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Resources, Community, and
Economic Development Division

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June 14, 1995

The Honorable Richard G. Lugar
Chairman, Committee on Agriculture,
Nutrition, and Forestry
United States Senate

Dear Mr. Chairman:

As part of your Committee's efforts to examine the nation's farm programs, you asked us for information on the U.S. Department of Agriculture's (USDA) Options Pilot Program (OPP). OPP, authorized under the 1990 Food, Agriculture, Conservation and Trade (FACT) Act, was designed to test the extent to which farmers could manage the risks of declines in crop prices by trading options on regulated commodity exchanges. These options, whose purchase costs are reimbursed by USDA, give their holders the "option" to sell futures contracts for specified amounts of commodities at specified prices. The Congress viewed OPP as a possible alternative to USDA's price and income support programs. This report provides information on (1) the status of OPP's implementation and (2) views on its performance.

In summary, we found the following:

-- USDA implemented OPP in 1993, subsidizing options purchases by 956 farmers in nine counties in three states. In 1994, USDA increased the number of locations where OPP was offered, adding four counties in two additional states. During that year, nearly 1,300 farmers participated in the program. In 1995, USDA further expanded the program, offering it to a total of 21 counties located in seven states. Information on the number of farmers participating in the program for 1995 is not yet available.

-- Views on OPP's performance vary. A 1994 report by the Chicago Board of Trade, the Kansas City Board of Trade, and the Minneapolis Grain Exchange was optimistic about OPP's initial performance, noting that producers showed a relatively high level of interest in the program.

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However, some USDA analysts were more cautious, pointing out that under some circumstances OPP can cost the federal government more than payments for price and income support programs.

BACKGROUND

The Congress authorized OPP under the FACT Act to test, among other things, the effectiveness of futures options contracts for managing the risk associated with fluctuations in crop prices. Currently, the government absorbs much of this risk through price support loans and deficiency payments. With price support loans, USDA enables farmers to put their crops under loan at the "support price" and (1) hold their crops off the market until higher prices encourage them to redeem the crops and sell them or (2) forfeit their crops to USDA as full repayment of the loan. With deficiency payments, USDA makes up the difference between "target" prices (established by law) and support prices (established by law and USDA administrative action) or market prices, whichever are higher. Between 1990 and 1995, outlays for these deficiency payments ranged between $4.2 billion and $8.6 billion per year.

The Congress viewed OPP as a possible alternative to USDA's current system of price and income supports. OPP draws on key features of the traditional commodity program, such as target prices and price support loans, but incorporates market-based risk management tools. Rather than relying on government-determined deficiency payments or price supports to help mitigate the risk of low commodity prices, OPP allows farmers to manage this risk by trading futures options contracts on a regulated commodity exchange. A futures options contract is simply an option that entitles, but does not obligate, the holder to buy (or sell) an underlying commodity futures contract at a specified price (called the strike price) for a specified period of time. A put option is an option to sell the underlying futures contract; a call option is an option to buy. OPP only deals with put options.

USDA provides a subsidy for OPP participants to buy put options that have strike prices based on USDA target

prices.[1] In addition to subsidizing the full cost of these put options, USDA offers incentive payments to encourage farmers to participate in the program. Although the bushels that participants enroll in OPP are not eligible for payments under USDA's traditional price and income support programs, the subsidized option purchase is a form of income support provided to OPP participants. The purchase of a put option can reduce the risk associated with a decline in a commodity price. If the commodity price declines, the value of the put option, by virtue of its guaranteed strike price, increases and thus offsets to some degree the decline in commodity price.

As the holder of a put option, a farmer can take three possible actions--exercise the option (sell the underlying futures contract), sell the option to another trader, or let the option lapse. The value of the commodity futures option is in large part determined by the relationship between the option's strike price and the price of the underlying futures contract, which, in turn, is determined by the interaction of buyers and sellers at the commodity exchange. The value of a put option is positive when the futures price is below the strike price and increases with decreases in the futures price. For example, if the September wheat futures price is $3.50 per bushel and a farmer holds a September put option with a strike price of $3.60 per bushel, the farmer could buy a September futures contract for $3.50 and exercise the put option to sell at a higher price of $3.60. The farmer would then net 10 cents per bushel. If the September futures price were to decrease to $3.40, the option's value would increase, thus offsetting to some extent the financial consequences of the lower commodity price facing the farmer.

Rather than exercising the option, a farmer could sell the option itself to another trader. Typically, an option will sell for an amount greater than the difference between the strike price and the futures price.[2] If, however, the strike price is equal to or lower than the futures contract

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[1]Under another version of OPP, the strike price is based on USDA loan rates. However, most OPP activity has been in the target price program, and most of our discussion refers to the target price program.

[2]This is particularly true for an option with a long time remaining until it expires and for an option with a strike price close to the underlying futures contract.

price at expiration, the option has no value and the farmer would allow it to lapse.

STATUS OF OPP'S IMPLEMENTATION

USDA's OPP has gradually expanded since its implementation in 1993. For that year, USDA offered the program to farmers in nine counties in three states--Indiana, Illinois, and Iowa. About 956 producers chose to participate, enrolling about 17 million bushels of corn in the program. The amount of corn enrolled in the program represents less than 1 percent of the 6.3 billion bushels produced nationwide. OPP's costs--subsidies for put option purchases and incentive payments--totaled about $12.7 million. In 1993, all participating farmers bought options traded at the Chicago Board of Trade.

In 1994, the scope of OPP expanded. USDA added four more counties in two more states--Kansas and North Dakota. About 1,300 farmers participated; they enrolled 20 million bushels of corn and 5 million bushels of wheat in the program. USDA reduced incentive payments from their 1993 level of 15 cents per bushel to 5 cents per bushel. Subsidy payments and incentive payments to program participants totaled about $14.6 million--corn producers received $9.6 million and wheat producers received $5 million. Trading expanded to include two other exchanges--the Kansas City Board of Trade and the Minneapolis Grain Exchange.

Enrollment for the 1995 OPP is under way. USDA is offering the program to 21 counties in seven states, including Nebraska and Ohio. Incentive payments under the 1995 program remain at 5 cents per bushel. Information on the number of participants is not yet available.

MIXED VIEWS ON OPP'S POTENTIAL

In September 1994, three major commodity trading exchanges participating in OPP--the Chicago Board of Trade, the Kansas City Board of Trade, and the Minneapolis Grain Exchange--issued a report evaluating OPP's performance for 1993-94. In summary, the report stated that the first 2 years' experience with OPP indicated that it was an effective alternative to traditional deficiency payment and price support programs, noting that the project generated a relatively high level of interest among farmers. The report also stated that about 150 corn producers who wanted to participate in OPP in 1993 were not allowed to do so

because of enrollment limits. It interpreted this interest as an indication of producers' willingness to accept trading in futures options contracts as an alternative to the current system of price and income supports. However, the report acknowledged that OPP's limited scope hindered accurate evaluations of the potential value of trading futures options contracts as an acceptable risk management technique. Accordingly, it recommended that the project be significantly expanded in 1995 from the 60 million bushels of corn and wheat allowed in 1994 to 150 million bushels in 1995. The report also recommended expanding the number of counties where OPP was offered.

Analysts at USDA's Economic Research Service and Consolidated Farm Service Agency were more cautious in their evaluations of OPP. Like the exchanges, they were encouraged by the producers' positive reaction to the program. However, they pointed out that over time OPP may cost the government more than deficiency payments. While options premiums should, on average, roughly equal deficiency payments, other costs, such as incentive payments, must be considered. Actual experience with OPP has shown that the program's cost advantage or disadvantage compared with deficiency payments has varied. For example, according to USDA officials, in 1993, OPP cost $7.9 million more than deficiency payments for the same amount of corn production. In 1994, OPP costs were $1.8 million less than deficiency payments for the same amount of corn production, and wheat costs were $1.9 million more than deficiency payments would have been.

USDA officials also expressed concern that OPP may not have achieved its aim of teaching farmers how to use the market to manage price risk. Their concern was based on the observation that in 1993 most (74 percent) of the OPP options contracts were bought and sold in 1 day. This quick turnaround may indicate that farmers were unwilling to risk waiting to see whether the value of their options would increase over time. Rather, they used the program to ensure that they achieved returns on their production at the option's strike price. In part, quick turnaround was an outcome of the relationship between the strike price and the market price. The strike prices of the OPP put options were well above the futures prices, and many farmers may have preferred to obtain the value of the option in cash rather than to hold the option to offset the risk of declining commodity prices.

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To obtain this information, we reviewed the September 1994 study of OPP conducted by the Chicago Board of Trade, the Kansas City Board of Trade, and the Minneapolis Grain Exchange. We also spoke with officials in USDA's Economic Research Service, Cooperative State Research Education and Extension Service, and Consolidated Farm Service Agency. We conducted our review during April and May 1995.

We provided a draft of this report to USDA's Principal Economic Counselor; a senior policy analyst at USDA's Consolidated Farm Service Agency; and an economist at USDA's Economic Research Service. They generally agreed with the facts as presented.

We will send copies of this report to the Secretary of Agriculture and make copies available to others on request.

Please contact me at (202) 512-5138 if you or your staff have any questions about the information in this correspondence.

Sincerely yours,

John W. Harman
Director, Food and
Agriculture Issues

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