702

94th Congress
1st Session

JOINT COMMITTEE PRINT

IMPACT OF RUSSIAN GRAIN PURCHASES ON RETAIL FOOD AND FARM PRICES AND FARM INCOME IN THE 1975 CROP YEAR

A STUDY

PREPARED FOR THE USE OF THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

SEPTEMBER 29, 1975

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE

58-960 O WASHINGTON : 1975

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price 30 cents

JOINT ECONOMIC COMMITTEE

(Created pursuant to sec. 5(a) of Public Law 304, 79th Cong.)

HUBERT H. HUMPHREY, Minnesota, *Chairman*
WRIGHT PATMAN, Texas, *Vice Chairman*

SENATE

JOHN SPARKMAN, Alabama
WILLIAM PROXMIRE, Wisconsin
ABRAHAM RIBICOFF, Connecticut
LLOYD M. BENTSEN, Jr., Texas
EDWARD M. KENNEDY, Massachusetts
JACOB K. JAVITS, New York
CHARLES H. PERCY, Illinois
ROBERT TAFT, Jr., Ohio
PAUL J. FANNIN, Arizona

HOUSE OF REPRESENTATIVES

RICHARD BOLLING, Missouri
HENRY S. REUSS, Wisconsin
WILLIAM S. MOORHEAD, Pennsylvania
LEE H. HAMILTON, Indiana
GILLIS W. LONG, Louisiana
CLARENCE J. BROWN, Ohio
GARRY BROWN, Michigan
MARGARET M. HECKLER, Massachusetts
JOHN H. ROUSSELOT, California

JOHN R. STARK, *Executive Director*

SENIOR STAFF ECONOMISTS

JERRY J. JASINOWSKI
LOUGHLIN F. McHUGH
JOHN R. KARLIK
COURTENAY M. SLATER

RICHARD F. KAUFMAN, *General Counsel*

ECONOMISTS

WILLIAM R. BUECHNER
ROBERT D. HAMRIN
RALPH L. SCHLOSSTEIN
WILLIAM A. COX
SARAH JACKSON
GEORGE R. TYLER
LUCY A. FALCONE
L. DOUGLAS LEE
LARRY YUSPEH

MINORITY

GEORGE D. KRUMBHAAR, JR. (Counsel)
M. CATHERINE MILLER

LETTER OF TRANSMITTAL

SEPTEMBER 29, 1975.

To the Members of the Joint Economic Committee:

Transmitted herewith is a study entitled "Impact of Russian Grain Purchases on Retail Food and Farm Prices and Farm Income in the 1975 Crop Year" by George E. Brandow, Professor of Agricultural Economics at the Pennsylvania State University. The paper was prepared in July and August 1975 in response to a request by the Committee for an appraisal of the impact of actual and anticipated domestic crop production and Russian grain purchases on retail food prices, on farm prices and on farm income during the 1975 crop year, ending in September 1976.

I believe the study will prove valuable to the Committee, to the entire Congress and to others seeking to assess not only the short-term effect of Russian grain sales, but also the need for fundamental revision in our agricultural programs designed to bring stability to purchasers and producers.

The views expressed in this study are those of the author and do not necessarily represent the views of the members of the Joint Economic Committee or the Committee staff. On behalf of the Committee, I would like to express my appreciation to Dr. Brandow for undertaking this study and to George Tyler of the Committee staff, who supervised the study.

HUBERT H. HUMPHREY,
Chairman, Joint Economic Committee.

CONTENTS

IMPACT OF RUSSIAN GRAIN PURCHASES ON RETAIL FOOD AND FARM PRICES AND FARM INCOME IN THE 1975 CROP YEAR

(By G. E. Brandow [1])

SUMMARY

This study contains projections of prices, production, and income in agriculture in the 1975 crop year for three different export situations: (1) Agricultural exports at levels expected about July 1, 1975, (2) exports that include an additional 10 million tons of grain, which is approximately the quantity purchased by Russia in July 1975, and (3) exports that include 20 million more tons of grain and 25 million more bushels of soybeans than in the first situation. Crop production in the United States is assumed to be slightly lower than estimated in the August 1 crop report. All projections are dependent upon several assumptions, given in the report, about future events.

With exports at levels expected prior to Russia's grain purchases in July, farm prices of feed grains, wheat, and soybeans in the 1975 crop year (October 1975 to September 1976) are projected to be 10–30 percent below their averages for calendar 1974. Prices of livestock products, except beef, are projected to increase, mainly because the effects of poor feed crops in 1974 will persist into the 1975 crop year. Projected realized net farm income in the 1975 crop year is 22 percent lower than in calendar 1974. The combined effects of changes in farm prices and of projected increases in costs of processing and distributing food raise the projected average retail food price index during the 1975 crop year by 8 or 9 percent above the level of January–March 1975.

The projected effects of exporting an additional 10 million tons of grain are to raise farm prices of feed grains and wheat by 10–12 percent, to reduce stocks of grains remaining at the end of the 1975 crop year, and to decrease livestock feeding during the year. Realized net farm income in the 1975 crop year is projected to rise 10 percent; the income gain goes mainly to crop producers, and some livestock producers may lose. The index of retail food prices, expected to rise 8 or 9 percent between January–March 1975 and the 1975 crop year in the normal-export situation, is projected to rise another 1.0 percent as a result of increasing grain exports by 10 million tons.

The projected effects of the third export situation are similar to those of the second but somewhat larger. Farm prices of feed grains, wheat, and soybeans rise 13–17 percent above those projected for the second situation. Projected realized net farm income is 14 percent higher than in the second situation. The retail food price index is projected to be 1.4 percent higher than in the second case and 2.4 percent higher than in the first case (no Russian grain purchases).

[1] Professor of Agricultural Economics, the Pennsylvania State University.

Projected stocks of feed grains and wheat remaining at the end of the 1975 crop year in the third export situation are not much higher than the low stocks at the beginning of the year. Because of the low level of ending stocks in the third export situation, markets seem likely to be especially vulnerable to the effects of unforseeable events in that case.

Introduction

This study was prepared for the Joint Economic Committee of Congress to show the impact of large crops and of alternative levels of exports on prices and income in agriculture during the 1975 crop year. The study was completed on August 19, 1975.

Assumptions about the economic environment in which agriculture will operate during the 1975 crop year include the following: (1) Inflation in the economy at large, as reflected in the nonfood component of the Consumer Price Index, will occur at an annual rate of 6 percent, (2) gradual recovery from the recession of 1974–75 will take place, (3) the exchange rate between the dollar and principal other currencies will be approximately stable, and (4) supplies used by farmers for production, especially fuels, will be high priced but available at such prices. Alternative levels of commercial exports of agricultural products are used, as described later. In all cases, exports for food aid to poor countries are assumed to be at the moderate levels expected in mid-1975. Failure of these assumptions to hold could substantially alter results projected by the study.

Considerable uncertainty attaches to projected production, price, and income figures given in this study. Estimates of net farm income are particularly subject to error because they are the net result of so many other estimates, themselves subject to error. Numbers are given in the study more precisely than their accuracy warrants in order to simplify presentation and to maintain consistency among estimates, but all numbers should be interpreted with caution.

Virtually all estimates apply to the 1975 crop year, defined as beginning October 1, 1975, and ending September 30, 1976. The crop year as so defined accords with the crop year usually used for such major farm products as corn and hogs but is out of phase by 1 to 3 months with the usual crop years for some other products.

Projections Based on Expected Crop Production and Normal Exports

Estimates of production, prices, and income given in this section are based on the following production of major crops in 1975:

Corn (million bushels)	5,750
All feed grains (million tons)	202.5
Wheat (million bushels)	2,125
Soybeans (million bushels)	1,440
Cotton (thousand bales)	9,416
Tobacco (million pounds)	2,200

Except for cotton, these production figures are slightly below those given in the August 1 crop report.

The size of crops in 1976 will affect prices and income in the 1975 crop year for at least two reasons. First, prices of storable products are much influenced by anticipations of future production as the new crop year approaches. Second, some crops, particularly winter wheat,

will be harvested in 1976 well before the close of the 1975 crop year defined for the study. It was assumed that crops will be uniformly good in 1976. Poor crops in 1976 could raise prices above projected levels in the latter part of the 1975 crop year.

The export estimates used in this section are based on expectations as of about July 1, 1975, before Russia began to buy grain from other countries, principally the United States. These estimates are called "normal exports" in this study (though Russia may irregularly import grain because of erratic yields). Estimates of prices, production, and farm income given in this section thus are the standard with which effects of larger exports, given in the following section, can be compared.

Normal exports, so defined, include 40 million tons of feed grain, 1,100 million bushels of wheat, and 450 million bushels of soybeans. (See table 1, p. 6.) The total of feed grain and wheat exports is 73 million (short) tons.

Other projected utilization of feed grains, wheat, soybeans, and cotton is also given in table 1. Stocks of feed grains and wheat were (or will be) unusually low prior to harvest in 1975 because strong export demand in earlier years depleted stocks and because yields per acre were exceptionally low in 1974. With normal exports in the 1975 crop year, stocks of grains would be built up as a result of private incentives (efforts by government to accumulate stocks were not expected). Experience gives very little guidance as to the levels of grain stocks the grain trade and producers might voluntarily carry in the absence of government stocks. The projected carryovers of feed grains and wheat at the end of the 1975 crop year (table 1) are low compared with levels prior to 1972 when government stocks were large.

The amount of feed concentrates fed to livestock in the 1975 crop year greatly affects the carryover of feed grains expected at the end of the crop year and also influences year-end carryovers of soybeans and wheat. The total of all concentrates fed to livestock was projected to be 178 million tons at prices expected to be associated with normal exports. This tonnage contrasts with the 156 million tons or so fed during the 1974 crop year and with the 192 million tons fed in the 1972 crop year.

The tonnage of feed concentrates likely to be utilized in the 1975 crop year is limited by the low numbers of hogs on farms and of cattle in feedlots at the beginning of the year. Poultry numbers are also lower than might be expected. The principal cause is the poor feed crops of 1974 and the curtailment of livestock production that followed. If beginning livestock numbers did not limit feeding and if circumstances were otherwise normal, total concentrates fed to livestock might be as much as 205 million tons in the 1975 crop year.

Expansion of livestock (including poultry) production would be stimulated in the 1975 crop year by high prices of livestock products in relation to feed prices if crop exports were normal. Increases in supplies of livestock products coming to market, however, would be delayed and moderated by the necessary lag between the time farmers undertake to expand livestock production and the time products are ready for market. The longest lag is for hogs; much of the expected increase in hog numbers would not be available to the market during the crop year. Fed cattle and egg marketings would respond more quickly and broilers most quickly.

Commercial beef production in the 1975 crop year was projected at 25.3 billion pounds and commercial pork production at 10.9 billion pounds. Broiler production was put at 11.8 billion pounds, turkey production at 2.5 billion pounds, and egg production at 5.3 billion dozen.

Projections of average farm prices in the 1975 crop year in the normal-export situation are summarized in table 2 on page 7. The estimates for crops are especially subject to error because the storability of crops means that prices need not match up utilization and production in any one year; expectations about future market conditions can be very important.

Projected prices for all crops listed in table 2 are below average prices in calendar 1974. Cattle prices are about the same; hog prices are much higher. As the price indexes show, crop prices, which were generally high in calendar 1974, would be down in the 1975 crop year, livestock prices would be up, and prices of farm products collectively would not change much.

Farmer's cash receipts from marketings in the 1975 crop year in the normal-exports situation are projected to be slightly higher than in calendar 1974. (See table 3, p. 7.) Again, livestock products move up, crops down. Government payments decline further, but a gain in rental value of farm dwellings is the principal reason for an increase in other farm income.

Projected production expenses increase 11 percent in the 1975 crop year over calendar 1974. Because of lower crop prices in the 1975 crop year, farmer's expenditures for purchased feed decline. All other major categories of expense increase. This result is attributable to the assumption of continuing inflation in the economy, larger inputs in some categories, and rising real estate taxes and farm indebtedness.

Realized net farm income in the 1975 crop year is projected to decline to $21.6 billion, 22 percent below calendar 1974. This is not much different from the annual rate of $20.75 billion estimated for the first half of calendar 1975 by the U.S. Department of Agriculture. (Realized net income does not include change in value of inventories, which was not estimated in this study.) The purchasing power of net income can be roughly indicated by dividing net income in current dollars by the index of prices paid by farmers for family living. Expressed in dollars of 1967 purchasing power, projected net income in the 1975 crop year is $11.6 billion, down one-third from calendar 1974 and about the same as in 1969–71 before crop exports rose dramatically.

The retail food price index, a component of the Consumer Price Index, was projected to average 15.2 percent higher during the 1975 crop year (October 1975 to September 1976) than in calendar 1974, 8.6 percent more than in January–March 1975, and 6.8 percent more than in June 1975. Pork was a leader in the projected price increase; collectively, meat, poultry, and eggs rose 14 percent from January–March 1975. An important influence on prices of meat and poultry products, especially pork, was reduced levels of livestock marketings (relative to levels otherwise to be expected) traceable to the poor feed crops of 1974. A particularly important influence on most other food prices was continued increases in food processing and distribution costs as a result of further inflation in the economy. Such costs, including marketing firms' profits, typically amount to about 60 percent of the consumer's dollar spent for U.S. farm produced food

in retail stores and to about two-thirds for food purchased from all sources, including away-from-home eating places.

Projections Based on Alternative Levels of Crop Exports

Russia purchased approximately 10 million tons of grain from the United States in July 1975 and reportedly was seeking to purchase more in August. Projections of prices, production, and income paralleling those of the preceding section were worked through to show the approximate effects of the sales already made and of possible additional sales. The original level of exports, discussed in the preceding section, and the two alternative levels, discussed in this section, are summarized below.

	Normal exports	Plus 10	Plus 20
Feed grains (million tons)	40.0	46.4	52.0
Wheat (million bushels)	1,100.0	1,220.0	1,370.0
Total (million tons)	73.0	83.0	93.0
Soybeans (million bushels)	450.0	450.0	475.0

Assumptions regarding other exports were the same for all situations.

Although the plus-10 situation is intended to represent the outlook for exports as of mid-August 1975 and the plus-20 situation is meant to be informative about the effects of selling to Russia an additional 10 million tons of grain and an additional 25 million bushels of soybeans, the estimated impacts would be applicable to any situation leading to the same exports. Food aid to poor countries or increased commercial sales to countries other than Russia are examples. Moreover, exports to other countries will not necessarily remain at the "normal export" levels after Russia has entered international grain markets.

The principal projected effects of the alternative levels of exports are given in table 4 on page 8. All figures are estimates based not only on the differing assumptions about exports but also on other assumptions, given earlier, about size of crops in 1975 and 1976 and about the economic environment in which agriculture will operate.

The plus-20 situation is projected to bring carryover stocks of feed grains and wheat at the end of the 1975 crop year down almost to the low levels at the beginning of the year. Somewhat less of the second 10 million tons of grain exports comes out of stocks than for the first 10 million tons; correspondingly more comes out of livestock feeding. As stocks are reduced more nearly to essential carryover levels and as more grain must be taken away from livestock (the difference between the plus-10 and plus-20 situations) prices of grains and livestock rise more sharply.

Going from the normal-export situation to the plus-20 situation is projected to increase farm prices of corn, wheat, and soybeans by 20 to 30 percent, but the index of all crop prices rises 11 percent. The increase in the index of all livestock prices is less.

The increase in farmers' cash receipts from marketings in the plus-10 situation, attributable to sales made to Russia in July if exports to other countries remain the same, is projected to be $2.9 billion. Most of the increase comes from crops rather than from livestock products.

The projected increase in the plus-20 situation, attributable to possible additional exports, is larger in amount but similar in pattern. Projected increases in farm production expenses in the plus-10 and plus-20 situations are almost entirely accounted for by higher costs of purchased feed.

The projected increase in net farm income between the normal-export and plus-10 situation is $2.2 billion; another $3.4 billion is added by going to the plus-20 situation. The composition of cash receipts from marketings and of production expenses indicates that the gain in net income would go very largely to farmers producing feed grains, wheat, and soybeans. Producers of most other crops would have little or no gain in the crop year. Producers of most classes of livestock would receive lower net incomes in the crop year unless they were also producers of grains, soybeans, or crops closely related to them. The reduction of net income from livestock in the crop year would be in part a deferral of income gains, especially from hogs, until marketings declined and prices rose after the close of the crop year. Part of livestock producers' loss of net income probably would be permanent.

The retail food price index, expected to average 8 or 9 percent higher in the 1975 crop year than in January–March 1975 in the normal export situation, is projected to increase by an additional 1.0 percent in the plus-10 situation. Greater exports as projected for the plus-20 situation would add another 1.4 percent to the retail food price index. Increases in retail prices of red meats and poultry products would be larger: The plus-10 situation is projected to add 2.1 percent to this group of prices, and the plus-20 situation adds another 2.6 percent. The projected increase in retail prices of cereals and bakery products was 1.7 percent in the plus-10 situation and another 2.6 percent in the plus-20 situation.

The low level of feed grain and wheat stocks projected for the end of the 1975 crop year if exports are as high as assumed for the plus-20 situation will provide little reserve with which to meet possible contingencies such as poor crops in the United States in 1976 or higher needs for food aid for poor countries. The projections for the plus-20 situation probably are least reliable because the low grain stocks expected at the end of the crop year make grain markets especially vulnerable to unforeseeable events.

TABLE 1.—PROJECTIONS OF UTILIZATION OF MAJOR CROPS IN THE 1975 CROP YEAR AND OF YEAR-END STOCKS IN THE NORMAL EXPORT SITUATION

Utilization or stocks	Feed grains (million tons)	Wheat (million bushels)	Soybeans (million bushels)	Cotton (million bales)
Fed to livestock	137.2	220	[1] 804	
Other domestic use	18.6	612	80	6.8
Exports, net	40.0	1,100	450	4.0
Stock change	+6.7	+193	+106	−1.4
Total production	202.5	2,125	1,440	9.4
Year-end stocks[2]	21.4	512	326	4.3

[1] Soybeans crushed. Of soybean meal, 14,500,000 tons fed and 4,600,000 tons exported.
[2] At close of crop years as defined by USDA, June 30 to Sept. 30, 1976.

TABLE 2.—PROJECTED FARM PRICES FOR THE 1975 CROP YEAR, WITH NORMAL EXPORTS, COMPARED WITH ACTUAL DATA FOR EARLIER YEARS

Commodity or index	Calendar years— 1969–71 average	1973	1974	Projections, 1975 crop year
Individual commodities:[1]				
Beef cattle, dollars per 100 poumds	27.43	42.80	35.68	35.60
Hogs, dollars per 100 pounds	20.80	38.40	34.27	52.75
Broilers, dollars per pound	.142	.240	.215	.248
Eggs, dollars per dozen	.368	.525	.533	.541
Milk, dollars per 100 pounds	5.69	7.14	8.31	8.67
Corn, dollars per bushel	1.21	1.89	2.92	2.64
Wheat, dollars per bushel	1.32	3.08	4.48	3.17
Soybeans, dollars per bushel	2.66	6.50	6.41	5.00
Cotton, dollars per pound	.222	.325	.495	.42
Price indexes, 1967=100:				
All crops	101	164	212	196
Livestock products	117	179	163	182
All farm products	110	172	183	187

[1] Annual prices for crops are simple averages of monthly prices during the year; annual prices for livestock products are weighted averages computed by USDA.

TABLE 3.—PROJECTIONS OF INCOME AND EXPENSES IN FARMING IN THE 1975 CROP YEAR, WITH NORMAL EXPORTS, AND COMPARISONS WITH ACTUAL DATA FOR EARLIER YEARS

[Billions of dollars]

Item	Calendar years 1969–71 average	1973	1974	Projections, 1975 crop year
Cash receipts from marketings:				
Livestock	29.6	45.8	41.4	46.4
Crops	21.0	41.1	52.1	49.0
All products	50.5	86.9	93.5	95.4
Government payments	3.6	2.6	.5	.3
Other farm income	4.4	5.8	7.1	7.3
Realized gross income	58.5	95.3	101.1	103.0
Production expenses	45.0	65.8	73.4	81.4
Realized net income from farming	13.5	29.5	27.7	21.6
Prices paid for family living, 1967=100	(114.0)	(138.0)	(161.0)	(186.0)
Realized net income in 1967 dollars	11.8	21.4	17.2	11.6

Note: Details may not add to totals because of rounding.

TABLE 4.—PROJECTIONS FOR 3 EXPORT SITUATIONS,[1] 1975 CROP YEAR

Item	Normal exports	Plus 10	Plus 20
Exports:			
Feed grains (million tons)	40.0	46.4	52.0
Wheat (million bushels)	1,100	1,220	1,370
Soybeans (million bushels)	450	450	475
Increase in stocks during year:			
Feed grains (million tons)	6.7	1.9	0.9
Wheat (million bushels)	193	163	43
Soybeans (million bushels)	106	114	93
Stocks at end of commodity crop year:			
Feed grains (million tons)	21.4	16.6	15.6
Wheat (million bushels)	512	482	362
Soybeans (million bushels)	326	334	313
Feed concentrates fed to livestock (million tons)	178	174	168
Production (commercial for red meats):			
Beef (billion pounds)	25.3	25.0	24.7
Pork (billion pounds)	10.9	10.7	10.6
Broilers (billion pounds)	11.8	11.5	11.1
Eggs (billion dozens)	5.3	5.3	5.2
Farm prices:			
Cattle (per 100 pounds)	$35.60	$36.25	$37.25
Hogs (per 100 pounds)	$52.75	$54.50	$56.75
Broilers (cents per pound)	24.8	25.6	26.4
Eggs (cents per dozen)	54.1	56.2	58.8
Corn (per bushel)	$2.64	$2.93	$3.30
Wheat (per bushel)	$3.17	$3.55	$4.15
Soybeans (per bushel)	$5.00	$5.30	$6.00
Farm price indexes, 1967=100:			
Crops	196	205	218
Livestock products	182	186	191
All farm products	187	193	202
Cash receipts from marketings (billions)	$95.4	$98.3	$102.6
Realized gross farm income (billions)	$103.0	$105.9	$110.2
Farm production expenses (billions)	$81.4	$82.1	$83.0
Realized net farm income (billions)	$21.6	$23.8	$27.2
Retail food price index, 1967=100	186.3	188.2	190.8

[1] See text for description of the export situations.