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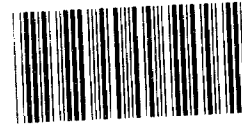
GAO

Briefing Report to Congressional Requesters

June 1988

FARM PAYMENTS

Benefits and Costs of Trading in USDA Commodity Certificates



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United States
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Resources, Community, and
Economic Development Division

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The Honorable Jesse A. Helms
United States Senate

The Honorable Virginia Smith
U.S. House of Representatives

You asked us to review some of the reported abuses involving the use of commodity certificates.¹ In April 1986, the U.S. Department of Agriculture (USDA) began issuing commodity certificates to farm program participants instead of cash payments. The certificates have a face value expressed in dollars and are negotiable. As such, they can be sold back to USDA for cash, sold to other interested parties (e.g., producers and grain companies), exchanged for commodities under price-support loans, or exchanged for commodities in the government's inventory. This last feature, the ability to exchange commodity certificates for government-held commodities, is similar in nature to an earlier farm program known as payment-in-kind (PIK). Under the PIK program, USDA provided commodities directly to farmers instead of cash payments. Because of this similarity, commodity certificates are frequently referred to as "PIK Certificates."

During the first several months of certificate use, there were many reports of abuse among holders of commodity certificates. Specifically, you asked us to review a practice that became known as "long-distance PIK and roll." Using this practice, certain holders of commodity certificates exploited differences in the market value of commodities between different sections of the country. The practice resulted in windfall profits to those who took advantage of it. The practice began shortly after USDA started issuing certificates in April 1986. USDA stopped permitting this practice on October 31, 1986.

¹Senator Helms also asked us to obtain information on the overall costs and uses of commodity certificates. We addressed those issues in an earlier report. See Farm Payments: Cost and Other Information on USDA's Commodity Certificates (GAO/RCED-87-117BR, Mar. 26, 1987).

prohibited by USDA, a long-distance PIK and roll transaction was a further option available to any producer having a price-support loan with USDA. Under this practice, producers were able to obtain even greater benefits by substituting their grain for grain in counties where the difference between the loan rate and the certificate exchange rate was more than in their home county. They were able to do this because USDA allows them to substitute grain they purchased as loan collateral for the grain they actually grew. An example will clarify how this worked.

A producer grew a bushel of corn in county A, where the loan rate was \$1.92 per bushel and the exchange rate was \$1.48 per bushel, both based on local conditions. If the producer chose to use the bushel of corn as collateral for a price-support loan, the producer would receive county A's loan rate of \$1.92 per bushel. The producer could pay off the loan before it is due with a commodity certificate, thereby avoiding storage costs, sell the bushel for \$1.48, and keep the difference (\$0.44) between the loan rate (\$1.92) and exchange rate (\$1.48).

On the other hand, the producer might choose the long-distance PIK and roll option. In that case, the producer would select county B where, based on local conditions, the loan rate for a bushel of corn is \$1.79 and the exchange rate, based on the local market, is \$0.93. In effect, the producer buys a bushel of corn in county B from a local warehouse, uses that bushel of corn as collateral for a price-support loan, and receives \$1.79--the loan rate in county B. The producer then substitutes his or her other loan collateral in county B for the loan collateral in county A and repays the county A loan. The bushel of corn held as collateral in county A is returned to the producer, who promptly sells it for \$1.48, which is the local market price. The producer repays the loan in county B with commodity certificates at the exchange rate of \$0.93 per bushel. The producer keeps the \$0.86 per bushel difference between the loan rate (\$1.79) and the exchange rate (\$0.93) and sells the bushel of corn back to the county B warehouse. The producer realizes an additional gain of \$0.42 a bushel (\$0.86 versus \$0.44).

Producers participating in this practice did not keep the entire additional amount they gained because they had to pay fees to warehouses and/or brokers for the grain they used in the transactions and may have had to purchase certificates to conduct the transaction. To the extent that certificates were purchased, producers may have had to pay premiums. Even after

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ABBREVIATIONS

| | |
|------|--|
| ASCS | Agricultural Stabilization and Conservation Service |
| CCC | Commodity Credit Corporation |
| GAO | General Accounting Office |
| PCP | Posted County Price |
| PIK | Payment-in-kind |
| RCED | Resources, Community, and Economic Development Division |
| USDA | United States Department of Agriculture |

U.S. FARM PROGRAMS AND COMMODITY CERTIFICATES

U.S. farm programs administered by the U.S. Department of Agriculture (USDA) have the objectives of stabilizing farm prices and supporting farm income. USDA carries out these programs through loans, of which there are two types--nonrecourse and farmer-owned reserve--and direct payments, of which there are two principal types--deficiency and diversion payments.

Nonrecourse loans are made to producers of wheat, corn and other feed grains, cotton, rice, and honey at predetermined loan rates set by the Congress and the Secretary of Agriculture. The loan program serves several functions, including providing interim credit to farmers in need of financing, and stabilizing prices by spreading commodity marketing throughout the year. The loan program also effectively sets a floor price because eligible producers can always receive the loan price no matter how low the market price falls.

Producers can obtain loans on all of their eligible production. The loan period is 9 months for most crops. In exchange for commodities a producer places under loan, USDA pays the producer an amount equal to the loan rate per unit. Loan rates vary between crops and according to the locations in which the commodities are stored. The national average loan rate was \$1.84 per bushel for corn and \$2.30 per bushel for wheat during 1986.¹ While the commodity is under loan, the farmer is responsible for storing it. The producer may repay the loan at any time (with accrued interest) during the loan term. When it matures, the producer may either repay the loan (with interest) or forfeit the commodity as full payment, thus the expression "nonrecourse." Forfeited crops become part of the government's inventory.

The farmer-owned reserve is a long-term storage program in which producers agree to store their grain for 3 years and are paid 26.5 cents per bushel per year for storage costs. Unlike a nonrecourse loan, which may be repaid at any time, a reserve loan may not be repaid without penalty unless market prices rise to prescribed release levels. Storage payments cease when release levels are reached.

Deficiency payments are direct payments to producers of wheat, corn and other feed grains, rice, and cotton. Deficiency payments are based on the difference between a government-established target price for a commodity and the higher of the commodity's average market price or its loan rate.

¹National average loan rate adjusted to meet the requirements of the Balanced Budget and Emergency Deficit Control Act of 1985, also known as Gramm-Rudman-Hollings.

\$1.91-per-bushel loan² and accrued interest) and keep the bushel to use or sell at the prevailing market rate, or

-- forfeit the commodity to the government at the end of the loan period (i.e., the Finney County producer would keep the \$1.91-per-bushel loan, incur the cost of storing the commodity for the 9-month term of the loan--about 27 cents per bushel--and then give the corn to the government when the loan matures).

With certificates, producers can effectively repay loans at the commodity's prevailing market price, known as the Posted County Price (PCP),³ which is often lower than the loan rate. Producers can also avoid paying interest and storage costs if they sell the commodity instead of storing it for the term of the loan. For example, the Finney County producer could keep the \$1.91-per-bushel loan and give the government commodity certificates valued at \$1.42--the prevailing market price⁴--and have a commodity valued at \$1.42 per bushel to sell or use. Placing grain under loan and immediately exchanging commodity certificates for the grain is commonly referred to as "PIK and roll."

CERTIFICATE EXCHANGE FOR SUBSTITUTED GRAIN

While some producers benefited from exchanging certificates for their grain under loan, others benefited more by combining certificate exchange with a USDA rule that allowed eligible producers to use purchased commodities stored in warehouses, instead of the commodities they grew, as collateral for price-support loans.⁵ ASCS authorized this practice for wheat,

²This loan rate is for the 1986 corn crop stored in Finney County, Kansas, adjusted for the Gramm-Rudman-Hollings Act.

³ASCS sets PCP certificate exchange prices based on the commodities' current market values rather than on the loan rates. Each business day, ASCS issues sale prices for each of 19 major markets--known as terminal markets. These prices are based on closing market prices of the preceding day. PCPs are then determined by adding to or subtracting from the terminal market price a predetermined differential for each county location. Differentials are intended to reflect factors, such as transportation costs, that determine the price local producers obtain for their commodities.

⁴The Finney County, Kansas, price for corn on October 31, 1986.

⁵The substitution rule also authorizes producers to substitute farm-stored commodities whether they were purchased on-hand or produced on a nonparticipating farm (not eligible for price-support benefits) as farm-stored loan collateral.

How the Process of Exchanging
Certificates for Substituted
Grain Works

The process of exchanging commodity certificates for grain substituted in distant counties--dubbed "long-distance PIK and roll"--began when producers were ready to seek price-support loans. At that point, they had already harvested their eligible crops and stored them either on their farm or in a local warehouse (i.e., in the home county). Producers then applied to their home county ASCS office for a 9-month price-support loan. ASCS verified their production: for farm-stored grain, ASCS physically measured the bushels; for warehouse-stored grain, ASCS accepted warehouse receipts as proof of volume. Finally, ASCS computed the loan amount and paid the producer.

Subsequently, the producers applied to ASCS to substitute their collateral grain for grain located in a distant county offering more favorable loan and certificate-exchange rates. Once approved, producers would purchase grain located in distant warehouses outside of their home county that offered more favorable loan and certificate-exchange rates. They received warehouse receipts as evidence of purchase.

After purchasing the grain, producers went back to their local ASCS office to substitute the grain they purchased for the grain stored in the home county (the original loan collateral). ASCS then rewrote the loans at the distant counties' rates. Once ASCS accepted the warehouse receipts as substitute loan collateral, producers were free to sell their locally stored grain.

After completing the substitution part of the transaction, producers would exchange commodity certificates for the grain under loan. ASCS would consider the loan repaid and release the grain held as collateral by returning the warehouse receipts. Finally, to complete the transaction, producers would sell the distantly stored grain back to the distant-warehouse operator.

The following example shows how this process worked for a Hartley County, Texas, producer who substituted corn located in Cass County, North Dakota, for the grain the producer grew and stored in Hartley County. It compares the benefits the producer received with those that another Hartley County producer who did not substitute but instead exchanged the same number of bushels of corn on the same day--October 1, 1986.

As shown in table 1.1, the producer who substituted, after paying the distant-warehouse operator a 5-cents-per-bushel fee for the use of the grain, received 8 cents more per bushel than the producer who did not substitute.

ASCS Prohibited Long-distance PIK and Roll

ASCS prohibited long-distance PIK and roll transactions effective October 31, 1986. Producers may still exchange certificates for grain under loan, and they may still substitute grain; however, they may not combine the two practices. USDA officials did not anticipate the windfall benefits that producers received from these transactions and said they prohibited them as soon as they identified the problem.

OBJECTIVES, SCOPE, AND METHODOLOGY

We made this review at the request of Senator Jesse A. Helms and Representative Virginia Smith. In accordance with agreements reached with the requesters, our objectives were to identify (1) the volume of grain involved in long-distance PIK and roll transactions, (2) the amount of additional benefits available because of them, (3) the beneficiaries involved, and (4) the cost to the government.

To obtain the needed information, we used ASCS' computerized loan files and records of warehouse locations to identify the universe of warehouse-stored barley, corn, sorghum, soybean, and wheat loans that were located beyond the home county between May 1, 1986, and October 31, 1986, for which producers exchanged commodity certificates. We obtained data for the period May 1, 1986, through October 31, 1986, because long-distance PIK and roll occurred during that time period. Further, we did not include oat or rye loans in our analysis because of the small amounts of those grains that were produced. We also did not include rice loans because the conditions that made certificate exchange for substituted grain beneficial did not exist for rice (i.e., the spread between loan and PCP certificate prices did not change between counties). We did not include cotton or honey because those commodities may not be substituted.

The methodology we used in answering each of the requesters' questions is quite lengthy and complex. Consequently, it is not included in the text of this report. Instead, we fully explain our methodology in appendixes I and II.

We made our review between November 1986 and March 1988 in accordance with generally accepted government auditing standards, except that we did not independently verify the accuracy of ASCS' computerized files. We did, however, consider known limitations in the data files and reconciled discrepancies that would affect our analysis.

Section 2 of this report discusses the volume of grain involved in long-distance PIK and roll transactions. Section 3 describes the additional benefits available because of such

SECTION 2

VOLUME OF SUBSTITUTED GRAIN FOR WHICH
PRODUCERS EXCHANGED COMMODITY CERTIFICATES

SUMMARY

- Producers exchanged commodity certificates for about 412 million bushels of grain stored in locations other than their home county.
- Up to 260 million of those bushels were used in long-distance PIK and roll transactions to gain additional monetary benefits.
- Transactions involving corn were the most frequent, representing 79 percent of all bushels, because it provided greater financial benefits than other grains. Wheat represented over 15 percent of the bushels.

CERTIFICATE EXCHANGE FOR WAREHOUSE-STORED
GRAIN LOCATED BEYOND THE HOME COUNTY

Producers exchanged commodity certificates for about 412 million bushels of grain stored in warehouses outside of the counties in which they took out their loan, as shown in table 2.1. This quantity includes (1) bushels substituted to derive monetary benefits from the more favorable differences between loan rate and PCP, (2) bushels substituted for the intended purpose--to help ease storage problems, (3) bushels physically moved across county borders for storage, and (4) bushels stored in the county in which they were produced and put under loan by their producers, who resided elsewhere.

We estimated the number of bushels that was substituted to take advantage of the more favorable differences between loan rate and PCP on the basis of the amount of additional benefits available from the transaction. We used 5 cents per bushel as a criterion for identifying bushels of substituted grain that could be related to long-distance PIK and roll transactions. Five cents per bushel is an estimate of the minimum additional benefits producers would need to make a long-distance PIK and roll transaction beneficial after considering the costs and fees they would have incurred to complete the transaction. Our 5-cents-per-bushel criterion was based on discussions with producers, grain companies, and extension economists. The range of fees producers paid for these transactions and our basis for using the 5-cents-per-bushel criterion are described in detail in appendix I.

Figure 2.1 shows the volume of grain located outside the counties where the producer took out the loan by the amount of additional benefits available.

VOLUME OF GRAIN USED IN LONG-DISTANCE
PIK AND ROLL TRANSACTIONS

Table 2.2 shows the volume of grain for which producers derived at least 5 cents more per bushel by substituting for their grain than if they had stored the grain in their home county. This is the volume of grain that we believe may have been substituted to gain additional benefits from long-distance PIK and roll.

As shown in figure 2.2, corn was by far the most frequently substituted grain, representing about 79 percent of the total substituted amount. Wheat substitutions accounted for over 15 percent. In our analysis, we did not find instances where producers substituted soybeans for additional benefit.

Corn was the most frequently exchanged grain by volume primarily because it provided greater financial benefits than other grains. Also, since corn had lower PCPs relative to the loan rate than other grains, more bushels of corn could be exchanged per certificate dollar. In addition, because producers were free to sell exchanged bushels, they could avoid further storage expenses. While all producers would benefit from exchanging certificates for grain under loan--substituted or not--because they could free up storage space for other grain, this may have provided an added incentive in the Corn Belt, where a shortage of storage space was predicted for the period in which these transactions occurred. (Figure 2.3 shows that producers in Indiana, Illinois, and several other Corn Belt states substituted large amounts of grain.)

Locations of Producers and Warehouses
Involved in Long-distance PIK and Roll

Table 2.3 shows the volume and location of all long-distance PIK and roll grain, by state (i.e., the distant-warehouse locations). More than 90 percent of all grain was located in six states. North Dakota alone accounted for more than 80 percent of the substituted grain. This occurred because North Dakota typically had the largest spreads between the loan rate and the PCP certificate prices; therefore, producers could obtain the most benefits by substituting in North Dakota.

Figure 2.3 shows the volume of long-distance PIK and roll grain by state in which the producers took out the loan (i.e., the home states). Of all grain, 77 percent was exchanged by producers in seven states. Indiana producers substituted more grain than producers in other states. Indiana was followed by North Dakota, Illinois, Nebraska, Texas, Kansas, and Minnesota.

Distant Locations Had More Favorable
Differences Between Loan Rate and PCP

As discussed in section 1, there were additional benefits from substitution because the price spread between the loan rate and the PCP certificate price for grain in the distant county exceeded the spread in the home location. As shown in figure 2.4, producers substituted their grain for grain in locations with greater price differences between the loan rate and the PCP than the difference in their home counties.

As requested, this report estimates (1) the volume of grain that was involved in long-distance PIK and roll transactions, (2) the monetary benefits derived from this practice, (3) how those benefits were distributed among producers, sellers of certificates, warehouse operators, and others involved in the transaction, and (4) the costs of long-distance PIK and roll to the government.

In summary, the information we collected shows the following:

- About 260 million bushels of grain were used in long-distance PIK and roll transactions.
- Producers received an estimated \$109.1 million from these transactions, although their ultimate monetary gains were between about \$43.2 million and \$64.5 million, after paying certificate premiums and transaction fees.
- Of the \$109.1 million, we estimate that producers paid to warehouse operators, brokers, and other producers between \$18.6 million and \$26.9 million in added premiums to cover the cost of commodity certificates. Producers also paid between \$26 million and \$39.1 million in fees for the use of the grain located in the distant warehouses. Some of those fees were paid to brokers as compensation for bringing the producers and the warehouse operators together.
- Long-distance PIK and roll transactions had a net cost to the government of \$131 million to \$148 million, according to our estimates. The net cost to the government of long-distance PIK and roll reflected several factors, including (1) an increase in loan outlays that occurred, in part, because these transactions caused lower grain prices, thereby increasing the amount of grain placed under loan or decreasing loan repayments, (2) a decrease in direct cash payments that occurred when certificates were issued instead of cash, and (3) a decrease in government storage expenses. As such, government costs from these transactions are not the same as the benefits available to producers.

Under the PIK Certificate program, because price-support loan rates often exceeded the certificate price exchange rates, producers were able to obtain additional benefits by putting their commodities under loan and then exchanging certificates for the commodities held as collateral. Until it was

considering such expenses, however, many producers gained substantially through long-distance PIK and roll.

- - - - -

Section 1 of this report provides background information on the program and describes how substitution and certificate exchange provisions were combined to obtain additional benefits. Sections 2 and 3, respectively, discuss the volume of grain used in long-distance PIK and roll transactions and the amount of additional benefits available because of them. The distribution of benefits among producers, certificate sellers, warehouse operators, and others is discussed in section 4, and government cost from the transactions is detailed in section 5.

Information in this report was obtained from the following: USDA computerized loan files; USDA manual records of county loan rates and the differentials and daily terminal market prices used to establish daily certificate exchange rates; and interviews with USDA officials, officials of grain companies, agricultural economists who monitor producer grain transactions, and producers. Appendixes I and II provide more detail on our methodology.

We discussed the information contained in this report with USDA officials, who generally agreed with its contents. However, as agreed with your offices, we did not obtain official agency comments on a draft of this report.

We plan to release this briefing report at the same time it is presented to you. At that time, we will send copies to the Director, Office of Management and Budget; the Secretary of Agriculture; and other interested parties. Copies will be available to others upon request. If you have further questions regarding the information contained in this briefing report, please contact me at (202) 275-5138.

Major contributors to this briefing report are listed in appendix IV.



Brian P. Crowley
Senior Associate Director

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SECTION 1

INTRODUCTION

SUMMARY

- USDA uses commodity certificates, issued in dollar denominations, in combination with cash, primarily to make payments to producers participating in farm programs. Between April 1986, when USDA began issuing commodity certificates, and February 29, 1988, about \$18.1 billion in commodity certificates were issued.
- Commodity certificates can be (1) exchanged for commodities pledged as collateral for price-support loans, (2) exchanged for government-owned commodities, (3) sold back to USDA for cash, or (4) sold to others. When exchanged for commodities under loan or in inventory, the amount of commodities (i.e., bushels, pounds, etc.) that may be obtained for a given amount of certificates is based on the commodities' current market price, not the price-support loan rate.
- Because price-support loan rates often exceeded the certificate price exchange rates, producers were able to obtain additional benefits by putting their commodities under loan and then exchanging certificates for the commodities held as collateral.
- Many producers obtained even greater benefits by substituting their grain for grain in counties where the difference between the loan rate and the certificate exchange rate was even greater than in their home county. They were able to do this because USDA allows them to substitute grain they purchased as loan collateral for the grain they actually grew.
- USDA prohibited the practice of combining certificate exchanges with substitution of loan collateral effective October 31, 1986.

Diversion payments compensate farmers--who voluntarily reduce their planted acres--for the crops they could have grown on those acres. Diversion programs are part of overall acreage-reduction programs used as a means of reducing supplies of surplus commodities and stabilizing commodity prices.

USDA administers farm programs through its Agricultural Stabilization and Conservation Service (ASCS) and the Commodity Credit Corporation (CCC). CCC, a wholly owned government corporation, has no operating personnel. Its day-to-day activities are carried out by ASCS.

The Food Security Act of 1985 (P.L. 99-198) authorizes the Secretary of Agriculture to issue negotiable commodity certificates to eligible producers instead of a portion of the cash payments due them for their participation in government price- and income-support programs for wheat, feed grains, rice, and cotton. Certificates are also being used to make in-kind payments for other USDA programs. From April 1986, when the Secretary first used this authority, through February 29, 1988, USDA had issued approximately \$18.1 billion in commodity certificates. About three-fourths of the certificates have been issued to producers instead of cash deficiency and diversion payments.

Commodity certificates can be exchanged for commodities under nonrecourse and farmer-owned reserve price-support loans. In addition, certificates can be sold back to CCC for cash, sold to other interested parties (e.g., farmers or grain companies), or exchanged for commodities held in CCC inventory (except for sugar and honey). The use of commodity certificates to obtain government inventory is similar to USDA's 1983 Payment-in-Kind (PIK) program. Under the PIK program, USDA paid producers with commodities instead of cash to compensate them for taking land out of production. Because of this similarity, commodity certificates are commonly referred to as "PIK Certificates." This report concerns only the first use of commodity certificates--those exchanged for commodities under loan.

EXPLANATION OF CERTIFICATE EXCHANGE TRANSACTIONS

Commodity certificates have expanded producers' options for repaying their price-support loans. Before commodity certificates were authorized, producers could

- repay their loans at the loan rate plus accrued interest (i.e., a producer in Finney County, Kansas, would repay the

feed grains, soybeans, and rice in 1982, when producers were having trouble finding local warehouse space to store their commodities for the 9-month term of the loan. (Cotton and honey may not be substituted.) Rather than transporting their grain to distant warehouses, the producers could buy grain already in those distant warehouses and use it as their loan collateral. This saves producers the extra cost of transporting their grain, allows them to sell the grain they produced, and still allows them to obtain the price-support benefits of the loan.

Eligible grain producers who use their grain to feed livestock instead of selling it also benefit by substituting. Without substitution, livestock feeders wanting to obtain the benefits of a price-support loan would have to purchase grain for feed and store the grain they produced for the loan's duration. Substitution allows them to use the warehouse-stored grain that they purchased as loan collateral and feed their livestock with the grain they produced. Thus, they avoid the cost of transporting the feed to their farms.

By combining the practice of substitution with their certificate exchange transactions, many producers received benefits that were not intended by USDA. Until USDA prohibited the practice on October 31, 1986, many producers substituted warehouse-stored grain located in counties with greater differences between the loan rate and PCP for their grain under loan and then exchanged certificates for the substituted bushels under loan. (The greater price differences existed because loan rates and PCPs vary between counties).

Producers involved in these transactions often received lower loan rates per bushel, but they benefited because they exchanged more bushels per dollar value of certificate and were able to sell the grain that they produced at more than the certificate cost of the bushels. For example, the spread between loan rate and PCP in Finney County, Kansas, on October 31, 1986, was 49 cents per bushel (\$1.91 loan less \$1.42 PCP). In Ramsey County, North Dakota--one of the locations where producers substituted grain--the spread on the same day was 88 cents per bushel (\$1.75 loan rate less an \$0.87-per-bushel corn PCP). A Finney County producer who exchanged certificates for corn located in Finney County would keep the 49-cents-per-bushel spread between the loan rate and PCP and have a bushel of corn valued at \$1.42 after the transaction was completed (a total of \$1.91). If the same producer exchanged certificates for substituted grain located in Ramsey County, he would keep the 88-cents-per-bushel spread and have a bushel of corn valued at \$1.42 (a total of \$2.30).

Table 1.1

Comparison of the Net Benefits From Loan and Certificate
Exchange by One Producer Who Substituted and One Who Did Not
(Assume Both Producers Had 10,000 Bushels of Grain Under Loan)

| | | | |
|----------|--|--------------------------|-----------------------|
| A | Hartley County, Tex., loan rate | \$1.99 | |
| B | Hartley County, Tex., PCP | \$1.73 | |
| C | Hartley County, Tex., market price | \$1.73 | |
| D | Cass County, N. Dak., loan rate | \$1.75 | |
| E | Cass County, N. Dak., PCP | \$1.31 | |
| F | Cass County, N. Dak., market price | \$1.31 | |
| | | | |
| | | Producer A | Producer B |
| | | <u>(no substitution)</u> | <u>(substitution)</u> |
| | | | |
| <u>G</u> | Bushels harvested to be placed under loan | 10,000.00 | 10,000.00 |
| H | Loan proceeds disbursed (A * G) | \$19,900.00 | \$19,900.00 |
| I | Purchase warehouse stored grain in Cass County, N. Dak., (F * G) | N/A | \$13,100.00 |
| J | Substitute warehouse receipts: | | |
| J1 | Repay the Hartley County loan | N/A | \$19,900.00 |
| J2 | Receive Cass County loan (D * G) | N/A | \$17,500.00 |
| K | Purchase commodity certificates and exchange them for the 10,000 bushels (B * G) or (E * G) | \$17,300.00 | \$13,100.00 |
| L | Sale of corn in Cass County, N. Dak., for 5 cents per bushel less than purchase price—fee paid to warehouse operator (E - \$0.05) * G | N/A | \$12,600.00 |
| M | Sale of corn in Hartley County, Tex. (C * G) | \$17,300.00 | \$17,300.00 |
| N | Price received from transaction (H - I - J1 + J2 - K + L + M) | \$19,900.00 | \$21,200.00 |
| | Per-bushel price received | \$1.99 | \$2.12 |

transactions, and section 4 describes how those benefits may have been distributed among producers, warehouse operators, and others involved in the transactions. Section 5 describes the government cost from long-distance PIK and roll. Appendix III lists warehouses where more than 1 million bushels of grain were involved in long-distance PIK and roll transactions.

Table 2.1

Volume of Grain Located Beyond Producers' Home Counties for Which Producers Exchanged Commodity Certificates

| <u>Grain type</u> | <u>Bushels</u> |
|-------------------|---------------------------|
| Corn | 331,728,709 |
| Wheat | 53,812,599 |
| Soybeans | 26,028 |
| Sorghum | 20,288,120 |
| Barley | 6,544,001 |
| Total | <u>412,399,457</u> |

Figure 2.1

Volume of Grain Located Beyond Producers' Home Counties by Range of Benefits Available From the Transaction

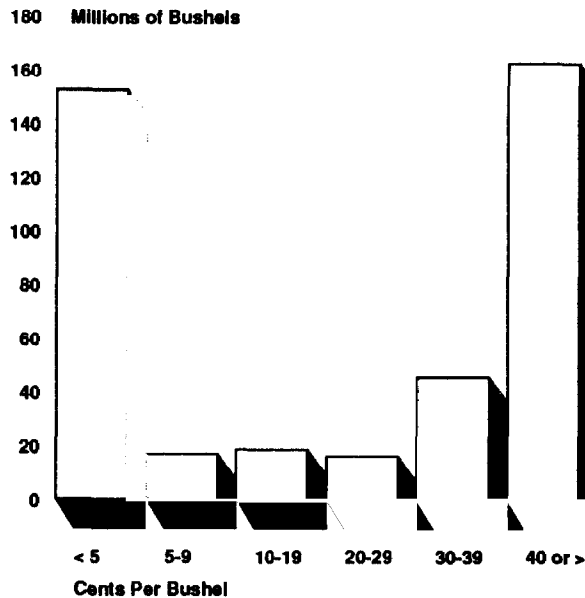


Table 2.2

Volume and Type of Grain Substituted
for Additional Benefits

| <u>Grain type</u> | <u>Substituted bushels</u> |
|-------------------|----------------------------|
| Corn | 205,947,325 |
| Wheat | 40,212,487 |
| Sorghum | 10,822,229 |
| Barley | <u>3,416,248</u> |
| Total | <u>260,398,289</u> |

Figure 2.2

Percentage of Substituted Grain by Grain Type

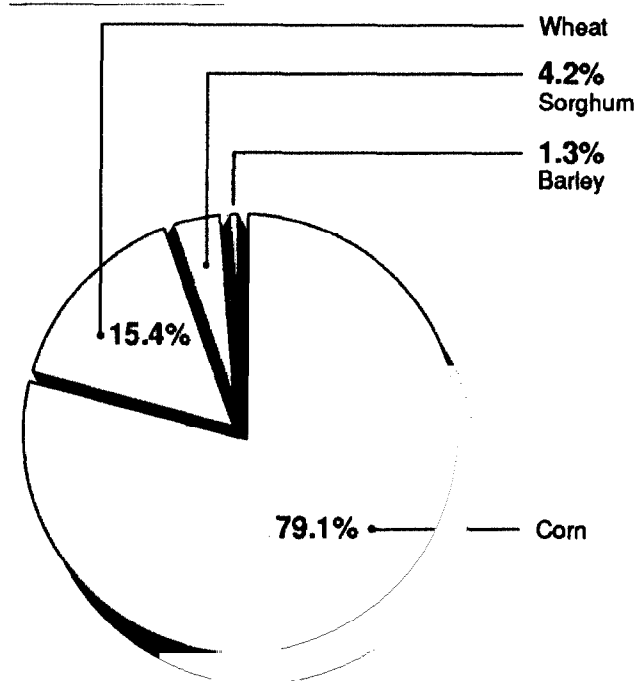


Table 2.3

Volume of Substituted Grain by Warehouse Locations

| <u>Warehouse location</u> | <u>Number of bushels</u> | <u>Percentage of total</u> |
|---------------------------|--------------------------|----------------------------|
| North Dakota | 208,740,452 | 80.16 |
| South Dakota | 7,141,122 | 2.74 |
| Illinois | 6,130,433 | 2.35 |
| Mississippi | 6,001,618 | 2.30 |
| Kansas | 5,140,239 | 1.97 |
| Minnesota | 4,144,878 | 1.59 |
| Others | <u>23,099,545</u> | <u>8.89</u> |
| Total | <u>260,398,287</u> | <u>100.00</u> |

Figure 2.3

Percentage of Substituted Grain by Producer Location

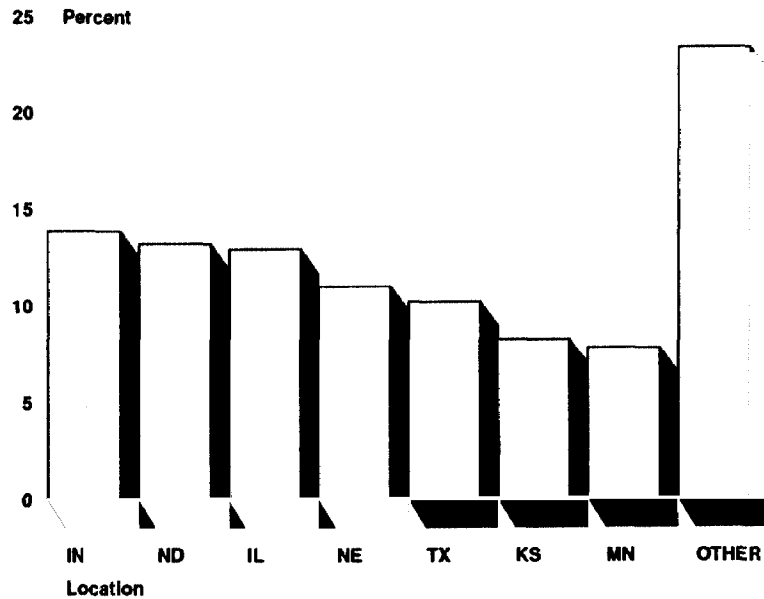
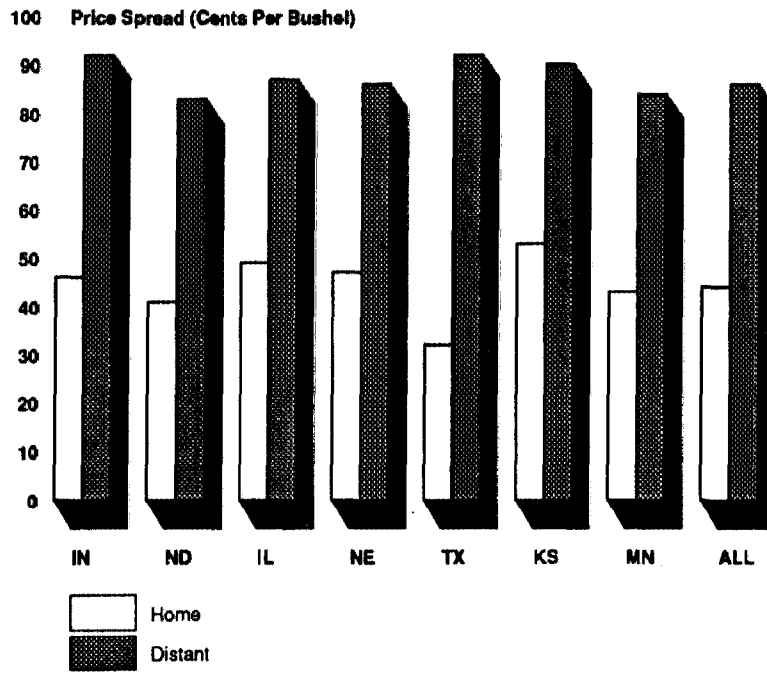


Figure 2.4

Comparison of Price Spread Between Loan Rate and PCP



SECTION 3

BENEFITS AVAILABLE FROM
LONG-DISTANCE PIK AND ROLL

SUMMARY

- Up to \$109 million, or 42 cents per bushel, in additional benefits were available because of long-distance PIK and roll. The benefits were available primarily because the difference between the distant county loan rate and the certificate exchange rates was greater than in the producers' home counties.

- Certificate exchanges for substituted corn accounted for about 80 percent of the additional benefits. About 16 percent of the benefits resulted from certificate exchanges for wheat.

Table 3.1

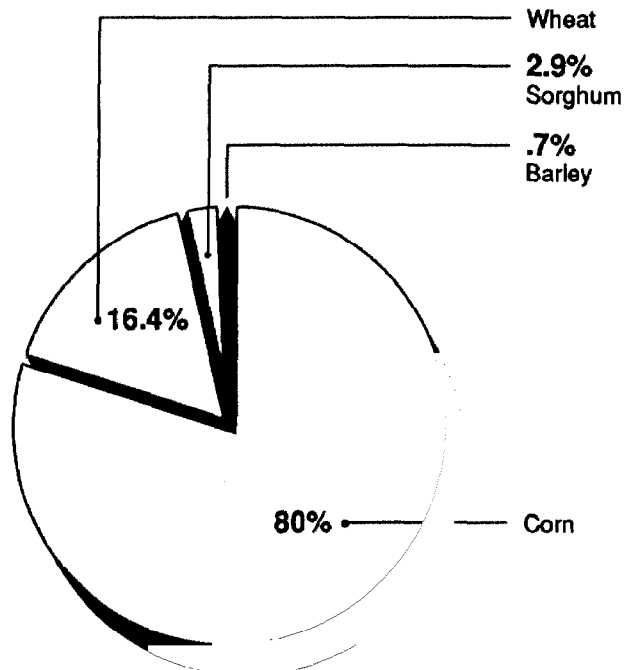
Benefits Available by Grain Type

| <u>Grain type</u> | <u>Additional benefits</u> | |
|-------------------|----------------------------|-------------------|
| | <u>Total^a</u> | <u>Per bushel</u> |
| Corn | \$ 87,350,985 | \$0.42 |
| Wheat | 17,876,044 | 0.44 |
| Sorghum | 3,154,459 | 0.29 |
| Barley | 740,717 | 0.22 |
| Total | <u>\$109,122,205</u> | \$0.42 |

^aThe benefits were calculated by adding the benefits available from individual transactions.

Figure 3.1

Percentage of Additional Benefits for Each Grain Type



BENEFITS FROM LONG-DISTANCE
PIK AND ROLL

Up to \$109 million in benefits were available from certificate exchange for substitute grain. The benefits were not direct program payments, but were derived primarily because producers were able to exchange bushels at a lower price relative to the loan rate in the distant counties than in their home location (at a lower price than the price for which they, in turn, could sell their grain). Although the benefits were not direct payments, as discussed in section 5, these transactions ultimately will increase government costs.

Benefits by Grain Type

Table 3.1 shows that most benefits resulted from corn transactions--about \$87.4 million. About \$17.9 million was the result of wheat transactions--\$3.2 million from sorghum and \$740,717 from barley. The benefits were substantial when compared with the loan rate in the producers' home counties. The average per-bushel benefit was 42 cents per bushel, as compared with an average \$2.00 loan rate.

Figure 3.1 shows the percentage of total additional benefits each commodity represented. The percentages are consistent with the percentage that each grain represented of the volume substituted.

Table 3.2

Additional Benefits Available by Producer Location

| <u>Producer location</u> | <u>Total benefits available</u> | <u>Percentage of total</u> |
|--------------------------|---------------------------------|----------------------------|
| Indiana | \$ 16,490,786 | 15.11 |
| Texas | 16,128,374 | 14.78 |
| North Dakota | 14,559,713 | 13.34 |
| Illinois | 12,941,240 | 11.86 |
| Nebraska | 11,092,578 | 10.17 |
| Minnesota | 8,224,034 | 7.54 |
| Others | <u>29,685,480</u> | <u>27.20</u> |
| Total | <u>\$109,122,205</u> | <u>100.00</u> |

BENEFITS BY STATE

Table 3.2 shows the benefits available from long-distance PIK and roll by the location of the producer. Transactions by producers in the top six states accounted for more than 70 percent of all the benefits.

SECTION 4

DISTRIBUTION OF BENEFITS

SUMMARY

- The \$109.1 million in additional benefits available from long-distance PIK and roll was shared between producers, sellers of certificates, warehouse operators, and brokers.
- Producers' net gain from long-distance PIK and roll depended on (1) whether they paid premiums for the certificates they used in the transactions, (2) the fees they paid distant-warehouse operators for the use of the grain located in the distant county, and (3) the fees, if any, they paid to brokers and/or others who helped arrange the transaction.
- We estimate that producers paid sellers of certificates between \$18.6 million and \$26.9 million more for the certificates they used in these transactions than they would have in the absence of long-distance PIK and roll.
- In addition, we estimate that producers paid between \$26 million and \$39.1 million in fees to warehouse operators and brokers who helped them to arrange these transactions.
- As a result, we estimate that producers retained between \$43.2 million and \$64.5 million, depending on the amount of premiums they paid for certificates and fees they paid to warehouse operators and brokers.

Table 4.1

Amounts Producers May Have Paid for Certificates

| <u>Commodity</u> | <u>No premium</u> | <u>Net certificate costs^a</u> | |
|------------------|----------------------|--|----------------------|
| | | <u>Low premium</u> | <u>High premium</u> |
| Corn | \$193,191,714 | \$207,614,840 | \$214,283,452 |
| Wheat | 64,760,338 | 67,732,028 | 68,793,213 |
| Sorghum | 12,385,164 | 13,348,062 | 13,788,769 |
| Barley | <u>3,476,419</u> | <u>3,746,602</u> | <u>3,813,171</u> |
| Total | <u>\$273,813,635</u> | <u>\$292,441,532</u> | <u>\$300,678,605</u> |
| Cost of premiums | \$0 | \$18,627,897 | \$26,864,970 |

^aBased on Commodity News Service daily low and high certificate bid prices, reduced by our estimate of what premiums may have been, had these transactions never occurred.

PRODUCERS PAID SOME OF THE BENEFITS TO OTHERS

Producers paid some of the benefits that they derived from long-distance PIK and roll to others who helped them to complete the transaction--sellers of certificates, warehouse operators, and brokers.

Benefits Paid for Certificate Premiums

Since commodity certificates were first issued, they have normally sold at a premium over their dollar value. For example, a producer may have paid \$1.25 for a \$1 certificate; however, that certificate would still buy only \$1 in grain. During the period these transactions were allowed, bid prices reported by the Commodity News Service were as high as 136 percent of face value. Producers were willing to pay premiums because the benefits that certificates provide--such as those from long-distance PIK and roll--exceeded the premiums.

As shown in table 4.1, producers paid between \$18.6 million and \$26.9 million more for the certificates they used in long-distance PIK and roll transactions than they would have had the transactions not been allowed. We estimated the portion of total premiums paid that were due to long-distance PIK and roll by using low and high bid prices reported by the Commodity News Service, reduced by our estimate of what premiums would have been in the absence of these transactions. Appendix I describes premiums, their effect on certificate costs, and how we estimated the premiums producers may have paid.

The premiums are not necessarily profits to persons or companies who sold the certificates because they themselves may have paid premiums for the certificates. Some persons may have sold certificates at a loss because certificate premiums, at times, dropped.

Transaction Fees

The number of persons involved in and fees paid for long-distance PIK and roll varied between transactions, making it difficult to estimate precisely what part of the benefits producers received was paid to warehouse operators and brokers. Four examples follow that show this variation. Although the first example is hypothetical, it is representative of a long-distant PIK and roll transaction based on ASCS officials' comments and trade publications. The other examples recount actual occurrences. Examples 1 through 3 show that warehouse operators' and brokers' fees depended on the number of people participating in the transaction. Similar transactions may also involve different fees, as exhibited in examples 2 and 4. All figures are adjusted to reflect budget savings required by the Gramm-Rudman-Hollings Act.

Example 1

On October 29, 1986, Farmer 1, a Marshall County, Minnesota, producer, learned about substitution through a trade journal article. Farmer 1 drove about 100 miles to Ramsey County, North Dakota--a location reported to have low PCPs for grain--where Farmer 1 purchased corn and received warehouse receipts as evidence of ownership. The farmer returned to the Marshall County ASCS office and (1) substituted warehouse receipts for the grain under loan, (2) exchanged commodity certificates for the substituted grain, and then (3) drove back to Ramsey County, North Dakota, to sell the grain back to the warehouse for 5 cents per bushel less than the farmer had paid for it.

The distant loan rate was \$1.75 and the distant PCP for corn was \$0.86--a spread of 89 cents. The adjusted home loan rate was \$1.70, and the adjusted home PCP for corn was \$1.15--a spread of 55 cents. Therefore, additional benefits of 34 cents per bushel were available from this transaction. The producer paid the warehouse operator a 5-cent fee, or 14.7 percent of the benefits received.

Example 2

Farmer 2, a Waseca County, Minnesota, producer, learned about the additional benefits from certificate exchange for substituted grain from a warehouse when he checked on the availability of storage space for his 1986 crop. He asked the home warehouse operator to arrange the transaction with a Pembina County, North Dakota, warehouse. (The distant warehouse was affiliated with the producer's home warehouse.)

The distant loan rate was \$1.75 and the distant PCP for corn was \$0.94 on October 31, 1986--the day of the transaction--a spread of 81 cents. The home loan rate was \$1.71, and the home PCP for corn was \$1.21--a spread of 50 cents. The additional benefits available from the transaction were 32 cents per bushel. Of that amount, Farmer 2 paid the distant-warehouse operator 5 cents per bushel for the use of the grain and the home warehouse operator 5 cents per bushel for arranging the transaction, or 32.26 percent of the total benefits received by the producer.

Example 3

Farmer 3, a Barton County, Kansas, producer, read in farm journals about the additional benefits from certificate exchange for substituted grain. He learned more about the transaction from two brokers who arranged the transaction through a Pembina County, North Dakota, warehouse.

The distant loan rate was \$1.75 and the distant PCP for corn was \$0.94--a spread of 81 cents. The adjusted home loan rate was

\$1.88, and the home PCP for corn was \$1.42--a spread of 46 cents. The benefits available from this transaction were 35 cents per bushel. Of that amount, the farmer paid 13.5 cents per bushel to the distant-warehouse operator for the use of the substitute grain, 16.5 cents per bushel to the broker who arranged the transaction, and 1 cent per bushel to his home-warehouse operator. These fees represented 89 percent of the total benefits received by the producer. This producer told us that he netted 22.8 cents per bushel on the transaction after paying certificate premiums because he sold his grain for more than the market price used in our calculation.

Example 4

Farmer 4, a Finney County, Kansas, producer, was asked by representatives of three different grain companies to substitute grain. He substituted with the company that still had commodity certificates available when he was ready to substitute--after he had completed his harvest and had researched the transaction.

The distant loan rate was \$1.75 and the distant PCP for corn was \$0.87--a spread of 88 cents. The adjusted home loan rate was \$1.91, and the home PCP for corn was \$1.42--a spread of 49 cents. The additional benefits available from the transaction was 39 cents per bushel. Of that amount, the producer paid the distant Ramsey County, North Dakota, warehouse operator 10 cents per bushel for the use of the grain and the home county grain company 10 cents per bushel for arranging the transaction. The fees paid were 51 percent of the available benefits. The producer told us that he sold his grain for more than the home PCP used in our benefit calculation by contracting to sell later in the year. He said that he netted about 35 cents more per bushel than had he not substituted, even after paying premiums for most of the certificates used in the transaction.

Table 4.2

Distribution of Benefits Between Producers and
Other Long-Distance PIK and Roll Participants

| | <u>No premium</u> | <u>Certificate costs</u> | |
|---------------------------|-------------------|--------------------------|---------------------|
| | | <u>Low premium</u> | <u>High premium</u> |
| Benefits available | \$109,122,205 | \$109,122,205 | \$109,122,205 |
| Paid for certificates | 0 | 18,627,897 | 26,864,970 |
| Warehouse and other fees: | | | |
| 10 cents per bushel | 26,039,829 | 26,039,829 | 26,039,829 |
| 15 cents per bushel | 39,059,743 | 39,059,743 | 39,059,743 |
| Retained by producer at: | | | |
| 10 cents per bushel | 83,082,376 | 64,454,479 | 56,217,406 |
| 15 cents per bushel | 70,062,462 | 51,434,565 | 43,197,492 |

Our estimate of the amount producers paid in transaction fees is based on a fee range of 10 cents to 15 cents per bushel. We used this range on the basis of our discussions with producers, warehouse operators, brokers, and agricultural extension economists.

Using fees of 10 cents and 15 cents per bushel, as shown in table 4.2, producers may have paid between \$26 million and \$39.1 million to warehouse operators and brokers for assisting in the transactions. Appendix III lists the 52 warehouses with more than 1 million bushels of long-distance PIK and roll volume. These warehouses accounted for about 210 million, or about 81 percent, of all grain involved in long-distance PIK and roll. Those warehouse operators did not always receive the entire fee; a portion may have been paid to brokers who helped arrange the transaction. We did not identify the extent to which brokers received part of the fees.

As agreed with the requesters, we did not determine the extent to which warehouse operators and brokers profited from the fees they charged because we did not have access to data on the expenses they incurred. These expenses were administrative in nature and in general did not include physical handling of the grain. In comparison, however, we noted that ASCS paid warehouse operators about 19 cents per bushel on average during this time period for physically and administratively handling its inventory. This fee covered warehouse costs of receiving grain (unloading, weighing, inspecting, and moving grain to storage) and shipping grain (removing from storage, weighing, inspecting, and loading for transport).

Benefits Retained by Producers

If producers paid no premiums, they would have retained between \$70.1 million (15-cents-per-bushel warehouse fee) and \$83.1 million (10-cents-per-bushel warehouse fee) as shown in table 4.2. After paying premiums for certificates and warehouse fees, we estimate producers retained between \$43.2 million and \$64.5 million. On a per-bushel basis, producer benefits would be between 17 cents and 25 cents per bushel.

SECTION 5

GOVERNMENT COST FROM LONG-DISTANCE PIK AND ROLL

SUMMARY

- Use of commodity certificates in long-distance PIK and roll transactions increased government costs by about \$131 million to \$148 million more than if certificates were used for other purposes such as being exchanged for commodities in the producers' home locations.

- Government cost from commodity certificates is determined by the extent to which (1) direct cash payments for certain farm programs decrease, (2) net loan outlays increase, and (3) storage and related expenses are avoided.

GOVERNMENT COST FROM
LONG-DISTANCE PIK AND ROLL

Long-distance PIK and roll, on the basis of our estimates, added \$131 million to \$148 million to government costs. This occurred because long-distance PIK and roll transactions caused more grain to be placed under loan or caused fewer cash loan repayments. In part, the increase in loans and decrease in repayments were prompted by lower grain prices due to the increased amount of grain coming onto the market. The increase in the amount of grain on the market was, to some degree, caused by long-distance PIK and roll transactions.

How Commodity Certificates
Affect Government Cost

Government cost from commodity certificates, whether the certificates were used in exchange for government-owned inventory or for grain under loan, is determined by the extent to which (1) direct cash payments for deficiency, diversion, and other programs decrease, (2) net loan outlays increase, and (3) storage and related expenses are avoided. Direct cash payments decrease when certificates are issued because certificates, unlike cash payments, are not treated as budgetary expenditures. "Net loan outlay" refers to the amount of cash disbursed to producers as price-support loans minus the amount of cash returned by producers who repaid their loans. When loans are paid with cash, the loan outlays are returned to USDA, and there is no net expenditure. Storage expenses are avoided by certificate exchanges when CCC-owned stocks are reduced and when producers exchange certificates for grain under loan rather than by forfeiting it.

Certificates cause net loan outlays to rise--more grain to be placed under loan or fewer cash loan repayments--directly and indirectly. Net loan outlays directly increase when producers put bushels under loan that they would not have in the absence of certificates or would have placed under loan but then paid the loan back in cash. (For instance, a dairy farmer who grows corn may normally not place the corn under loan because it is needed for feed). However, with certificates, the producer could put grain under loan and immediately exchange it for certificates making it available for feed. By this transaction, the producer could capture the difference between the loan rate and the PCP--thus receiving the benefits of the price-support loan without having to store the corn.

An indirect increase occurs when the bushels exchanged were bushels producers would have placed under loan in the absence of substitution and the loan would have been settled by forfeiting the crops to the government. Although these bushels do not directly increase loan outlays, they indirectly cause other bushels to be placed under loan because certificate exchange results in an

increase in free stocks (stocks available to the market and not held as collateral on loans or as part of government inventories), which tends to reduce grain prices. And, although use may increase somewhat, the price decline causes other grain that would have been marketed to be put under loan, and grain under loan that would have become available to the market through cash loan repayment to be forfeited to the government.

Earlier, at the request of Senator Helms, we estimated government cost from all certificates exchanged through February 1987.¹ On the basis of data available at that time, we estimated that the \$3 billion commodity certificates exchanged through February 1987 would result in a \$2.983 billion reduction in cash program outlays,² a \$169 million to \$253 million reduction in storage expenses, and an increase in net loan outlays of between \$3.09 billion and \$3.636 billion. This represents possible budgetary effects ranging from a savings of \$146 million to a cost of \$484 million. Increased net loan outlays were the primary element in our earlier cost estimate.

Long-distance PIK and Roll Cost Calculation

In this analysis, we estimated government cost from just those certificates used in long-distance PIK and roll transactions. We estimated cost in the same manner as we did in our earlier report. However, in this analysis, we used actual instead of estimated loan-rate-to-PCP values and data on the portion of certificates used in exchange for each crop. Net loan outlays were the primary variable determining long-distance PIK and roll cost because certificate issuances and storage costs avoided were not affected by these transactions.

The number of additional bushels producers could exchange in these transactions was limited by the dollar amount of certificates they had available. For a given certificate amount, producers could exchange more bushels in the distant locations because of the lower PCP--and therefore could place more bushels under loan. Because of the higher PCP in their home locations, they could exchange fewer bushels there--they therefore could put fewer bushels under loan.

¹See Farm Payments: Cost and Other Information on USDA's Commodity Certificates (GAO/RCED-87-117BR, Mar. 26, 1987).

²Our analysis was based on certificate exchanges valued at \$3.007 billion. The reduction in cash payments was \$2.983 billion, reflecting reductions made for the Gramm-Rudman-Hollings Act.

The low end of our estimate--\$131 million--is the cost, assuming that these transactions indirectly increased net loan outlays by causing an additional eight-tenths bushel to be placed under loan for every bushel exchanged. The high estimate--\$148 million--was made assuming that those transactions directly increased net loan outlays.

Improved Data Suggest That Costs for
All Certificate Costs Were Higher
Than Previously Reported

Our March 1987 cost estimate was based on available data and estimates for all certificates exchanged through February 1987. Using those values, we estimated a net loan increase ranging between \$3.09 billion to \$3.636 billion and budgetary effects ranging from a \$146 million savings to a \$484 million cost.

Using the actual data determined from long-distance PIK and roll transactions, it now appears that the higher end of our earlier estimate for all certificates exchanged was closer to the actual cost. The data for long-distance PIK and roll transactions, which represent about 9 percent of the certificates exchanged through February 1987, show that government costs for these certificate transactions were significantly higher than had previously been estimated. When our earlier estimates are updated to reflect this actual cost data, then the cost for all certificates exchanged also increases to about the higher end of our earlier estimate. In addition, even if these certificate exchanges had taken place in the home county instead of the distant county, the associated costs would still have been at the higher end of our earlier estimate.

OBJECTIVES, SCOPE, AND METHODOLOGY

We reviewed long-distance PIK and roll transactions in response to requests by Representative Virginia Smith, dated October 31, 1986, and Senator Jesse A. Helms, dated November 12, 1986. This appendix describes our methodology for determining (1) the volume of substituted grain for which producers exchanged commodity certificates, (2) what benefits were available to producers and others because of the transaction, (3) how those benefits were distributed, and (4) the government's cost.

OBJECTIVE 1

Determine the volume of grain involved in long-distance PIK and roll.

Scope

Our universe comprised warehouse-stored grain under loan outside of the producers' home counties and grain for which the producers exchanged commodity certificates between May 1 and October 31, 1986. We did not consider all commodities: rye and oats are produced in comparatively small amounts, rice does not yield extra benefits through the transaction, and cotton and honey by regulation may not be substituted. In addition, we excluded all long-distance loan transactions that did not yield at least 5 cents per bushel in additional benefits over those that were available in the home county.

Because ASCS did not have readily available information on loans taken out for substituted grain, we had to derive this universe from other ASCS records on loan transactions.

Methodology

We determined the volume of grain involved in long-distance PIK and roll in three steps. We

- established a universe of all loans for grain (i.e., barley, corn, sorghum, soybeans, and wheat) stored outside of the county in which the loans were made and for which producers exchanged commodity certificates,
- developed a criterion for differentiating long-distance PIK and roll transactions from other transactions within this initial universe, and

-- tested the reasonableness of our criterion.

Establish a Universe of Loans

We had to identify the universe of loans for substituted grain because ASCS' computerized loan system was not designed to report this information. The system did, though, have data on loans for which producers exchanged certificates. By comparing the state and county code of the ASCS office making the loan with the codes of the warehouse where the grain was stored, we identified loans for grain stored outside of the counties where the loan was made and for which producers exchanged commodity certificates.

We compared these codes for the following transactions reported to the computerized loan system:

- Transfers of grain under loan, to a warehouse (or between warehouses) followed by certificate exchange. We made the comparison for all transfers occurring between May 1, and October 31, 1986. May 1, 1986, was used because it approximates the earliest date producers could exchange certificates. Before May 1, producers and others were generally not familiar with commodity certificate uses and therefore would not have substituted grain intending to gain additional benefits. October 31, 1986, was the last date ASCS allowed long-distance PIK and roll.
- Disbursements of crop year 1986 loans for warehouse-stored grain followed by a certificate exchange. We extracted information on all loans having a disbursement date of October 31, 1986, or earlier.

We used computer records of transactions through August 25, 1987, because, although the practice was prohibited after October 31, 1986, some counties did not enter the transactions into the system until months after they occurred.

Developing a Criterion

We developed a criterion to differentiate long-distance PIK and roll transactions from the other certificate exchange transactions that the universe included (grain substituted for the original purposes of the regulation,¹ grain that was physically

¹The purpose of the regulation was to allow producers to receive price support benefits under circumstances that otherwise would prevent them from storing grain for the loan period.

moved--not substituted--across county borders, and grain stored in the county where it was grown by producers who reside elsewhere).

Our criterion for distinguishing long-distance PIK and roll grain from other grain was those transactions where producers gained additional benefits of at least 5 cents per bushel. Producers, grain company officials, and agricultural economists told us that the range of fees that producers paid for using distant-warehouse grain was from 1 to 23 cents per bushel, and 5 cents was more frequently stated. Our criterion represents a minimum cost that producers would have incurred for long-distance PIK and roll. Of all the costs producers could have incurred for these transactions (distant warehouse fees, broker fees, and certificate costs), our criterion included only the distant-warehouse fees. We used this criterion because the distant-warehouse fee was the only unavoidable cost. Producers who used certificates issued to them and who dealt directly with the distant-warehouse operator would not have incurred broker or additional certificate costs.

Our criterion was difficult to develop for two reasons. First, producers were not always able to tell us what fees they paid. For example, a Texas producer did not know what part of the 30-cents-per-bushel total fees that he paid was for the distant-warehouse operator, broker, or certificate premiums. An Illinois producer could not recall what fees he paid. Second, grain companies told us they charged a range of fees over the period they were involved. One grain company, with several warehouses involved in long-distance PIK and roll, told us its fees ranged from 4 cents to 10 cents per bushel: one-half of the fees to the distant-warehouse operator and one-half to the home-warehouse operator. One distant-warehouse operator told us he charged fees ranging from five cents to seven cents per bushel. A second distant-warehouse operator told us he charged fees ranging from 7 cents to 15 cents per bushel and estimated his average fee was 10 cents.

We then calculated the additional benefits for all loans in the universe to determine the number of bushels that met our 5-cents criterion. We did this by subtracting the amount per bushel that producers would have received for locally stored grain (the spread between the home-county loan rate and PCP) from the amount that they received from their substituted grain (the spread between the distant-county loan rate and PCP). Our calculation assumes that producers would have exchanged certificates for the same amount and type of grain in their home location on the same day if they had not substituted. Appendix II describes other

options producers had for their grain and the basis for our assumption.

Testing

We tested the reasonableness of our methodology by (1) determining the extent to which grain in our estimate of long-distance PIK and roll was located in a county adjoining that where the producer took out the loan, (2) comparing our long-distance PIK and roll volume estimate using a 5-cents criterion to volume based on higher criteria (i.e., 7 cents for wheat and 10 cents for other grains), (3) validating the volume we estimated for selected warehouses with the warehouse operator or through ASCS reports, and (4) discussing some results with ASCS officials. On the basis of these tests, we concluded that five cents was a reasonable criterion for distinguishing long-distance PIK and roll transactions from other certificate exchange transactions.

Adjoining county test--We determined the extent to which the distant warehouses were located in counties adjoining producer home locations. We wanted to determine and disclose this because, while grain could be substituted in adjoining counties and a 5-cents-per-bushel difference in benefits occur, there was a greater chance that grain located in adjoining counties was physically moved rather than substituted.

To determine bushels stored in adjoining county warehouses, we created a data base of adjoining counties for every distant location. We found about 14.3 million bushels, or 5.5 percent of the 260.4 million bushels we estimated were used in long-distance PIK and roll transactions, were located in adjoining county warehouses. We did not, however, exclude these bushels because, even though they were stored in adjoining county warehouses, they still may have been substituted.

Higher fee criterion test--To determine the effect a change in our criterion had on our long-distance PIK and roll volume, we repeated our analysis using higher criteria for the distant warehouse fees. We used 7 cents per bushel for wheat and 10 cents per bushel for the other grains. We used the lower wheat fee because we knew some transactions would be missed at 10 cents. (Wheat transactions tended to occur earlier, and we were told fees were lower in the earlier stages of this activity.)

We found long-distance PIK and roll volume based on the higher criteria was 243.8 million bushels, or 6 percent less than the 260.4 million bushels we estimated using a 5-cents-per-bushel criterion.

Other tests--We made other tests of our analysis results. For example, we compared, for five of the higher volume warehouses, our analysis results with what warehouse operators told us they moved through their warehouses or to ASCS audit reports. We found instances where our analysis tended to understate volume. By contacting ASCS county offices, we found that some of the differences were due to erroneous or missing warehouse codes on loan documents.

We also validated, with ASCS officials, analysis results which we considered unusual. For example, we found Montana producers who substituted barley into Virginia warehouses. ASCS state officials in both states were aware that the transactions had occurred, thus validating our analysis results.

OBJECTIVE 2

Calculate the benefits available from long-distance PIK and roll.

Scope

We calculated the total additional benefits available for the universe of long-distance PIK and roll loans identified in objective 1.

Methodology

First, we calculated the additional benefits available on each individual transaction by subtracting the difference between the distant-county loan and PCP from the difference between the home-county loan and PCP. Then, we added all of the results together to determine the total additional benefits available from all transactions.

OBJECTIVE 3

Determine the distribution of benefits among individuals involved in the long-distance PIK and roll process.

Scope

The distribution of benefits from long-distance PIK and roll is determined by commodity certificate costs and the number of warehouse operators and/or brokers who assisted producers in the individual transactions, and the fees they charged. We estimated total commodity certificate costs paid by producers related to

long-distance PIK and roll transactions. We also estimated a range of fees they may have paid on the basis of discussions with ASCS officials, producers, grain company officials, and agricultural economists.

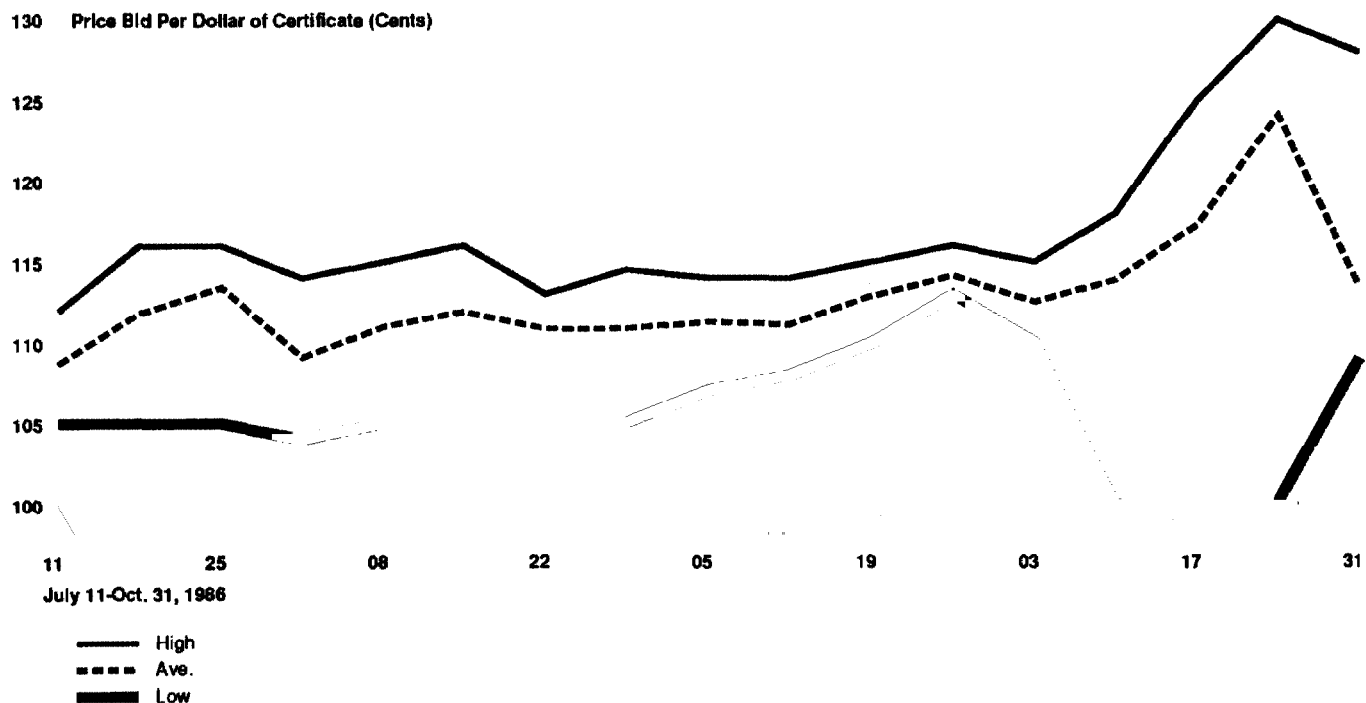
Commodity Certificate Premium Costs

Commodity certificates have normally sold at premiums. Buyers of certificates are willing to pay the premiums because they know that they could gain additional benefits from subsequent transactions.

The amount of premium producers paid for certificates varied over time and between producer locations, depending on certificate supply and demand conditions. They were highest during the period that producers were allowed to combine certificate exchanges with substitution. Figure I.1 shows differences in bids for certificates in different South Dakota locations on 17 Fridays between July 11 and October 31, 1986--the time period in which most of these transactions took place.

Figure I.1

Bids for Certificates in South Dakota
Between July 11 and October 31, 1986



^aThe bids were the high and low prices quoted for various South Dakota locations. The number of certificate bids quoted ranged from 9 to 22, and most often were 11. The locations of the bids were not always the same.

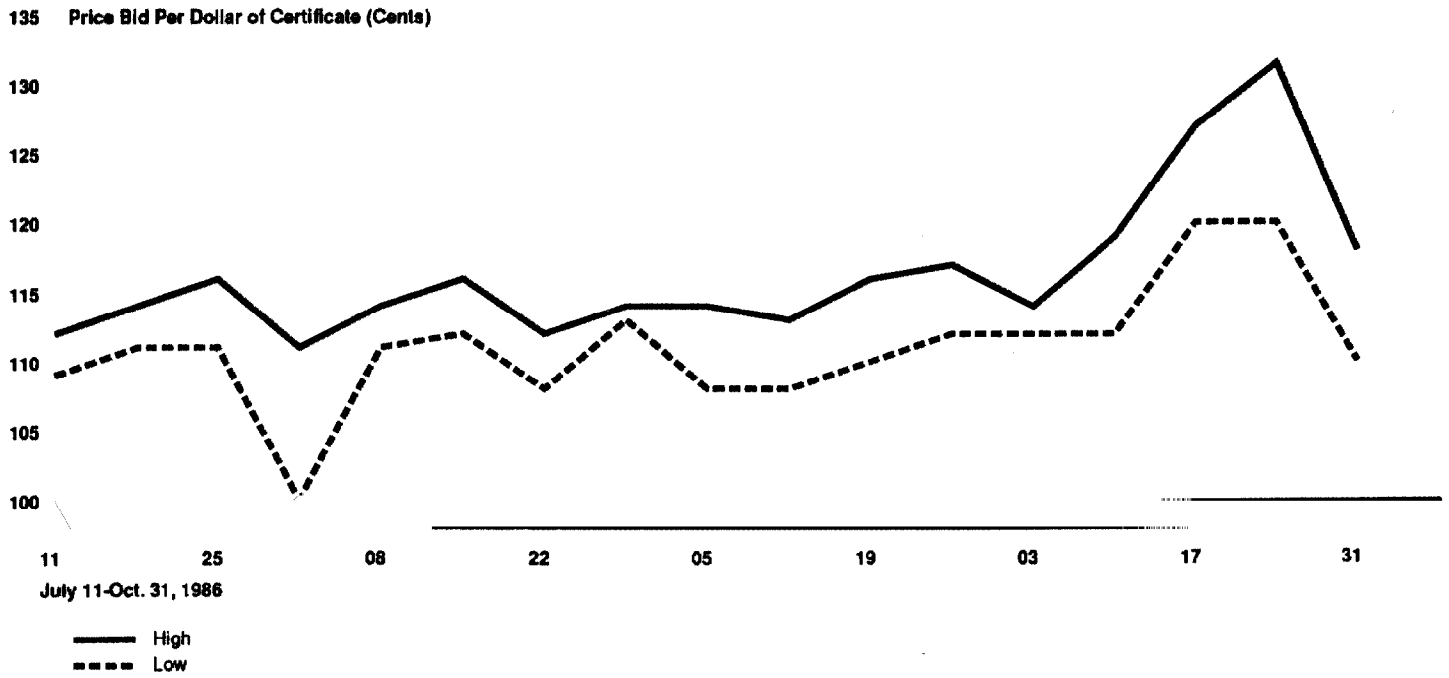
Source: Agweek.

Figure I.1 shows that certificate premiums increased through October 31, 1986. It also shows that there were great differences within the state on the same day--daily differences ranged from 3 to 30 percent.

Ideally, to determine the benefits producers received when they had to pay premiums, we would need to know the premiums paid by individual producers. However, it was not practical to develop that information because of the number of producers we would need to contact and the possibility that producers who acquired certificates from more than one source would not know the average premium they paid. Instead, we used daily regional certificate bids reported by the Commodity News Service. Figure I.2 shows the high and low bids over the period these transactions were allowed.

Figure I.2

Commodity News Service High and Low Certificate
Bids Between July 11 and October 31, 1986



Source: Commodity News Service.

These certificate prices are bids. If a margin was added to cover handling costs or compensation for the risks associated with holding certificates (i.e., that certificate prices would drop and holders of certificates would incur a loss), the amount producers paid could be more than these bids.

Methodology for Calculating Benefits Paid to Sellers of Certificates

We estimated the premium paid by producers for certificates on the basis of bids reported by the Commodity News Service for the day of the transaction. We then reduced that amount by our estimate of what premiums might have been in the absence of long-distance PIK and roll.

We calculated the total amount of premiums producers may have paid by multiplying the value of certificates used in the transactions by the respective low and high bids reported by the Commodity News Service. This calculation resulted in premium costs of \$37.2 million (low bid) to \$57.3 million (high bid). Because producers would have paid some premiums in the absence of these transactions, we then calculated a net certificate cost. We reduced the \$37.2 million and \$57.3 million certificate costs by the respective average low- and high-premium bids for November and December 1986--the 2 months after USDA prohibited long-distance PIK and roll. We used November and December premiums because the demand for certificates in those months would reflect harvest time more than a longer period would. (Average low- and high-premium bids for the November 1, 1986, through December 31, 1986, were 106.8 percent and 111.1 percent, respectively. They were respectively 104.1 and 107.4 percent for the November 1 through May 15, 1987, period). This resulted in net premium costs to producers of \$19.4 million (low-bid basis) and \$28.2 million (high-bid basis).

Methodology for Estimating the Benefits Paid for Transaction Fees

To estimate what portion of the additional benefits derived was shared with warehouse operators and brokers, we asked producers and officials of grain companies involved in the transactions what per-bushel fees were charged. We received a wide variety of responses from just a few cents up to 50 cents per bushel. In some cases, the fees were only applicable to a few bushels and therefore were not representative of overall fees. In other cases, the fees were applicable to large volumes of grain and may have been more representative. For example, warehouses that accounted for more

than 20 percent of the total volume of grain substituted charged fees of about 12 cents per bushel on average.

Because of the difficulty we experienced in determining total per-bushel fees paid by producers, we used a range of between 10 and 15 cents per bushel to estimate the fees they paid to warehouse operators and brokers. We calculated the benefits shared by multiplying the long-distance PIK and roll volume by the respective fee in our range.

OBJECTIVE 4

Determine the cost of long-distance PIK and roll to the federal government.

Scope

We calculated the cost (budgetary effect) of the commodity certificates that were used in the long-distance PIK and roll transactions.

Methodology

Government cost from long-distance PIK and roll is determined by the effect certificate exchange has on net loan outlays. The extent to which net loan outlays are affected by certificate exchange depends first on the total dollar amount of certificates issued. The greater the dollar amount of certificates issued, the more bushels of grain that can be exchanged. Once a given amount of certificates has been issued, the overall increase on net loan outlays depends on the following three important factors:

- The recycling percentage associated with each crop. This percentage represents the increased number of bushels placed under loan due to certificates to the number of bushels exchanged with certificates.
- The average loan-rate-to-PCP ratio of each crop exchanged. This represents the ratio of the total dollar amount of outstanding loans on crops exchanged for certificates to the total dollar amount of certificates used.
- The portion of certificates used in exchange for each crop.

The following is our formula for calculating increased net loan outlays:

$$\text{Dollar value of certificates exchanged} * \text{Loan/PCP} * \text{Recycling percentage}$$

Increased net loan outlays are equal to the dollar value of certificates exchanged multiplied by the loan-rate-to-PCP ratio and the recycling percentage.

Our March 1987 estimate of government cost from all certificates exchanged through February 1987 was based on available data and analyses to estimate these values. We used a range of assumptions about the loan-rate-to-PCP ratio and the recycling percentage, and data on the portion of certificates used in exchange for each crop.

The lower range of our estimate of the net loan outlay effect (\$3.090 billion increase) assumed that 1.14 represented the ratio between the loan rate and the PCP for the bushels exchanged, and each bushel exchanged resulted in producers' placing an additional nine-tenths bushel of grain under loan--there was 90-percent recycling. The higher range of our estimate (\$3.636 billion increase) was based on a 1.21 loan-rate-to-PCP ratio, and each bushel exchanged resulted in producers' placing 1 additional bushel under loan.

Government Cost From Long-distance PIK and Roll

We estimated government cost from long-distance PIK and roll on the basis of actual loan-rate-to-PCP ratios. Using these ratios and the amount of certificates exchanged, we estimated cost using estimates of the number of bushels that were placed under loan due to certificate exchanges.

The lower end of our cost estimate--a \$130.9 million increase in net loan outlays--assumed that, on average, an additional eight-tenths bushel was placed under loan for every bushel exchanged--there was 80-percent recycling.²

²This is consistent with the 75- to 85-percent recycling estimate that USDA's Acting Under Secretary for International Affairs and Commodity Programs provided to the Senate Committee on Agriculture, Nutrition and Forestry on May 15, 1987.

The loan-rate-to-PCP ratios we used were the national average loan rate³ divided by the weighted average PCP, determined by our analysis,⁴ for the respective grains. The \$130.9 million increase is the difference between loan outlays for substituted grain (\$394.9 million) and what outlays would have occurred had the certificates been used on other grain (\$264 million). Net loan outlays would be about \$147.3 million if there was 90-percent recycling.

The high end of our cost estimate--a \$147.8 million increase in net loan outlays assumed that 1 additional bushel was placed under loan for every bushel exchanged--there was 100 percent recycling. The calculation is based on a 1.81 loan-rate-to-PCP ratio for the substituted bushels. It is the weighted average ratio determined for all long-distance PIK and roll transactions. Had the certificate exchange been for grain located in the home counties, the loan-rate-to-PCP ratio would have been 1.27. The \$147.8 million increase is the difference between loan outlays, had the additional bushels been placed under loan in the producers' home locations (\$347.7 million), and outlays for substituted grain (\$495.5 million).

Using the actual loan-rate-to-PCP ratio determined from long-distance PIK and roll transactions, it now appears that the higher end of our of earlier estimate was closer to the actual cost and may even have understated the actual costs. The ratio for long-distance PIK and roll transactions, representing about 9 percent of the certificate exchanged through February 1987, was about 1.8.

³The national average loan rates were used for the respective grains because, in the indirect case, the additional bushels could have been put under loan in any county.

⁴The weighted average loan-rate-to-PCP ratio for the transactions, had they occurred in the home county, was 1.21, based on: for barley (1.27 percent of the certificates used), a 0.93 average loan-rate-to-PCP; for corn (70.56 percent of the certificates used), a 1.25 average loan-rate-to-PCP; for sorghum (4.52 percent of the certificates used), a 1.17 average loan-rate-to-PCP; and for wheat (23.65 percent of the certificates used), a 1.08 average loan-rate-to-PCP ratio. For the distant county, the average loan-rate-to-PCP was 1.80 based on: for barley (1.27 percent of the certificates used), a 1.46 average loan-rate-to-PCP; for corn (70.56 percent of the certificates used), a 1.96 average loan-rate-to-PCP; for sorghum, (4.52 percent of the certificates used), a 1.49 average loan-rate-to-PCP; and for wheat (23.65 percent of the certificates used), a 1.43 average loan-rate-to-PCP ratio.

Even if these certificate exchanges had occurred in the producers' home counties, the loan-rate-to-PCP ratio would have been 1.27--slightly higher than the value on which the high end of our earlier estimate was based.

Data are still not available on the actual loan-rate-to-PCP ratio for the remaining 91 percent of the certificate exchanges. However, if 1.27 was also the loan-rate-to-PCP ratio for the remaining 91 percent of the transactions, then the average aggregate ratio for all transactions (long-distance PIK and roll and other certificate exchanges) would be about 1.32, which is above the range we used in making our previous cost estimate. The 1.27 ratio may be an overstatement of the ratio for the remaining 91 percent. However, even if that ratio was as low as 1.15, then the aggregate ratio would be 1.21 for all transactions, still on the high end of our previous estimate.

PRODUCER OPTIONS FOR DISPOSING
OF ELIGIBLE GRAIN

Our calculation of the additional benefits available from long-distance PIK and roll assumes that producers would have exchanged certificates for the same amount and type of grain in their home counties on the same day, if they had not substituted the grain. We based our assumption on a comparison of the benefits producers would have received from their other options for disposing of the grain they produced.

PRODUCER OPTIONS

Producers participating in farm programs could select among the following five options for their 1986 production:

- Option 1--Sell or use the grain--not take out a 9-month price-support loan (loan).
- Option 2--Take out a loan and settle it by forfeiting the grain.
- Option 3--Take out a loan and redeem it with cash (pay back the loan with interest).
- Option 4--Take out a loan in their home county and exchange commodity certificates for the grain at the home PCP.
- Option 5--Take out a loan on substituted loan collateral and exchange it at the distant-county PCP.

The following comparison shows that Option 5--long-distance PIK and roll--yielded producers the greatest benefit. It was followed by Option 4--certificate exchange for grain under loan in the home county--PIK and roll. The comparison is based on home and distant-loan rates, respectively, for the county from which producers substituted the most bushels and the distant county having the highest long-distance PIK and roll volume. The PCPs are for a day with a high volume of substituted bushels--October 31, 1986. Certificate premiums were not considered in the comparison.

Table II.1

Comparison of Producer Benefits From Five
Options for Disposing of Eligible Grain

| Activity | Option's Effect on Producer's Cash Position | | | | |
|--|---|--------------|---------------|---------------|-----------------------------|
| | Option 1 | Option 2 | Option 3 | Option 4 | Option 5 |
| Home loan: \$1.86 Home PCP: \$1.58 Home market price at loan maturity: \$1.71 Distant loan: \$1.75 Distant PCP: \$0.87 | | | | | |
| 1. Bushels harvested and eligible for loan. | 20,000 | 20,000 | 20,000 | 20,000 | 20,000 |
| 2. Store harvested grain on farm for 9-month term: (\$0.26 X 20,000 bushels). | | (\$5,200.00) | (\$5,200.00) | | |
| 3. Apply for and receive a price-support loan on the home grain. (Home loan rate X 20,000 bushels). | | \$37,200.00 | \$37,200.00 | \$37,200.00 | \$37,200.00 |
| 4. Apply to substitute grain and receive approval. Purchase warehouse-stored grain in distant county: (Distant PCP X 20,000 bushels). Substitute purchased grain for home grain. | | | | | (\$17,400.00) |
| 5. Repay the loan on grain stored in the home county. Cash repayment: (Home loan rate X 20,000 bushels) plus interest for term of the loan. Certificate exchange: (Home PCP X 20,000 bushels). | | | (\$38,874.00) | (\$31,600.00) | (\$37,206.12) |
| 6. Receive loan proceeds at the distant county rate: (Distant loan rate X 20,000 bushels). | | | | | \$35,000.00 |
| 7. Home county grain is considered free stock and is sold. At harvest time: (Home PCP X 20,000). After loan matures: (Market price on June 29, 1987 X 20,000 bushels). | \$31,600.00 | | \$34,200.00 | \$31,600.00 | \$31,600.00 |
| 8. Exchange commodity certificates for the distant grain: (Distant PCP X 20,000 bushels). | | | | | (\$17,400.00) |
| 9. Sell the grain in the distant county and pay warehouse and broker fees of \$0.10 per bushel. Sell grain: (Distant PCP X 20,000 bushels). Pay fees: (\$0.10 X 20,000). | | | | | \$17,400.00 (\$2,000.00) |
| 10. Net proceeds to the producer. | \$31,600.00 | \$32,000.00 | \$27,326.00 | \$37,200.00 | \$47,193.88 |
| 11. Per bushel proceeds. | \$1.58 | \$1.60 | \$1.37 | \$1.86 | \$2.36 |

Warehouses With More Than 1 Million
Bushels of Substituted Grain
Based on Our Analysis

| <u>Warehouse Name and Location</u> | <u>Estimated bushels (thousands)</u> |
|--|--|
| 1. Joliette Farmers Grain Co., Pembina County, N. Dak. | 13,351 |
| 2. Devils Lake Farmers Union Elevator, Ramsey County, N. Dak. | 11,911 |
| 3. Rugby Farmers Union Elevator Co., Pierce County, N. Dak. | 11,849 |
| 4. Selz Grain and Supply Co., Pierce County, N. Dak. | 10,343 |
| 5. Cargill, Inc., Benson County, N. Dak. | 9,528 |
| 6. Farmers Shipping and Supply Co., Ramsey County, N. Dak. | 9,152 |
| 7. Harvest States Cooperative (Drayton) Pembina County, N. Dak. | 9,059 |
| 8. Peavey Co. Producer Services, Ramsey County, N. Dak. | 8,726 |
| 9. Farmers Coop. Association of Churchs Ferry Ramsey County, N. Dak. | 6,852 |
| 10. Tronson Grain Co., Ramsey County, N. Dak. | 6,720 |
| 11. Olmstead Storage and Grain, Townes County, N. Dak., | 6,430 |
| 12. Farmers Elevator Co. of Arthur, Wells County, N. Dak. | 5,374 |
| 13. Cargill, Inc., Cavalier County, N. Dak. | 5,278 |

| <u>Warehouse Name and Location</u> | <u>Bushels</u> |
|---|----------------|
| 14. Beulah Farmers Union Elevator Co., Mercer County, N. Dak. | 4,890 |
| 15. Maddock Farmers Grain Co., Benson County, N. Dak. | 4,757 |
| 16. Underwood Farmers Elevator, McLean County, N. Dak. | 4,489 |
| 17. Farmers Elevator Co. of Walhalla, Pembina County, N. Dak. | 4,485 |
| 18. International Multifoods, Pembina County, N. Dak. | 4,343 |
| 19. Farmers Union Elevator Co., Ward County, N. Dak. | 4,240 |
| 20. Peavey Co. Producer Services, Clark County, S. Dak. | 3,911 |
| 21. North Central Elevators Inc., Cavalier County, N. Dak. | 3,615 |
| 22. Lapeyrouse Grain Corp. of Mississippi, Lowndes County, Miss. | 3,605 |
| 23. Harlow Coop. Elevator and Seed Co., Benson County, N. Dak. | 3,400 |
| 24. Cando Farmers Elevator Assoc., Towner County, N. Dak. | 3,179 |
| 25. Falkirk Farmers Elevator Co., McLean County, N. Dak. | 3,163 |
| 26. Cargill, Inc., Ward County, N. Dak. | 2,956 |
| 27. Hoople Farmers Grain Co., Walsh County, N. Dak. | 2,779 |
| 28. Farmers United Coop. Elevator, Burke County, N. Dak. | 2,708 |

APPENDIX III

APPENDIX III

| <u>Warehouse Name and Location</u> | <u>Bushels</u> |
|--|----------------|
| 29. Elliott Grain, Pembina County, N. Dak. | 2,456 |
| 30. North Central Grain Coop., Towner County, N. Dak. | 2,244 |
| 31. Alsen Farmers Elevator Co., Cavalier County, N. Dak. | 2,231 |
| 32. Gladwin Farmers Exchange, Gladwin, Mich. | 2,224 |
| 33. Knox Grain Company, Pierce County, N. Dak. | 2,170 |
| 34. Harvest States Cooperative, (Glasston) Pembina County, N. Dak. | 2,034 |
| 35. The Hampden Farmers Elevator Co., Ramsey County, N. Dak. | 2,012 |
| 36. Harvest States Cooperative, (Milton) Cavalier County, N. Dak. | 1,993 |
| 37. Garske Elevator Co., Ramsey County, N. Dak. | 1,744 |
| 38. Wolcott and Lincoln, Inc., Comanche County, Kans. | 1,741 |
| 39. The Equity Elevator and Trading Co., McLean County, N. Dak. | 1,662 |
| 40. Cargill, Inc., McHenry County, N. Dak. | 1,553 |
| 41. Farmers Elevator Co., Walsh County, N. Dak. | 1,524 |
| 42. Farmers Coop. Elevator, Benson County, N. Dak. | 1,435 |

APPENDIX III

APPENDIX III

| <u>Warehouse Name and Location</u> | <u>Bushels</u> |
|--|----------------|
| 43. Fessenden Coop. Association, Wells County, N. Dak. | 1,401 |
| 44. Central Soya Co., Inc., Hamilton County, Tenn. | 1,333 |
| 45. Minot Farmers Elevator, Ward County, N. Dak. | 1,296 |
| 46. Cargill, Inc., Holt County, Mo. | 1,235 |
| 47. Farmers Coop. Elevator, Pembina County, N. Dak. | 1,231 |
| 48. Edinburg Farmers Elevator Co., Walsh County, N. Dak. | 1,160 |
| 49. Max Farmers Elevator, McLean County, N. Dak. | 1,133 |
| 50. International Multifoods, Corp. (Adams), Walsh County, N. Dak. | 1,110 |
| 51. T F Grain (Belle Haven), Accomack County, Va. | 1,093 |
| 52. Sheyenne Industries, Inc., Ramsey County, N. Dak. | <u>1,017</u> |
| Total | <u>210,125</u> |

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