.17	
Equil. Option A	7.47	7.69	7.35	7.52	7.71	*	7.55	0.38 5.3
Equil. Option B	7.28	7.54	7.43	7.56	7.72	*	7.51	0.33 4.7
Equil. Option C	7.21	7.47	7.35	7.48	7.64	*	7.43	0.26 3.6
Wheat								
Baseline	6.25	6.42	6.14	6.04	6.01	*	6.17	
Equil. Option A	6.10	6.22	5.96	5.88	5.83	*	6.00	-0.18 -2.8
Equil. Option B	6.01	6.15	5.86	5.84	5.84	*	5.94	-0.23 -3.8
Equil. Option C	5.91	6.05	5.77	5.74	5.76	*	5.85	-0.33 -5.3
Cotton								
Baseline	1.67	1.66	1.56	1.42	1.29	*	1.52	
Equil. Option A	1.65	1.66	1.55	1.41	1.28	*	1.51	-0.01 -0.6
Equil. Option B	1.60	1.61	1.51	1.38	1.25	*	1.47	-0.05 -3.1
Equil. Option C	1.55	1.56	1.46	1.33	1.20	*	1.42	-0.10 -6.7
Sorghum								
Baseline	0.86	0.83	0.79	0.76	0.73	*	0.79	
Equil. Option A	0.82	0.80	0.74	0.71	0.68	*	0.75	-0.04 -5.3
Equil. Option B	0.82	0.79	0.74	0.71	0.68	*	0.75	-0.05 -5.8
Equil. Option C	0.80	0.78	0.72	0.69	0.67	*	0.73	-0.06 -7.8
Barley								
Baseline	0.54	0.54	0.51	0.51	0.49	*	0.52	
Equil. Option A	0.67	0.66	0.62	0.61	0.60	*	0.63	0.11 21.5
Equil. Option B	0.66	0.65	0.62	0.61	0.60	*	0.63	0.11 20.8
Equil. Option C	0.65	0.64	0.61	0.60	0.59	*	0.62	0.10 18.7

Table A.9. Continued

Variable/Year	91/92	92/93	93/94	94/95	95/96	91/92- 95/96 Average	Change from Base	
							----- Absolute	Percent
<hr/>								
Oats	(Billion dollars)							
Baseline	0.21	0.21	0.21	0.20	0.19	*	0.20	
Equil. Option A	0.34	0.33	0.32	0.31	0.29	*	0.32	0.11 55.9
Equil. Option B	0.35	0.33	0.32	0.31	0.29	*	0.32	0.12 56.3
Equil. Option C	0.34	0.33	0.31	0.30	0.28	*	0.31	0.11 52.2
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Rice								
Baseline	0.67	0.68	0.64	0.60	0.56	*	0.63	
Equil. Option A	0.66	0.67	0.63	0.60	0.55	*	0.62	-0.01 -1.4
Equil. Option B	0.62	0.62	0.59	0.56	0.52	*	0.58	-0.05 -7.9
Equil. Option C	0.60	0.61	0.57	0.54	0.50	*	0.56	-0.07 -10.6

Table A.10. Government costs

Variable/Year	FY-92	FY-93	FY-94	FY-95	FY-96	FY-92- FY-96 Average	Change from Base	
							----- Absolute	Percent
<hr/>								
Net CCC Outlays	(Billion dollars)							
Baseline	10.72	10.54	10.63	9.65	8.49	*	10.01	
Equil. Option A	13.67	13.54	14.41	13.30	11.97	*	13.38	3.37 33.7
Equil. Option B	11.17	10.71	11.44	10.29	9.08	*	10.54	0.53 5.3
Equil. Option C	10.64	10.18	10.93	9.79	8.60	*	10.03	0.02 0.2
 Feed Grains								
Baseline	5.40	5.57	5.62	5.22	4.72	*	5.30	
Equil. Option A	5.99	6.36	6.83	6.50	5.90	*	6.32	1.01 19.1
Equil. Option B	4.82	5.15	5.42	5.08	4.57	*	5.01	-0.29 -5.6
Equil. Option C	4.62	4.95	5.22	4.88	4.37	*	4.81	-0.50 -9.4
 Soybeans								
Baseline	-0.21	-0.07	0.09	0.03	-0.11	*	-0.05	
Equil. Option A	1.37	1.20	1.62	1.40	1.23	*	1.36	1.42 --
Equil. Option B	1.02	0.61	1.09	0.84	0.64	*	0.84	0.89 --
Equil. Option C	0.91	0.51	0.99	0.74	0.54	*	0.74	0.79 --
 Wheat								
Baseline	1.78	1.60	1.53	1.29	1.02	*	1.44	
Equil. Option A	2.04	1.95	1.85	1.58	1.28	*	1.74	0.30 20.7
Equil. Option B	1.58	1.46	1.39	1.12	0.86	*	1.28	-0.16 -11.3
Equil. Option C	1.48	1.37	1.29	1.02	0.77	*	1.19	-0.26 -17.8
 Cotton								
Baseline	1.01	0.71	0.65	0.55	0.43	*	0.67	
Equil. Option A	1.04	0.74	0.70	0.60	0.48	*	0.71	0.05 6.8
Equil. Option B	0.90	0.64	0.58	0.49	0.39	*	0.60	-0.07 -10.2
Equil. Option C	0.84	0.58	0.53	0.45	0.34	*	0.55	-0.12 -17.9
 Rice								
Baseline	0.70	0.70	0.66	0.60	0.54	*	0.64	
Equil. Option A	0.74	0.79	0.79	0.74	0.68	*	0.75	0.11 17.0
Equil. Option B	0.61	0.64	0.63	0.57	0.51	*	0.59	-0.05 -7.7
Equil. Option C	0.59	0.62	0.62	0.55	0.49	*	0.57	-0.07 -10.2
 Other								
Baseline	2.04	2.04	2.08	1.96	1.90	*	2.00	
Equil. Option A	2.50	2.49	2.61	2.48	2.40	*	2.50	0.49 24.6
Equil. Option B	2.24	2.21	2.33	2.19	2.13	*	2.22	0.22 10.8
Equil. Option C	2.19	2.16	2.28	2.14	2.08	*	2.17	0.17 8.4

