An Empirical Analysis of Alternative Export Subsidy Programs for U.S. Wheat

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Abstract

U S wheat exports have fallen nearly 20 percent since 1981. Major contributing factors appear to be the strong U S. dollar, debt problems in many grain-importing countries, and mandated support levels providing an umbrella under which U S competitors can produce and sell their grains U S subsidies for wheat sales abroad, either directly or by segmenting the domestic and export markets, might offset these factors This article analyzes the consequences of several export subsidy programs on U S producers, consumers, and taxpayers under alternative assumptions regarding the price responsiveness of the world wheat market

Keywords

Farm programs, international trade, export subsidies, two-price program, wheat

Introduction

U S wheat exports have stagnated in recent years Major contributing factors appear to be a strong dollar and debt problems in many grain-importing countries (*12*) [1] The U S wheat loan rate has also kept the U S wheat price from falling to market-clearing levels, further reducing the *competitiveness* of U S wheat abroad Some economists argue that the U S Government should reduce the cost of U S wheat to foreign buyers through direct subsidies or should segment its domestic and export markets using a so-called "two-price" program This action would reduce the negative effects of relatively high loan rates on U S grain exports and still maintain price and income support to farmers Such programs originally surfaced during the twenties as a way to hold the U S price above the world price level, thus enabling farmers to receive a fair market return (*8*) Simply put, export subsidy programs artificially raise the price of grain sold for domestic consumption and lower the price of grain sold to export markets Thus, domestic grain consumers are taxed whereas foreign consumers receive a subsidy

Proponents of subsidy programs point out that such programs increase the competitiveness of U S grain in international markets, thereby expanding exports and placing additional pressure on the European Community (EC) to reform its agricultural policies Because the domestic market for U S grains is less responsive to changes in market price than is the international market, subsidy proponents also suggest that such programs might be used to increase farmers' net returns and simultaneously reduce Government outlays for price and income support

However, export subsidy programs have serious negative aspects As already indicated, these programs increase the price of grain domestically Consumers pay higher prices for grain-based food products And, competitor countries would probably view such a program as a major effort by the United States to restrict free trade Some might retaliate by instituting trade barriers or by increasing export subsidies on either or both agricultural and nonagricultural (such as steel and textile) goods At a minimum, the United States could lose some of its ability to pressure other countries to reduce trade barriers

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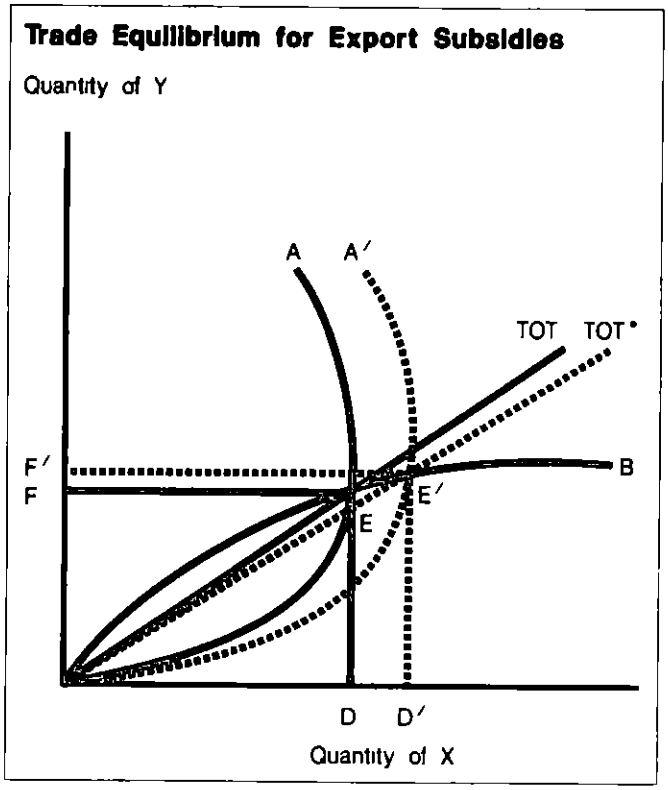
[1] Italicized numbers in parentheses refer to items in the References at the end of this article

The purpose of this article is to analyze the effects of two alternative export subsidy programs on domestic wheat producers, consumers, and taxpayers The first alternative is simply a Government export subsidy paid on each bushel of wheat sold for export The second program would establish a high support price on wheat sold for domestic food use and a much lower support price on wheat sold for export and nonfood domestic uses

Theoretical Foundations

Assume that the shortrun objectives of an export subsidy program are to raise domestic producer prices and incomes Let us begin by assuming there are two countries, A and B, and two commodities, X and Y These assumptions are easily modified without loss of generality Country A exports X (with domestic and international prices being P_x^d and P_x, respectively) and imports Y (with prices being P_y^d and P_y) Country B imports X and exports Y Although the pattern of trade could change over time, assume that a fixed pattern holds for the trading world at any point The figure displays the free-trade and trade subsidy equilibrium

Trade Equilibrium for Export Subsidies



The curve OA is country A's free-trade offer curve The shape of the curve is characterized by the increasing opportunity cost of commodity X's production (*1*) OB is country B's free-trade offer curve Point E, where OA intersects OB, is the free-trade equilibrium The slope of the straight line, TOT, is the terms of trade in the free-trade world By providing an export subsidy on commodity X, A's offer curve (subsidy-distorted offer curve) shifts to the right of E OA′ is the new offer curve for country A under a trade subsidy program The new equilibrium is E′ where country A is willing to trade OD′ of commodity X for OF′ of commodity Y TOT*, the new terms of trade, is lower from country A s point of view, but is higher from country B's Thus, country A has to give up more units of X for each unit of Y than before the subsidy, and the subsidy lowers the world price of X in terms of Y (P_x/P_y) The welfare of country B increases while A's decreases because country A's consumers will pay more for X while country B's consumers will pay less

The overall results appear contradictory In terms of domestic welfare, the subsidizing exporter suffers a net welfare loss, although the volume of exports expand However, the loss in net welfare may decline if the export subsidy is not applied uniformly to all countries (*16*)

In a multicountry world with many importers and exporters, a per-unit subsidy will cause importers to expand their import volume as the subsidy lowers the world price The subsidizing exporter expands exports at the expense of other exporting countries The degree to which world prices fall and the export volume of the subsidizing country expands will depend on the level of the subsidy and the responsiveness (elasticities) of demand and supply in importing and exporting countries to changes in world prices, assuming, of course, that other exporters do not retaliate

Now let us consider more closely the effects of an export subsidy on the U S wheat market For simplicity, assume that there are two markets for U S wheat the domestic market, which we characterize as highly price inelastic, and the export market, which we assume is considerably more responsive to price changes

If demand in each market is characterized by the following equation

$$Q_i = a_i - b_iP_i \qquad i = 1,2 \qquad (1)$$

where $i = 1$ is the domestic demand for wheat and $i = 2$ is the export demand for wheat, then total sector profits (TP) is given by

$$TP = P_1Q_1 + P_2Q_2 - C(Q_1 + Q_2) - FC \qquad (2)$$

where C represents variable cost per unit of production and FC represents total fixed costs Solving equation (1) for P_i and substituting the result into equation (2), one obtains the following expression for total profits

$$TP = Q_1(a_1 - Q_1)/b_1 + Q_2(a_2 - Q_2)/b_2 - C(Q_1 + Q_2) - FC \qquad (3)$$

The first-order conditions for profit maximization are

$$\partial TP/\partial Q_1 = (a_1 - 2Q_1)/b_1 - C = 0 \qquad (4)$$

$$\partial TP/\partial Q_2 = (a_2 - 2Q_2)/b_2 - C = 0 \qquad (5)$$

Or, equivalently

$$(a_1 - 2Q_1)/b_1 = (a_2 - 2Q_2)/b_2 \qquad (6)$$

Equation (6) states that a monopolist who practices price discrimination will maximize profits by setting the marginal revenue in each market equal to the marginal cost of production Furthermore, a monopolist selling in more than one market will maximize profits by setting a higher price in the market which exhibits the lower demand elasticity

Because the domestic wheat market is generally less responsive to price change than the export market, wheat producers' profits would tend to increase if these two markets were segmented with a higher price charged to domestic consumers Higher returns to producers, in turn, suggest that Government outlays for price and income support might decline, thereby easing the burden on taxpayers Of course, if a high support price is set on wheat sold domestically, consumers would pay higher prices, however, consumers are also taxpayers If exports are subsidized directly, farmers' incomes rise and the decline in Government outlays resulting from lower deficiency and diversion payments may offset the cost of the export subsidy

At what level should domestic and export prices be set? Equation (6) indicates that the marginal revenue in each market should equal marginal cost For example, variable expenses per bushel for wheat in 1983 averaged \$1 41, total domestic use equalled 1 111 billion bushels, and exports totalled 1 429 billion bushels (*18*) The average price received in 1983 was \$3 53 per bushel If we further assume that the own-price elasticity of demand for wheat used domestically is −0 20, then the domestic demand function for wheat can be characterized by the following equation [2]

$$Q_1 = 1333\ 21 - 62\ 95P_1 \qquad (7)$$

By substituting the above values for a_1 and b_1 in equation (6), we obtain

$$\frac{(1333\ 21 - 2Q_1)}{62\ 95} = 1\ 41 \qquad (8)$$

$$2Q_1 = 1244\ 45 \qquad (9)$$

$$Q_1 = 622\ 23 \qquad (10)$$

By substituting the value of Q_1 into equation (7) and solving for price, we obtain

$$622\ 23 = 1333\ 21 - 62\ 95P_1 \qquad (11)$$

$$62\ 95P_1 = 710\ 98 \qquad (12)$$

$$P_1 = 11\ 29 \qquad (13)$$

Thus, a profit-maximizing, price-discriminating monopolist would set the domestic price of wheat at \$11 29 per bushel and would market 622 million rather than 1 111 billion bushels domestically

We can derive corresponding quantities and prices for the export market Past studies, however, provide a wide range of elasticity estimates for U S wheat exports Rather than selecting one particular value, we steadily increase the export elasticity from 0 25 to 4 00 Table 1 shows the corresponding quantities exported and the export price

[2]Assuming a linear demand function reasonably approximates the true functional relationship between domestic use and price

Table 1—Price discriminating export quantities and prices

Item	Unit	Export elasticities				
		−0 25	−0 50	−1 00	−2 00	−4 00
Price	Dollars per bushel	9 53	6 00	4 24	3 35	2 91
Quantity	Million bushels	821 80	929 00	1,143 60	1,572 70	2,430 90

The results in table 1 indicate that the export elasticity would have to be approximately 2 00 in the short run before a price-discriminating monopolist would set the export price below $3 53 per bushel, the average farm price for the 1983/1984 crop year Most past studies indicate that the wheat export elasticity is less than 1 00, thus, a price-discriminating monopolist would set a higher price than $3 53 per bushel in both domestic and export markets (table 2) This situation contrasts with current two-price proposals which involve lowering the support price (below current levels) for wheat for export to increase U S competitiveness in world markets

Theory provides little clue as to whether farmers would be better off if a two-price program included a higher domestic price coupled with a lower export price We have also ignored losses in transfer payments that could result from stronger domestic prices

Empirical Model

We used a computer simulation model of the U S wheat sector to measure the effects of alternative export subsidy programs for U S wheat The model consists of 39 equations to estimate wheat production, use, price, Commodity Credit Corporation (CCC) loan activity, farmers' gross and net income, consumer expenditures for wheat products, and Government wheat program outlays

The computer simulation model was developed for use on a personal computer compatible with the Lotus 1-2-3 software This software solves the simultaneous equation model using policy variables and assumed intercept and slope coefficients as input data for each supply and use function All functions are linear in parameters, but the flexibility exists to change assumed intercept and slope coefficients each year during the simulation period, thereby allowing the user to analyze alternative policies over a range of various elasticity estimates for supply and use The default response coefficients in the model stem from past empirical studies of the U S wheat sector including previous computer modeling efforts such as FAPSIM (*15*) and WHEATSIM (*10*) We also estimated several functional relationships to update and provide information on response coefficients generally not included in past studies

Supply

We determined the total supply of wheat by summing production, imports, and beginning stocks Wheat imports are negligible and treated as exogenous Beginning stocks equal previous-year ending stocks, and production equals acreage harvested times yield per harvested acre

We specified acreage harvested as a linear function of acreage planted and yield per harvested acre as a function of acreage planted and acreage set aside and diverted We assumed acreage planted is related to both market and Government program incentives Program incentives include target price, loan rate, diversion payment rate, and the proportion of land which must be diverted from production We also assumed the basis for a farmer's production decision is the return over variable cost of production

We assumed that the decision to participate in an announced Government acreage reduction program

Table 2—Elasticities of supply and demand for U S. wheat

Author	Date period	Supply	Food demand	Feed demand	Export demand
			Elasticities		
Blakeslee (*2*)	1954-74	0 047- 188	−0 012	−2 11	−2 00 −3 56
Bredahl, Meyers, Collins (*3*)	NS	—	—	—	0-−1 67
Cochrane, Danin (*4*)	1950-73	—	− 370[1]	—	− 50
Salathe, Price, Gadson (*15*)	1962-79	290	− 070	−1 49	− 54
Fox (*6*)	1929 53	—	− 067	—	− 50
Gallagher, Lancaster, Bredahl, Ryan (*7*)	1955 75	510[2]	—	−3 29	− 41
Honma, Heady (*11*)	1968-81	350	− 200	—	− 44
Longmire, Morey (*12*)	NS	200	− 400[3]	—	—
Matthews (*13*)	1954-70	—	− 150	—	− 35
Morton, Devados, Heady (*14*)	1960-79	098	—	−1 73	− 14
Tweeten, Kalbfleisch, Lu (*17*)	NS	—	− 046-− 060	− 56	− 50
Zwart, Meilke (*19*)	1953-74	090	− 100	—	—

NS = Not specified
— = Not available
[1]Total domestic demand
[2]Winter wheat only
[3]Total wheat demand

is determined by the difference in expected returns between participation and nonparticipation Multiplying the market price for the previous year by the farmer's yield expectation and subtracting variable costs of production provides the estimated expected return from nonparticipation We estimated yield expectation using a moving average of yields for the previous 5 years excluding the lowest and highest yields The expected return from participating in an announced acreage reduction program is a function of target price, loan rate, expected market price, expected yield, diversion payment rate, program yield, and the amount of land to be idled (*15*)

Acreage planted is a linear function of the expected program and market returns and acreage set aside and diverted We hypothesized that an increase in expected market and program returns provides an incentive to plant additional acreage The model's default coefficients assume that each $10-per-acre increase in expected returns increases planted acreage by 1 5 million acres, implying a price elasticity of 0 22 with respect to acreage We assume acreage planted would decline by 0 67 of an acre for each 1-acre increase in acreage set aside and diverted, a slippage factor of 0 33 which corresponds to earlier studies (*5, 15*)

Use

The computer simulation model estimates food and industrial use, seed use, feed use, exports, and ending stocks Ending stocks consist of three components farmer-owned reserve, CCC stocks, and free stocks Food and industrial use, exports, and feed use are linear functions of price. Past studies generally indicate that food and industrial use is highly price-inelastic whereas feed use is price-elastic (table 2) However, there is little consensus about the responsiveness of U S wheat exports to changes in price The default slope coefficients in the model assume elasticities (based on 1984 crop year estimates) of −0 07, −1 05, and −0 45 for food and industrial use, feed use, and exports, respectively

We patterned the functional relationships for farmer-owned reserves, CCC stocks, and free stocks after those in FAPSIM (*15*) Free stocks are a function of price and the level of farmer-owned reserve stocks The model assumes that each 1-bushel increase in reserve stocks would reduce free stocks by 0 3 bushel

We assumed that wheat placed in the farmer-owned reserve would remain in the reserve for 5 years unless market price equals or exceeds the reserve release price If price fails to reach the release level during the 5-year period, reserve placements would default to the CCC If price exceeds the release price during the contract period or the loan rate plus interest charges at the end of the contract period, reserve stocks become available to the open market

CCC stocks consist of stocks acquired by the Government through price-support programs We assumed that CCC stocks would accumulate as farmers default on reserve and regular CCC loans CCC stocks are available to the open market only when the market price exceeds the reserve release price by 5 percent

Loan Activity

The model predicts price-support loan activity based on market price, loan rate, and CCC interest charges The loan activity component of the model consists of five equations The first, beginning outstanding loans, equals the sum of outstanding reserve and regular CCC loans at the beginning of the crop year Loan placements are based on an econometric relationship and are a function of the market price and the loan rate If price is between the CCC loan rate and the release price, each 10-percent increase in the market price relative to the loan rate reduces total loan placements by 76 million bushels

Total loan repayments consist of reserve loan and regular 9-month loan repayments We assumed that farmers will repay outstanding loans at the beginning of the crop year if price exceeds the loan rate plus interest charges If price fails to exceed the loan rate plus interest charges, outstanding loans would default to the CCC We then added the quantity of grain defaulted to the CCC to existing CCC stocks

Market Price

We determined the market price of wheat by solving the supply-demand equilibrium condition for price For example, total supply is predetermined at the beginning of the crop year The equilibrium price is that price which equates total supply and total use plus ending stocks Because all use equations and ending stocks are linear in price, we can solve these equations to determine that price which uniquely equates supply and demand [3]

Market price can be altered by Government reserve and CCC stock programs For example, the reserve may act to hold prices at the release level when supply is low relative to demand To account for such policies, we used decision rules to adjust market prices in situations when price is estimated to exceed the release level or to fall below the loan rate First, we assumed that the 9-month regular loan generally acts as a price floor and the minimum market price thus becomes the loan rate Second, as mentioned earlier, we assumed that reserve and CCC stocks would be placed back on the open market when prices reach their corresponding release

[3]Under the $7 00 (domestic price)/$2 50 (export price) and $10 00/$2 50 two price programs analyzed in this study, we calculated the equilibrium market price by first estimating the level of food and industrial use, by subtracting that figure from the total available supply, and by then determining that price which uniquely equates the reduced available supply and total demand less food and industrial use

levels Under this situation, the market price equals the release price, and the market price does not exceed the release price unless total reserve or CCC stocks are depleted

Income Indicators

The model estimates the change in farmers' net income resulting from a change in Government policy The model estimates farmers' gross income by summing the value of production (price times production), deficiency payments, diversion payments, and reserve storage payments We calculated deficiency payments by multiplying the difference between the target price and the maximum of the loan rate and the 5-month market price by the participation rate, program yield, base acreage, and 1 minus the set-aside and diversion rate We estimated diversion payments by multiplying the diversion payment rate by the program yield, base acreage, and proportion of land diverted from production We determined storage payments by multiplying the level of reserve stocks by the reserve storage payment rate per bushel Farmers' net income is calculated as gross income minus variable production expenses per planted acre times planted acreage

Net CCC Outlays

We estimated CCC loan outlays by subtracting the basis We derived these estimates by allocating crop-year loan activity and Government payments between fiscal years The model endogenously estimates both Government payments and changes in CCC loan activity Government payments consist of deficiency, diversion, and reserve storage payments We estimated CCC loan outlays by subtracting the value of loan placements (loan placements times the current loan rate) from the value of loan repay ments An additional cost to the Government is the cost of storing and handling existing CCC stocks We calculated this outlay by multiplying the aver age CCC stock level by a fixed cost per bushel for storage and handling

Consumer Expenditures

We estimated consumer expenditures for bakery products by multiplying the farm price by the quantity of wheat used for food and industrial use plus marketing, processing, and transportation costs [4] We assumed that costs beyond the farm gate would increase at about the rate of inflation during the study period and would remain unaffected by changes in wheat export programs

Baseline Assumptions

We simulated each export program over the crop year period from 1985/86 through 1991/92 Thus, the simulated impacts are conditional upon assumptions regarding demand growth, productivity, and agricultural policies and programs

Current agricultural legislation expired in 1985 Rather than attempt to out-guess the Congress, we assumed future legislation would not be radically different from current farm policies and programs That is, the Secretary of Agriculture would still have the authority to implement acreage reduction and land diversion programs if needed We assumed that target prices and loan rates would be mandated at minimum levels of $4 38 and $3 30 per bushel, respectively, for 1986/87 through 1991/92, the same as in 1984/85 and 1985/86 We assumed that the diversion payment rate and farmer-owned reserve storage payment rate would remain at $2 70 and $0 265 per bushel throughout the simulation period

We assumed that productivity would continue to grow at the pace of the past decade Wheat yields per harvested acre are forecast to increase by about 0 6 bushel per acre per year Food and industrial use should increase with population growth, rising from about 650 million bushels in 1985/86 to about 700 million bushels in 1991/92 Seed use should remain at about 90 million bushels throughout the simulation period, reflecting the expectation of minimal growth in wheat acreage from 1985/86 through 1991/92 Feed use will average about 255 million bushels over the period, declining from 1984/85 levels as the price of corn declines from its drought-heightened 1983 level to a more normal relationship with wheat Wheat export growth will likely be considerably below that of the seventies

[4] Under the $7 00/$2 50 and $10 00/$2 50 program alternatives, we substituted the domestic support price for food and industrial use for the farm price when calculating consumer expenditures for bakery products

We expect wheat exports will remain steady at about 1 3 billion bushels for 1985/86 through 1987/88 and then steadily rise to slightly over 1 4 billion bushels for 1991/92 This forecast assumed that the dollar will remain strong in world markets with slow economic growth and a continuation of debt-financing problems in many less-developed countries We also assumed the United States will continue current export credit guarantee and export promotion programs at about the same funding level as in fiscal year 1984

Given these assumptions, an initial simulation indicated that ending stocks would remain large in relation to historical levels and that wheat prices would remain depressed throughout the 1985/86 to 1991/92 period in the absence of a land retirement or an expanded export program We, therefore, assumed the Secretary will announce an acreage reduction program to cut supplies, strengthen prices, and reduce CCC program outlays Under the baseline, the 20-percent acreage reduction and 10-percent paid land diversion program announced for 1985 is continued through 1991/92 This program removes about 20 million acres from production each year Despite the placement of about 20 million acres in conserving use each year, ending wheat stocks grow from about 1 5 billion bushels in 1985/86 to over 3 billion bushels by the end of the 1991/92 marketing year The average farm price of wheat increases moderately under the baseline policy scenario from $3 30 per bushel in 1985/86 to about $3 37 per bushel in 1991/92 CCC net outlays under the baseline average over $4 2 billion per year with over half the outlays being in the form of deficiency and diversion payments [5]

Empirical Analysis

We analyzed two types of export subsidy programs Because of the wide range of elasticity estimates for U S wheat exports, we ran each program with the export elasticity ranging from −0 25 to −4 00 We chose this range to provide information on the likely effects of each program alternative and on the sensitivity of the estimates to the choice of the export elasticity

We conducted a total of five simulations The first simulation assumes a direct subsidy of 50 cents per bushel on each bushel of wheat for export, and the second assumes a direct subsidy of $1 per bushel The third assumes a direct subsidy of $1 50 per bushel coupled with elimination of production controls The final two simulations also assume elimination of production controls with the Government's setting a $7 and $10 per bushel support price for wheat for domestic food and industrial use, respectively In these final two simulations, we set the support price for wheat for export and other domestic uses at $2 50 per bushel, the program would be financed by taxing wheat processors

Export Subsidy of 50 Cents per Bushel

The simulation results indicate that compared with the baseline, a 50-cent-per-bushel subsidy on each bushel of wheat for export would increase U S wheat exports, farm prices, and wheat production [6] Assuming wheat exports have an elasticity of 0 5, farm price would increase by 10 cents per bushel on average for crop years 1985/86 to 1991/92 (table 3) Harvested acreage would increase on average by less than 1 million acres, production by about 20 million bushels, and exports by about 85 million bushels Ending stocks would average about 215 million bushels lower over the simulation period Compared with the baseline, farmers' gross income would average about $80 million higher, CCC net outlays about $240 million higher, and consumer expenditures about $65 million higher

A closer examination of the results in table 3 reveals that, as the export elasticity increases, farm price and farmers' incomes rise, CCC net outlays fall, and consumer expenditures increase A 50-cent-per-bushel export subsidy would increase farmers' incomes even when the export elasticity is assumed to be below 1, because higher farm prices more than offset the decline in income resulting from lower deficiency payments

Although farmers' gross and net incomes would be higher, CCC net outlays would not fall below their

[5]This baseline is used only for comparison and does not represent official USDA estimates

[6]For over 50 years, U S wheat export subsidies ranging from 1 to 95 cents per bushel were paid to grain export companies Subsidy payments ended in September 1972 when the U S price came into line with the world market price (9)

Table 3—Effects of an export subsidy of 50 cents per bushel[1]

Item	Unit	Baseline	Export elasticities				
			−0 25	−0 50	−1 00	−2 00	−4 00
Acreage planted	Million acres	72 52	72 96	73 33	73 74	74 05	74 53
Acreage harvested	do	65 27	65 66	66 00	66 37	66 65	67 09
Yield per acre	Bushels	41 00	40 91	40 84	40 77	40 71	40 63
Supply	Million bushels						
Beginning stocks	do	2,183 07	2,085 62	2,019 77	1,914 82	1,680 12	1,276 60
Production	do	2,674 25	2,685 67	2,695 16	2,705 43	2,712 99	2,725 39
Imports	do	3 00	3 00	3 00	3 00	3 00	3 00
Total	do	4,860 32	4,774 29	4,717 93	4,623 25	4,396 11	4,004 99
Use							
Food and industry	do	678 99	678 26	677 74	676 89	676 40	675 52
Seed	do	91 21	91 74	92 20	92 71	93 08	93 67
Feed	do	254 80	248 52	243 96	236 61	232 38	224 81
Exports	do	1,382 14	1,427 86	1,464 83	1,519 29	1,624 25	1,749 39
Total	do	2,407 15	2,446 39	2,478 74	2,525 49	2,626 11	2,743 39
Ending stocks	do	2,453 18	2,327 19	2,239 19	2,097 96	1,770 00	1,261 59
Price	Dollars per bushel	3 33	3 39	3 43	3 50	3 54	3 61
Income indicators	Million dollars						
Value of production	do	8,909 74	9,105 01	9,249 30	9,468 60	9,600 20	9,837 87
Deficiency payments	do	1,920 07	1,799 29	1,702 80	1,565 55	1,477 47	1,324 47
Storage payments	do	152 41	145 32	141 14	136 09	130 89	124 29
Diversion payments	do	789 26	772 08	757 39	741 44	729 47	710 60
Total gross income	do	11,771 47	11,821 70	11,850 62	11,911 67	11,938 03	11,997 23
Variable expenses	do	4,485 36	4,512 57	4,535 46	4,560 82	4,579 99	4,609 68
Total net income	do	7,286 11	7,309 12	7,315 16	7,350 85	7,358 04	7,387 55
Net CCC outlays[2]							
Deficiency payments	do	1,770 90	1,657 17	1,556 50	1,450 01	1,356 59	1,225 60
Diversion payments	do	791 69	773 94	759 59	740 94	727 22	708 82
Storage payments	do	150 33	143 21	139 03	134 49	129 09	123 13
Net lending	do	931 41	829 26	748 69	609 87	290 67	−61 22
Export subsidy	do	0	712 18	729 95	758 37	809 88	873 08
Other	do	558 37	530 81	509 83	472 16	370 44	190 49
Total	do	4,202 69	4,646 57	4,443 60	4,165 84	3,683 90	3,059 89
Consumer expenditures[3]	do	37,783 45	37,821 71	37,847 06	37,891 53	37,916 87	37,961 04

[1]Unless indicated otherwise, numbers are crop year 1985/86 to 1991/92 averages
[2]Fiscal year 1986 91 averages
[3]For bakery products

baseline value unless the export elasticity is nearly 1 Thus, the export elasticity must be nearly 1 before the cost of the export subsidy would be more than offset by Government savings from lower deficiency, storage, and diversion payments and from lower CCC net loan activity and storage costs If the cost of supporting farmers incomes is calculated as the change in CCC net outlays and consumer expenditures, the export elasticity must be above 1 before the total cost of supporting farm income would fall below its baseline value

The simulation results suggest that farmers' incomes, CCC net outlays, and consumer expenditures do not vary greatly from their baseline values despite the wide range for the export elasticity Assuming an export elasticity of 2, farmers' gross income less variable expenses would average less than 1 percent higher ($72 million), CCC net outlays less than 13 percent lower ($519 million), and consumer expenditures less than 1 percent ($133 million) higher than their respective baseline values

Earlier we stated that economic theory indicates that the subsidizing exporter suffers a net welfare loss The results, however, suggest that, for some values of the export elasticity, an export subsidy could result in net benefits to society as taxpayer savings plus increases in farmers' incomes exceed increases in consumer costs At first glance, the results appear inconsistent with economic theory However, economic theory generally begins with the assumption of perfect competition or no Government intervention and then measures the effects of a change in policy on consumers, taxpayers, and producers But, the baseline from which the effects of each program are measured assumes that the Government will intervene in the wheat market by implementing acreage reduction and paid land diversion programs and by providing income and price protection to producers by setting target prices and loan rates This basic difference in the policy environment from which the export subsidy effects are measured explains why our results differ from those generated under the assumption of perfect competition or no Government intervention

Export Subsidy of $1 per Bushel

Assuming a subsidy of $1 per bushel rather than 50 cents will increase wheat farmers' gross income at each value of the export elasticity (table 4) If the export elasticity equals 0 5, a $1-dollar-per-bushel export subsidy would increase wheat exports on average by nearly 170 million bushels, the price of wheat by 18 cents per bushel, and wheat farmers' gross income less variable expenses by nearly $68 million Compared with the baseline, CCC net outlays average $594 million per year higher and consumer expenditures increase by nearly $115 million per year if the export elasticity equals 0 5

Again, CCC net outlays fail to decline below their baseline value unless the export elasticity is nearly 1 However, if the total cost of supporting farmers' incomes is calculated as the change in both CCC net outlays and consumer expenditures, the total cost of supporting farmers' incomes would exceed its baseline value unless the export elasticity is above 1 Assuming an export elasticity of 4, farmers' net income would average $397 million per year higher (or about 5 4 percent above its baseline value), CCC net outlays about $1,140 million lower (27 1 percent), and consumer expenditures for bakery products about $434 million higher (1 1 percent)

Export Subsidy of $1.50 per Bushel and No Production Controls

In an attempt to reduce CCC net outlays, one alternative is to eliminate production controls and thereby to eliminate deficiency and diversion payments In fact, some analysts argue that production controls reduce U S competitiveness in world markets as competitor countries expand production while the United States simultaneously idles land A policy of no production controls coupled with a direct subsidy on exports would provide a signal that the United States is unwilling to balance world supply and demand for wheat by adjusting production

If one assumes an export elasticity of 0 5, the farm price would average 14 cents per bushel higher and acreage harvested would average about 11 million acres higher than under a continuation of current programs (table 5) Wheat production would increase on average by about 200 million bushels, and the export subsidy of $1 50 per bushel would increase exports by nearly 283 million bushels despite the higher price for wheat But, wheat farmers' gross income would average over $1 6 billion lower

Table 4—Effects of an export subsidy of $1 per bushel[1]

Item	Unit	Baseline	Export elasticities				
			−0 25	−0 50	−1 00	−2 00	−4 00
Acreage planted	Million acres	72 52	73 34	73 84	74 30	75 89	77 41
Acreage harvested	do	65 27	66 00	66 46	66 88	68 32	69 71
Yield per acre	Bushels	41 00	40 84	40 75	40 67	40 38	40 10
Supply	Million bushels						
Beginning stocks	do	2,183 07	1,988 62	1,831 26	1,445 60	1,218 31	1,149 23
Production	do	2,674 25	2,695 23	2,707 79	2,719 66	2,759 04	2,795 72
Imports	do	3 00	3 00	3 00	3 00	3 00	3 00
Total	do	4,860 32	4,686 86	4,542 05	4,168 26	3,980 35	3,947 94
Use							
Food and industry	do	678 99	677 72	676 72	676 00	673 12	670 41
Seed	do	91 21	92 20	92 82	93 39	95 34	97 22
Feed	do	254 80	243 77	235 17	228 97	204 06	180 67
Exports	do	1,382 14	1,475 17	1,551 70	1,697 51	1,821 20	1,900 87
Total	do	2,407 15	2,488 86	2,556 41	2,695 88	2,793 72	2,849 17
Ending stocks	do	2,453 18	2,197 99	1,985 64	1,472 39	1,186 64	1,098 77
Price	Dollars per bushel	3 33	3 43	3 51	3 57	3 80	4 02
Income indicators	Million dollars						
Value of production	do	8,909 74	9,254 52	9,512 55	9,711 22	10,489 61	11,234 00
Deficiency payments	do	1,920 07	1,699 96	1,535 36	1,404 65	937 32	557 48
Storage payments	do	152 41	141 63	135 59	127 43	105 52	82 77
Diversion payments	do	789 26	757 31	737 72	719 42	656 87	596 39
Total gross income	do	11,771 47	11,853 42	11,921 01	11,962 72	12,189 17	12,470 63
Variable expenses	do	4,485 36	4,536 08	4,567 00	4,595 46	4,693 80	4,787 81
Total net income	do	7,286 11	7,317 34	7,354 01	7,367 27	7,495 37	7,682 82
Net CCC outlays[2]							
Deficiency payments	do	1,770 90	1,558 87	1,423 08	1,289 15	871 61	518.19
Diversion payments	do	791 69	759 51	736 60	718 42	652 11	586 85
Storage payments	do	150 33	139 86	133 83	125 94	104 89	82 87
Net lending	do	931 41	712.46	519 61	65 74	−134 37	−217 50
Export subsidy	do	0	1,471 33	1,549 07	1,692 17	1,819 39	1,901 85
Other	do	558 37	494 95	434 48	265 34	190 49	190 49
Total	do	4,202 69	5,136 78	4,796.69	4,156 76	3,504 12	3,063 75
Consumer expenditures[3]	do	37,783 45	37,847 03	37,897 74	37,935 77	38,080 31	38,217 50

[1]Unless indicated otherwise, numbers are crop year 1985/86 to 1991/92 averages
[2]Fiscal year 1986-91 averages
[3]For bakery products

Table 5—Effects of no production control programs and an export subsidy of $1 50 per bushel[1]

Item	Unit	Baseline	Export elasticities				
			−0 25	−0 50	−1 00	−2 00	−4 00
Acreage planted	Million acres	72 52	84 14	84 77	85 38	87 35	88 88
Acreage harvested	do	65 27	75 81	76 39	76 94	78 73	80 12
Yield per acre	Bushels	41 00	37 70	37 67	37 64	37 55	37 48
Supply	Million bushels						
Beginning stocks	do	2,183 07	2,222 74	1,939 34	1,325 02	1,148 59	1,000 12
Production	do	2,674 25	2,856 97	2,876 49	2,895 59	2,956 29	3,003 28
Imports	do	3 00	3 00	3 00	3 00	3 00	3 00
Total	do	4,860 32	5,082 70	4,818 82	4,223 61	4,107 88	4,006 40
Use							
Food and industry	do	678 99	678 95	677 29	675 65	670 33	666 21
Seed	do	91 21	105 49	106 27	107 02	109 44	111 32
Feed	do	254 80	254 42	240 06	225 97	179 95	144 35
Exports	do	1,382 14	1,537 30	1,664 83	1,893 33	2,050 69	2,172 59
Total	do	2,407 15	2,576 16	2,688 45	2,901 98	3,010 61	3,094 48
Ending stocks	do	2,453 18	2,506 55	2,130 38	1,321 63	1,097 27	911 82
Price	Dollars per bushel	3 33	3 33	3 47	3 60	4 02	4 35
Income indicators	Million dollars						
Value of production	do	8,909 74	9,528 81	9,975 60	10,421 99	11,899 56	13,078 15
Deficiency payments	do	1,920 07	0	0	0	0	0
Storage payments	do	152 41	152 03	138 90	125 37	82 53	52 53
Diversion payments	do	789 26	0	0	0	0	0
Total gross income	do	11,771 47	9,680 84	10,114 50	10,547 36	11,982 08	13,130 68
Variable expenses	do	4,485 36	5,204 06	5,243 02	5,280 75	5,402 60	5,497 23
Total net income	do	7,286 11	4,476 78	4,871 48	5,266 61	6,579 48	7 633 45
Net CCC outlays[2]							
Deficiency payments	do	1,770 90	0	0	0	0	0
Diversion payments	do	791 69	0	0	0	0	0
Storage payments	do	150 33	149 99	137 08	124 31	82 74	51 88
Net lending	do	931 41	977 10	641 40	−40 28	−220 65	−374 96
Export subsidy	do	0	2,300 90	2,491 79	2,833 05	3,075 14	3,266 52
Other	do	558 37	579 41	478 76	211 45	190 49	167 12
Total	do	4,202 69	4,007 40	3,749 03	3,128 50	3,127 73	3,111 56
Consumer expenditures[3]	do	37,783 45	37,783 32	37,872 61	37,954 75	38,217 14	38,420 43

[1]Unless indicated otherwise, numbers are crop year 1985/86 to 1991/92 averages
[2]Fiscal year 1986 91 averages
[3]For bakery products

than under the baseline as higher prices and increased production would fail to offset the loss in income from eliminating deficiency and diversion payments Farmers' net income would fall by over $2 4 billion per year as production costs would rise because of expanded acreage CCC net outlays would decline far less ($454 million) than would farmers' income, and consumer expenditures would average about $89 million higher

Farmers' net income would fail to average above the level under current programs unless the export elasticity were to exceed 3 5 Farmers' gross income less variable costs would average 9 7 percent below its baseline value if the export elasticity were 2 and would exceed its baseline value by 4 8 percent if the export elasticity were 4

Eliminating deficiency and diversion payments would reduce CCC net outlays even though exports are subsidized at $1 50 per bushel CCC net outlays would average about $200 million to nearly $1 1 billion lower, but would fail to average less than $3 billion per year even if the export elasticity were 4

Compared with the baseline, consumer expenditures would increase even though production controls would be eliminated because the export subsidy of $1 50 per bushel would increase the price of wheat domestically Consumer expenditures would average $637 million higher if the export elasticity were 4 Total support costs including the change in consumer expenditures would decline by $454 million if the export elasticity were 4 and by $195 million if the export elasticity were 0 25

$7/$2.50 Two-Price Program

Under this two-price program, wheat for domestic food and industrial use would be supported at $7 per bushel, whereas wheat for export, feed, and other nonfood uses would be supported at $2 50 per bushel Wheat for food and industrial use would be supported through direct payments to producers and financed by a tax on wheat processors Wheat processors would pass the cost of the tax on to consumers through higher prices for processed wheat products We also assumed that all production control programs would be eliminated and that producer production response would be determined by the level of farm prices and would, therefore, be independent of the support level for wheat for food and industrial use

The lack of production controls combined with lower food and industrial use, resulting from the $7 per bushel support price, would cause the average farm price to fall below its baseline value Food and industrial use would average about 45 million bushels lower, and wheat production would average 74-144 million bushels higher compared with a continuation of current farm programs (table 6) The farm price of wheat would fall by 25 73 cents per bushel depending on the magnitude of the export elasticity Compared with their respective baseline values, exports would average 76-422 million bushels higher and ending stocks would average 133-1,011 million bushels lower

The simulation results indicate farmers' net income would fall despite the $7 per-bushel support price on wheat for food and industrial use Support payments to producers tend to greatly offset the effects of eliminating deficiency and diversion payments, but lower prices and expanded acreage cause farmers' net income to decline below its baseline value unless the export elasticity is substantially above 4 If the export elasticity were 0 5, farmers' net income would fall below its baseline value by over $2 billion per year and, if the export elasticity were 1, income would average over $1 9 billion per year lower

CCC net outlays would decline dramatically under this program option With the elimination of CCC-financed deficiency payments and no diversion payments, CCC outlays would be limited to loan activity, reserve storage payments, and costs of storing and handling CCC-owned wheat CCC net outlays would average from $1 2 billion to less than $300 million per year or about $3 billion to nearly $4 billion lower than under a continuation of current farm programs

The costs of supporting farmers' income is reflected in higher consumer expenditures for wheat products Compared with the baseline, consumer expenditures for bakery products would average nearly $2 2

Table 6—Effects of a $7/$2.50 two-price program[1]

Item	Unit	Baseline	Export elasticities				
			−0 25	−0 50	−1 00	−2 00	−4 00
Acreage planted	Million acres	72 52	80 66	80 91	81 30	82 08	82 90
Acreage harvested	do	65 27	72 66	72 88	73 23	73 94	74 69
Yield per acre	Bushels	41 00	37 86	37 85	37 83	37 80	37 76
Supply	Million bushels						
Beginning stocks	do	2,183 07	2,095 39	1,954 74	1,737 91	1,516 07	1,444 86
Production	do	2,674 25	2,748 48	2,755 92	2,768 02	2,792 51	2,818 37
Imports	do	3 00	3 00	3 00	3 00	3 00	3 00
Total	do	4,860 32	4,846 87	4,713 71	4,508 93	4,311 58	4,266 22
Use							
Food and industry	do	678 99	633 13	633 13	633 13	633 13	633 13
Seed	do	91 21	101 22	101 52	102 00	102 95	103 97
Feed	do	254 80	334 13	328 07	320 38	310 47	282 36
Exports	do	1,382 14	1,458 23	1,522 69	1,633 94	1,740 08	1,804 29
Total	do	2,407 15	2,526 70	2,585 40	2,689 44	2,277 63	2,823 75
Ending stocks	do	2,453 18	2,320 17	2,128 31	1,819 50	1,533 95	1,442 48
Price	Dollars per bushel	3 33	2 60	2 65	2 72	2 90	3 08
Income indicators	Million dollars						
Value of production	do	8,909 74	7,137 36	7,311 74	7,539 17	8,096 20	8,669 70
Deficiency payments	do	1,920 07	2,787 44	2,752 14	2,707 76	2,596 38	2,484 24
Storage payments	do	152 41	141 00	136 40	128 09	106 80	80 88
Diversion payments	do	789 26	0	0	0	0	0
Total gross income	do	11,771 47	10,065 80	10,200 80	10,375 03	10 799 38	11,234 82
Variable expenses	do	4,485 36	4,988 82	5,004 28	5,028 41	5,076 65	5,121 18
Total net income	do	7,286 11	5,076 98	5,196 00	5,346 62	5,722 73	6,113 64
Net CCC outlays[2]							
Deficiency payments	do	1,770 90	0	0	0	0	0
Diversion payments	do	791 69	0	0	0	0	0
Storage payments	do	150 33	139 00	134 77	126 51	106 53	81 24
Net lending	do	931 41	529 06	394 38	151 79	−54 65	−127.36
Export subsidy	do	0	0	0	0	0	0
Other	do	558 37	499 09	446 03	357 03	280 21	280 22
Total	do	4,202 69	1,167 15	975 17	635 34	332 11	234 10
Consumer expenditures[3]	do	37,783 45	39,954 32	39,954 32	39,954 32	39,954 32	39,954 32

[1]Unless indicated otherwise, numbers are crop year 1985/86 to 1991/92 averages
[2]Fiscal year 1986 91 averages
[3]For bakery products

billion per year higher. Over the entire range of export elasticities, the cost of supporting farmers' income by consumers and taxpayers would average about $850 million to $1.8 billion per year lower than under current programs. Farmers' net income would average about $2.2 billion to $1.2 billion lower over the range of export elasticities.

$10/$2.50 Two-Price Program

Under the $7/$2.50 two-price program, farmers' income would decline below that predicted under a continuation of current farm programs unless the export elasticity were above 4. Supporting wheat for food and industrial use at $10 rather than at $7 per bushel would depress farm prices even more because of lower food and industrial use. But, the negative effect on gross income would be offset by larger direct payments.

Wheat production and use would vary only marginally from their respective values under the $7/$2.50 two-price program. The farm price of wheat would average 2-3 cents per bushel lower compared with the previous program, and gross farm income would average $1.5-1.6 billion per year higher (table 7). Compared with the baseline, the $10/$2.50 two-price program would increase gross farm income if the export elasticity were above about 0.5. Farmers' net income would average from about $650 million lower to about $420 million higher per year than under a continuation of current programs. Farmers' net income would average about $512 million lower per year if the export elasticity were 0.5. CCC net outlays would decline to about $1.1 billion per year. Thus, CCC net outlays would average over $3.1 billion per year lower than under a continuation of current programs.

The costs of supporting farmers' income would be shifted from taxpayers to consumers. Compared with the baseline, consumer expenditures for bakery products would average about $3.7 billion per year higher, which more than offsets the decline in CCC net outlays if the export elasticity fails to exceed 1.50. If the export elasticity were 0.5, the total cost (taxpayer plus consumer) of supporting farm income exceeds its baseline value by about $568 million per year.

Comparing tables 6 and 7 reveals that if the export elasticity were below 1.1 and if the support price on wheat for food and industrial use were increased, the total (consumer plus taxpayer) cost of supporting farmers' income would rise faster than farmers' net income. If the export elasticity were above 1.1, the increase in farmers' net income would exceed the increase in total support costs. Even if the export elasticity were 4, farmers' net income would increase by only $1.04 for each $1 increase in consumer expenditures.

Conclusions

Because the export wheat market is generally more responsive to changes in price than the domestic wheat market, economic theory suggests that we could increase farmers' revenues by segmenting the two markets (domestic and international) and by setting a high support price on wheat for domestic use and a lower support price on wheat for export. Stated differently, economic theory suggests we could increase farmers' revenues if we subsidize wheat exports and tax wheat for domestic use. Of course, if farmers' revenues are increased through the marketplace, the public costs of supporting farmers' incomes would probably fall. From a budgetary viewpoint, such a program is particularly appealing because both farmers and taxpayers might be better off.

The simulation results indicate that a federally funded export sudsidy of 50 cents to $1 per bushel combined with current production control programs would strengthen farm prices and would increase farmers' incomes. Deficiency and diversion payments would decline, but total Government program outlays would increase unless the export elasticity is nearly 1 or higher. Higher farm prices also translate into higher consumer expenditures for wheat products. And, if we calculate the total costs of supporting farmers' incomes as the sum of the change in consumer expenditures and taxpayer costs, the export elasticity must be greater than 1 before the costs of supporting farmers' incomes would decline. The results indicate that, compared with a continuation of current programs and assuming an export elasticity of 1 for U.S. wheat, a 50 cent per bushel subsidy would increase farmers'

Table 7—Effects of a $10/$2 50 two-price program[1]

Item	Unit	Baseline	Export elasticities				
			−0 25	−0 50	−1 00	−2 00	−4 00
Acreage planted	Million acres	72 52	80 48	80 80	81 18	81 93	82 81
Acreage harvested	do	65 27	72 49	72 78	73 12	73 80	74 61
Yield per acre	Bushels	41 00	37 87	37 86	37 84	37 80	37 76
Supply	Million bushels						
Beginning stocks	do	2,183 07	2,175 30	2,030 03	1,795 30	1,527 85	1,415 87
Production	do	2,674 25	2,742 56	2,752 70	2,764 27	2,787 88	2,815 64
Imports	do	3 00	3 00	3 00	3 00	3 00	3 00
Total	do	4,860 32	4,920 86	4,785 73	4,562 58	4,318 73	4,270 51
Use							
Food and industry	do	678 99	595 63	595 63	595 63	595 63	595 63
Seed	do	91 21	100 99	101 39	101 85	102 77	103 86
Feed	do	254 80	337 46	320 29	322 75	304 88	284 37
Exports	do	1,382 14	1,461 43	1,526 93	1,643 00	1,766 31	1,835 16
Total	do	2,407 15	2,495 50	2,554 25	2,663 22	2,769 60	2,819 02
Ending stocks	do	2,453 18	2,425 36	2,231 50	1,899 35	1,549 14	1,451 49
Price	Dollars per bushel	3 33	2 57	2 63	2 70	2 87	3 06
Income indicators	Million dollars						
Value of production	do	8,909 74	7,038 03	7,246 16	7,468 72	7,994 76	8,609 00
Deficiency payments	do	1,920 07	4,427 42	4,388 10	4,347 20	4,248 29	4,135 04
Storage payments	do	152 41	146 76	137 45	130 37	110 99	83 38
Diversion payments	do	789 26	0	0	0	0	0
Total gross income	do	11,771 47	11,612 21	11,771 71	11,946 29	12,354 05	12,827 42
Variable expenses	do	4,485 36	4,977 68	4,997 48	5,020 98	5,067 37	5,121 80
Total net income	do	7,286 11	6,634 52	6,774 23	6,925 31	7,286 68	7,705 62
Net CCC outlays[2]							
Deficiency payments	do	1,770 90	0	0	0	0	0
Diversion payments	do	791 69	0	0	0	0	0
Storage payments	do	150 33	145 00	135 65	128 76	110 60	83 67
Net lending	do	931 41	597 89	462 65	211 79	−42 76	−120 29
Export subsidy	do	0	0	0	0	0	0
Other	do	558 37	526 71	476 62	380 60	280 22	280 22
Total	do	4,202 69	1,269 60	1,074 93	721 16	348 06	243 60
Consumer expenditures[3]	do	37,783 45	41,478 71	41,478 71	41,478 41	41,478 71	41,478 41

[1]Unless indicated otherwise, numbers are crop year 1985/86 to 1991/92 averages
[2]Fiscal year 1986 91 averages
[3]For bakery products

net incomes by about $65 million per year (less than 1 percent) while lowering CCC net outlays by $37 million per year (less than 1 percent) and raising consumer expenditures by $108 million (less than 1 percent) per year A $1-per-bushel subsidy (again assuming an export elasticity of 1) would increase farmers' net incomes by about $81 million while lowering CCC net outlays by $46 million and raising consumer expenditures by $152 million Thus, subsidizing exports by as much as $1 per bushel will only moderately increase wheat farmers' net income

Relaxing production controls while simultaneously subsidizing exports by $1 50 per bushel would reduce CCC net outlays by $195 million to $1 1 billion per year for FY 1986/87 to 1991/92 Despite the export subsidy, farmers' net income would fall unless the export elasticity were above about 3 5 Assuming an export elasticity of 1 and no production controls, a $1 50-per-bushel sudsidy would reduce farmers' net income by over $2 billion per year, CCC net outlays would fall by about $1 1 billion, and consumer expenditures would increase by $171 million per year compared with a continuation of current programs

Establishing a high support price for wheat for food and industrial use and a low support price for wheat for export and other domestic uses may not benefit wheat producers If production controls are eliminated, setting the support price for food and industrial use at $7 per bushel and the support price for export and other domestic uses at $2 50 per bushel could substantially reduce farmers' net income For example, if the export elasticity were 1, net farm income would average $1 9 billion per year lower, CCC net outlays would average $3 6 billion per year lower, whereas consumer expenditures would average nearly $2 2 billion per year higher compared with a continuation of current programs

Finally, a $10/$2 50 two-price program would increase farmers' net income if the export elasticity is greater than 2 CCC net outlays would decline by about $3-4 billion per year compared with a continuation of current programs However, consumer expenditures would increase by about $3 7 billion per year

Past studies generally suggest the elasticity of U S wheat exports is less than 2 Thus, subsidizing U S wheat exports will probably increase wheat producers' incomes only moderately, especially if the cost of supporting farmers' incomes by taxpayers and consumers is not permitted to increase significantly Put more simply, export subsidy programs cannot provide large positive benefits to producers while simultaneously lowering the direct and consumer costs of supporting farmers' incomes In addition, a policy of across-the-board export subsidies would probably cause the United States to lose some of its ability to influence other countries to reduce and eliminate protectionist policies Competitor countries could, of course, retaliate by further expanding their subsidy programs or by reducing imports of U S agricultural and nonagricultural commodities Export subsidy programs should not necessarily be shelved altogether Targeted export subsidies may indeed provide positive benefits to producers as well as lower consumer and taxpayer costs of supporting farmers' incomes if targeted at countries with import demand elasticities above 2 Export subsidies may be necessary to maintain the U S share of the world wheat market and to force major competitors to rethink their export policies

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