small and medium sized commercial farmers to help those farmers achieve a parity of income. We are talking about an income policy for small and medium sized commercial farmers in paragraph. 1 of page 200, not a welfare program as welfare programs are typically construed in the United States.

Question 10. Page 200, paragraphs (1) and (2). These points seem to contradict. In paragraph (1) you say we need technology oriented to small farms; in paragraph (2) you say most technology developed is equally advantageous to any size farm ! Which is correct.

Answer 10. The points noted by your office with respect" to our paper on page 200 are somewhat contradictory. Let me make the following comments with respect to technology and small farms: (1) Biological technologies as they have been developed in the United States over the past 30 years are usually neutral with regard to size of farm; in a technical sense, small farmers can use hybrid seed corn as effectively as large farmers. (2) The development of farm machinery in the United States, in my judgment, has been large-farm oriented and has contributed to the expansion in the size of farms in the United States. It is my view that an effort should be made to induce farm machinery manufacturers to develop machinery which is more adapted to the needs of small farms than existing lines of machinery. In my judgment a great deal could be achieved in the way of developing mechanical equipment oriented toward the needs of small farms and small farmers if we had a policy designed to bring about this development. (3) Small farmers are often in need of technical assistance both with, regard to biological technologies and mechanical technologies to enable them to remain efficient and survive. In the main, we in the United States have failed to provide the extra amount of technical assistance required by small farmers This failure could and should be remedied by the Congress.

Chairman HUMPHREY. Dr. Tweeten, we will hear from you next and then will follow the procedure that the Congressman indicated.

STATEMENT OF LUTHER TWEETEN, PROFESSOR OF AGRICULTURAL ECONOMICS, OKLAHOMA STATE UNIVERSITY, STILL WATER, OKLA.

Dr. TWEETEN. Thank you, Congressman Brown and Senator Humphrey. My presentation is divided into two principal sections; one deals with the future supply-demand prospects for agricultural commodities, and the second deals with policies appropriate to the situation emerging in the next decade.

It has been my good fortune to spend approximately 3 months looking at the long-term outlook for agricultural supply and demand in the world. I have gone to some of the best experts in the various areas to t the latest information available.

I have supplemented this information with my own judgment.

It is very important, in the context of the previous presentations, to separate need from effective demand. In discussing what will happen to U.S. exports, I am talking about effective demand rather than need.

The need for food is vast, but from the standpoint of prices to the domestic consumer and the farmer, it is effective demand that is important. My best estimate of the average increase in effective demand for U.S. farm commodities through 1985 is about 1.5 percent a -year.

My estimates of supply are based on very exhaustive studies of technology in American agriculture. Productivity of agriculture increased at the rate of over 2 percent Per year in the 1950. That has slowed considerably. Productivity, I project, will increase *a* little over 1 percent a year to 1985. Alternate projections are also included. The highest projection, 2.1 percent a year, includes unprecedented technologies that are on the horizon. These include twinning in cattle, bioregulators and photosynthesis enhancement.

The best estimate is that demand will increase faster than productivity will increase supply.

This is good news for #arm income, but bad news for consumers. Unfortunately for farmers, inflation is going to consume gains in prices received so that the ratio of prices received to prices paid is going to hold roughly steady according to best estimates for 1985.

Current dollar net farm income will rise substantially to 1985, but real dollar income, or buying power, will decline.

The two principal problems facing farmers in the next decade are instability and inflation.

My paper deals at considerable length with how to cope with instability. The first priority is to build commodity stocks. Either Government or the private trade can do it. The rise of the consumer as an important participant in national food policy precludes the private trade holding adequate stocks. The risks are too great.

The private trade holds stock when anticipated prices increases will cover their costs. When these price rises are in danger of being truncated by capricious consumer action, the private trade will not hold adequate stocks. So that turns us to the Government.

Current loan rates do not reflect the social value of accumulating stocks.

Chairman HUMPHREY. I was at the Committee on Agriculture and Forestry hearing this morning talking to Mr. Knebel, the newly appointed Under Secretary of Agriculture, on this very point.

Dr. TWEETEN. Senator Humphrey, if current loan rates continue, the Nation may dissipate the opportunity to accumulate stocks. Potential stocks will instead be exported, fed to livestock, or not be produced because of cutbacks by farmers to low prices. My suggestion is that loan rates be raised at least to nonland cost of production.

Farmers now are opposed to participation in this program. They properly see that in the past high stocks were associated with low prices. Some inducement is needed to get the farmer to go along. I suggest that we encourage the farmer to store commodities paying him 25 to 35 cents a bushel per year to store grain. As a condition for payment, the farmer would agree not to release those stocks at less than 150 percent of the loan rate.

This procedure would require the private trade to carry working stocks because farmer held stocks receiving payment would not be released until price gets to 150 percent of the loan rate. Private storage would hold down Government cost.

Once stocks accumulate to optimal levels, which I place at about 45 million tons of feed grain, 600 million bushels of wheat, and 150 million bushels of soybeans, then farmers would not receive payment for additional stocks. If they wanted to hold them, that is fine.

Once stocks reach desirable levels (here I refer to desirable stocks on the average for a period of years; stocks might be higher or lower in some years), then I suggest forsaking production controls. Controls are increasingly less tolerable in an atmosphere where the consumer is a rising influence in farm policy, where we realize that production controls have not been very effective in the past and have been very extensive.

The market price might be allowed to fall without any overt effort on the part of the Government to accumulate additional stocks. A

direct payment be made to farmers equal to the shortfall of the market price below the nonland cost of reduction support rata.

A payment limitation would restrain growth of large corporate type farms and would preserve family-sized farms.

Furthermore, I would make this direct payment on normal yields times 80 percent of acreage allotment tied to 1973-75 acreage. The old allotment system is obsolete.

The farmer receives the market price for his additional output. This would have a strong restraining influence on output. The overall plan gives farmers flexibility to make proper adjustments in how much output to produce; and at the same time provies for adequate stocks. The plan can promote stability for consumers as well as for farmers.

Inflation has often been overlooked as a very serious problem for farmers. Inflation has been masked in recent years because the farming industry has experienced a very favorable demand for output. Undesirable effects of inflation will become more apparent in the years to come.

How do we protect farmers against this?

In the paper which you perhaps have before you, one of the suggestions I have is that we institute a wage supplement.

Chairman HUMPHREY.. I saw your proposal.

Dr. TWEETEN. I think some of you are familiar with that concept.

In the interest of brevity I will not go into it in detail unless people have questions about it.

Thank you very much.

Chairman HUMPHREY. Thank you.

Let me pose a general question. I am chairman of the Foreign Agriculture Subcommittee, chairman of the Foreign Assistance and International Economic Policy Subcommittee of Foreign Relations Committee, and chairman of the Joint Economic Committee. All my activities are in this field.

I want to ask you gentlemen if you would be willing to make yourselves available for presentations to these other subcommittees and especially the Joint Economic Committee,

I say the latter because I think, Dr. Cochrane, you were right that our planning bill did not give the specific emphasis that might be necessary for agriculture.

I held Joint Economic Committee hearings for the first time since 1957 in which any person with agricultural expertise appeared

In addition, the Senate Committee on Agriculture and Forestry does not in any way tune itself in to what is happening in the rest of the economy. I listened to what you said regarding the rising power of the consumer. We are attemptmg to stonewall that, you see, as if you could prevent it. It is like old King Knute holding back the tides. Temporarily? you are able to do it, off and on, by bringing together certain coalitions in the Congress. But the long term is another issue. I do not know how to explain it to you except to say that if you look around this room, there are some very interesting people here. But the press table is empty.

Now, why do I tell you that? Unless there is an investigation of the grain shipment or export scandal, there is no press. Seldom any media. I can tell you I have been on the committee for 18 years. The only time we have any media coverage is when we have a first-class knockdown dragout fight with the Secretary of Agriculture.

Yet, I think it is fair to say that what you gentlemen have been discussing is more basic to the long-term economic well being of the United States and the world than the oil crisis. People can get along with less oil, but there is no substitute for food. Yet this is a subject matter that only is peripheral in terms of its national interest. When an issue is internationalized then you attract some media attention.

You hear about farm prices, but no one hears about inflation as it affects the farmer.

We had before the Joint Economic Committee every one of the pub. lic opinion institutes of this country. We use them regularly: Cadell, Hart, Roper, Gallup, Harris, Michigan, public opinion surveys. They found that people identify inflation as the following:

No. 1, food prices; No. 2, fuel; No. 3, rent; and No. 4, interest.

Inflation was identified as food 68 percent—running between 65 and 72 percent—of the time in every survey. In other words, as far as Mr. and Mrs. America are concerned, inflation is the price that they pay in the supermarket.

You can raise the rice of a quart of milk a penny, and you will have a veritable revolution. You can raise the price of a glass **of** beer a nickel and no one notices.

The only thing people complain about is whether Coors is as good as Olympia, Hamms, or Budweiser.

Dr. Tweeten?

Dr. ***Tweeten.*** Looking at parity ratio, the figure for November 1973, based on 1910-14 equal to 100. That is below the same parity ratio in the 1960's and early 1970's, and still I think a lot of consumers are saying, "Aren't food prices high because farmers are getting too much ?"

Chairman HUMPHREY. No doubt about it.

And concern about food prices is the same in Minnesota. Even though agriculture is the industry in my State, you would never know it by reading the local paper.

Mr. Soth. You should read the Des Moines Register.

Chairman HUMPHREY. I know it.

May I say I wish we had it. I say this respectfully, because I happen to think we have a good newspaper, but the emphasis is not the same. If 5,000 people were laid off at Honeywell in Minneapolis-St. Paul, every economist at the university, every preacher, every social worker, every do-gooder, every liberal, would be up in arms saying something has got to be done about it. But we've lost 5,200 diary farmers in the last ***2 years*** and no one said anything. These farmers not only lost their jobs, but they lost their assets, too.

[The following paper was requested by OTA from Dr. Tweeten:]

FORMULATING A NATIONAL FOOD POLICY FOR THE NEXT DECADE

(By Luther Tweeten)*

Formulating a national food policy for the next decade requires an understanding of (1) the setting including trends in supply, demand, prices and incomes and (2) alternative policies to deal with emerging problems consistent with the interests of farmers, taxpayers and consumers at home and abroad.

*Regents Professor, Department of Agricultural Economics, Oklahoma State University, Stillwater. Professional Paper P-248 of the Oklahoma Agricultural Experiment Station, prepared *for the* Office of Technology Assessment. Comments *of* Daryll Ray, Milton Ericksen and Walter Wilcox were very helpful. The author retains sole responsibility for shortcomings of this paper.

This paper begins with economic projections of the farming economy to 1985. The paper then examines policies, institutions and data requirement to cope with emerging, circumstances.

THE ECONOMIC SETTING TO 1985

Scenarios define the conditions under which supply, demand, prices, costs, receipts and net farm income are projected to 1985. The scenarios depict the range of conditions judged most probable. It is cautioned that the projections do not encompass transitory shocks such as annual variation in grain purchases for export to the Soviet Union, weather, commodity stock adjustments and other factors which will bear heavily on short-run conditions but not on long-run trends. Critical components discussed below of the scenarios are demand shifters (population, income and exports) and supply shifters (productivit, inflation)

Supply

Supply cab be expressed with two principal parameters: shifters and price elasticites. The SIMPASS agricultutal projections system devised by Quance and Tweeten (1972) and improved by Chung J. Yeh of the Economic Research Service performed well in predicting the 1967-74 period with aggregate supply elasticities of .2 in the short-run (l-2 years) and 1.0 in the long run (many (years). These parameters are consistent with past econometric estimates (Tweeten en) Qquance, 1958), adjusted for the increasing short-run elasticity caused by rising propoertions of price responsive inputs such as fertilizer and falling proportions of price-unresponsive inputs such as operator and family labor. The supply curve is shifted leftward by inflation and rightward by technology through greater productivity of arming resources.

Productivity.— The productivity index is *the ratio* of aggregate output of the farming industry to aggregate production inputs. The most recent and comprehensive analysis of agricultural productivity response to research (R) and extension (E) outlays was, performed by Lu and Cline (1975]. Additional agricultural extension and research outlays raise the amount of farm output available from any given amount of far production inputs. Effects of increasing R and E are not immediately apparent but are spread over many years. The farm outputs from public R and E outlays in any given year reach a peak at 6 years and decline to near zero in 13 years because of obsolescence of technol***ogy-an*** effect often ignored in payoffs ***from*** such outlays. Depreciation ***or*** obsolescence sets in as new crop varieties become vulnerable to damage from pests, as insects become immune to pesticides and as new technologies make old technologies obsolete. This means that substantial R and E maintenance outlays are necessary just to keep farm productivity from falling. An additional dollar spent on production-oriented R and E raises agricultural output approximately $4.30. Since the increments In output are. distributed over time, they must be discounted to exrpess them in present value. The present value of a one dollar investment in R and E expenditures for a 10 percent discount rate ***was*** found by Lu and Cline to be $2.21.

The internal rate of return is that discount rate which equates the stream of the future marginal products with the initial investment of one dollar. The internal rate of return shows the highest interest rate that coul d be paid on investment in public R and E to just break even on the investment. The internal rate of return based on national data from 1939 to 1972 is approximately 26.5 percent. This rate has declined over time: it was 30.5 percent from 1939 to ,1948, 27.5 percent from 1949 to 1958, 25.5 percent from 1959 to 1969 and 23.5 percent from 1969 to 1972. The rate of return in the most recent period remains substantially above returns on the average of alternative public and private investments and public R and E contributes to a more equitable distribution of income (Tweeten, 1973). Strong justification can be made for increasing investment in R and E.

A one percent increase in R and E will, over its lifetime, bring about a .037 percent increase in productivity. The increase is small despite highly favorable rates of return because public R and E comprises less than 2 percent of all farm inputs. Using estimates from Lu and Cline, three alternative levels of R and E expenditures and resulting changes in productivity for the 1975-85 period are considered in this study:

T.: Maintain a zero rate of growth in R and E expenditures, holding real outlays for extension and public research at the 1974 dollar value—incre-

ments in dollar outlays only keep up with inflation. This leads to a 1.10 percent annual growth in productivity of conventional farming inputs for 1975-85.

T_3: Continue the observed rate of real growth in R and E during the 1939-72 period, 3 percent per year. This leads to a 1.14 percent annual growth in farming productivity in the 1975-85 period.

T_4: Continue the average rate of real growth in R and E ***during*** the M144-50 period, 7 percent per year; also include productivity gains from unprecedented technologies. This leads to a 1.21 percent annual growth in farming productivity in the 1975-85 period.

The above percentage rates refer to real (constant) dollar increments from a 1974 base. If inflation averages 4 percent per year, then the current dollar increments for the respective alternatives are T_0, 4 percent; T_3 7 percent and T_{7+} 11 percent. Unprecedented technologies include breakthroughs which are likely to occur at specific times as judged by agricultural scientists but are not included in conventional productivity indices. Technology index T_{7+} includes effects of three such technologies: Twinning in cattle, bioregulators, and photosyntheses enhancement. Other practices such as minimum tillage are not explicitly included but also offer potential for greater output from a given dollar volume of production resources. Emerging unprecedented technologies are judged to be most widely used with greater R and E outlays, hence their impact is only included with annual real increments on R and E outlays of 7 percent, the highest rate used in this analysis.

As indicated above, the estimated annual average increases in productivity range from 1.10 for T_0 to 1.21 for T_{7+} fro-m 1975 to 1985. Historical annual increases in productivity averaged 2.33 percent from 1950-59, .92 percent 1960-69 and 1.19 percent from 1963-72. Historical productivity indices vary widely from year to year because of weather. Weather also influences the long-run productivity trend to the extent that weather cycles influence domestic farm production. No provision for weather cycles is made in productivity projections herein. This is not to deny existence of weather cycles, but rather to recognize that these cycles cannot be predicted with sufficient reliability to include in productivity projections.

Inflation.- Inflation in the national economy can be gauged by alternative measures including the ***Consumer*** Price Index, the Wholesale Price Index and the implicit price deflator of the Gross National Product. The latter is the most comprehensive in coverage of goods and services and historically has increased at a rate similar to that of prices paid by farmers, including interest, taxes and wage rates. From 1960 to 1969 both indexes increased by 24 percent. From 1972 to 1974, however, prices paid by farmers increased 32 percent while general prices increased 18 percent. Tire more rapid increase in prices paid by farmers is in part attributed to high energy prices, which carry,a larger weight in farm input prices that in general prices, and by the interfarm sales component of prices paid by farners, which increased in price commensurate with the rapid gain in prices received by farmers for crops and livestock. In the future the rate of gain in farm prices paid is expected to return to the historic pattern in relation to the rate of national inflation. In the empirical analysis, three alternative inflation rates are examined: I_0 a benchmark of zero annual inflation; I_4 the standard case of 4 percent annual inflation; and I_8 an 8 percent:annual inflation rate in prices paid to farmers.

The latter rate is considerably higher than the rate prior to the 1970's but lower than rates experienced in the 1970's by farmers. Inflation in prices paid by farmers influences prices received by farmers in the empirical analysis in conformity with the theory outlined elsewhere (Tweeten, 1975c).

Demand

The projected demand for farm output is expressed by price elasticities and by three demand shifters: exports, population and per capita real disposable personal income. Based on previous econometric studies, and ability to predict historically the 1967-74 period, the price elasticity of aggregate demand was selected to be -.15 in the short run and -.21 in the long run.

Population.— U.S. population growth rates are series I, II and III projections from the Bureau of the Census. With population increasing at the rate of .85 percent annnally from 1970-74 and by .7 percent in 1974 and in light of falling birth rates, series III with growth rates of .68 percent from 1975 to 1985 was selected as the standard case (Table 7). Alternative rates are also used because

trends in birth rates cannot be accurately anticipated as evident by past projections. Accordingly, three projections are included in Table 1 to allow for possible changes in birth rates, migration and other factors that influence domestic population growth.

TABLE L-PROJECTED ANNUAL PERCENTAGE INCREASES IN FARM OUTPUT DEMAND, WITH ALTERNATIVE IN. CREASESIN DOMESTIC POPULATION, PERSONAL PER CAPITA REAL INCOME, AND AGRICULTURAL EXPORTS , UNITED STATES, 1975-85

Exports [2]	Population,* years 1975-85		
	I (1.20)	II (0.92)	III (0.68)
High income [3]	(3.0)	(3.2)	(3.3)
(2.7)	1.80	1.58	1.46
(3.5)	1.94	1.73	1.55
(4.4)	2.10	1.88	1.70
(6.0)	2.37	2.15	1.97
Medium income	(2.5)	(2.5)	(2.7)
(2.7)	1.72	1.51	1.33
(3.5)	1.87	1.66	1.47
(4.4)	2.02	1.81	1.63
(6.0)	2.29	2.08	1.90
Low income	(1.8)	(1.9)	(2.0)
(2.7)	1.68	1.43	1.25
(3.5)	1.81	1.58	1.40
(4.4)	1.96	1.73	1.55
(6.0)	2.23	2.00	1.82

[1] Roman numerals refer to Bureau of Census population series, with annual percentage rates in parentheses.
[2] Annual percentage growth in exports shown in parentheses below.
[3] Annual percentage growth in per capita income shown in parentheses below.

Source: See text. For further information see Economic Research Service, working materials No. CY. 1.75 entitled "United States Production Capacity Preliminary Projections to 1985."

Exports.—Agricultural export growth has been highly volatile in the past, and is hazardous to predict in the future. The three lower rates of future agricultural export growth were obtained from the Foreign Demand and Competition Division of the Economic Research Service (Table 1). Expressed as a percentage of the 1967 export volume, the actual quantity index of exports was 111 in 1970, 129 in 1972, 166 in 1973 and 155 in 1974. Under the alternative with 4.4 percent rate of growth from 1975 to 1985, the quantity of exports was projected to be 156 in 1975 and 206 in 1980. Under the 3.5 percent rate of growth alternative exports were projected to be 167 in 1980, only slightly above the 1974 level. The projections of 3.5 to 4.4 percent annual growth from 1975 to 1984 appear reasonable in light of present knowledge, but exports could increase at a faster rate. Exports increased on the average by 6 percent per year from 1967–74, with a large portion of the increase in 1973. While gains of the 1973 magnitude are rare, I inserted a faster growth rate of 6 percent for 1975–85 to account for possible repetition of the 1967–74 experience.[1]

Income.—The two highest estimates of projected increases in per capita disposable personal income were computed from unpublished data supplied by Resources for the Future. Rates of 3.3 and 2.7 percent for 1975–85 under population series III appear to be too high in light of the 2.4 per cent annual gain from 1967–74 and decline in real income from mid-1973 to mid-1975. Higher energy prices may restrain economic growth for an extended period. Consequently, I included lower growth rates in income as a third alternative, with real disposable personal income growing from 1.8 to 2.0 percent per year. Income growth estimates were unique to each population series because income and population interact—lower per capita gains in income are associated with high population growth. However, total national product is greater with higher rates of population growth because population increments are not entirely offset by per capita income losses.

The income elasticity of demand for food and fiber output at the farm level was considered to be .14 for 1975–85.

The 36 possible annual shifts in demand in Table 1 were too numerous to simulate separately and only three rates of growth in demand were considered.

[1] It is cautioned that these export projections do not measure the *need* for U.S. farm products abroad. Rather, the estimates reflect projected *effective demand* for U.S. farm products abroad, which depends, among other things, on ability to pay for U.S. farm products out of funds gained from international exports and aid credits.

It is noted that several combinations of export, income and population alternatives project the same shift in total demand for farm output. The very highest rates of growth in income and population seem unlikely to occur. Excluding the highest growth rates in income and population and thereby temporarily confining alternatives to 16 demand growth rates for 1875-85, the highest rate of growth *in* demand is 2.1 percent and the lowest rate is 1.2 percent. These rates coupled with a standard case estimate of 1.5 percent (which conforms with standard case export growth of 3.5 percent population growth of .68 percent and per capita real disposable personal income growth of 2.7 percent) constitute the three alternatives simulated and are designated as $D_{2.1}$, $D_{1.5}$ and $D_{1.2}$. It is apparent that these shift correspond to several combinations of components. For example, $D_{1.5}$ with a 1.5 percent annual growth in demand can result from population series II, medium income, and 2.7 export growth; or from population series III, low income, and 4.4 percent export growth. Demand growth $D_{2.1}$ can result from population series I, high income and 4.4 export growth; or *from* population series 11, high or medium income, and 6 percent export growth in the 1975-85 period.

SIMPASS System

The SIMPASS system as modified by Jung J. Yeh projected annually from 1975 to 1985 the farming industry economic outcomes including prices received by farmers, the' ratio of prices received to prices paid by farmers, gross receipts, expenses, net income and output. Parameters were initially selected for the system for the previous econometric studies, then finally selected based on the values of parameters which predicted most reliably the 1967-74 historic period.

Equilibrium

Economic outcomes under various scenarios were projected for each year from 1975 to 1986 in the absence of production controls or price and income supports by government. To save space' and because annual changes were along a fairly uniform trend, only values for 1980 and 1985 are shown (Table 2). Although prices received by *farmers* are projected to be 264 percent of the 1967 average in 1985 in the standard case (1.5 percent demand growth $D_{1.5}$. 3 percent growth in R and E outlays T_3, and 4 percent inflation T_4), the terms of trade for farmers as measured by the price ratio (prices received divided by prices paid) trends slightly downward because of inflation in prices paid. Current or nominal income measured in dollars of the future years shown in Table 2 *trends* upward, but real income trends slightly downward in the standard case.

Recognizing the possible errors in the projections, the most, realistic interpretation is that farm economic health will be very similar to that in 1967 on the average to 19$5 under the standard case scenario. But results 'could be quite different if other scenarios become reality.

TABLE 2.–PROJECTED, ECONOMIC OUTCOMES FOR EQUILIBRIUM UNDER A FREE MARKET, UNITED STATES, 1980 AND 1985

Scenario	1980				1985			
	Price ratio 1967 equal 100	Prices received 1967 equal 100	Net farm income (billions)		Price [1] ratio 1967 equal 100	Prices received 1967 equal 100	Net farm income (billions)	
			Current	Constant [2]			Current	Constant [2]
Standard case: $D_{1.5}$ T_3 I_4..	104	224	$24.2	$19.1	101	264	$26.9	$17.4
Productivity:								
High $D_{1.5}$ T_3 I_4	103	222	23.7	18.7	99	259	25.0	16.2
Low $D_{1.5}$ T_3 I_4	104	224	24.4	19.3	101	266	27.6	17.9
Inflation:								
High $D_{1.5}$ T_3 I_{13}	98	261	22.2	14.0	92	357	22.6	9.7
Low $D_{1.5}$ T_3 I_0	110	190	25.2	25.2	110	192	27.7	27.7
Demand:								
High $D_{2.1}$ T_3 I_4	108	235	29.9	23.6	108	287	38.6	25.1
Low $D_{1.2}$ T_3 I_4	101	218	21.5	17.0	97	253	21.9	14.2

[1] Ratio of index of prices received by farmers for crops and livestock divided by index of prices paid by farmers for production items, including interest, taxes and wage rates.
[2] 1974 dollars.

Source: See text.

Note: Preliminary actual 1974 values for the vice ratio was 106, for prices received was 183 and net farm income was $27,000,000,00 .

It is of interest that results change little with alternative rates of increase in outlays for research and extension. Farm income and price ratios are less favorable with greater investments, indicating once again that such outlays benefit consumers rather than farmers. Although R and E outlays have favorable rates of return and are a major economic benefit to consumers, they are not very effective in changing productivity rates for various reasons. As stated earlier, they comprise a small portion of all farm inputs and a change in volume is dwarfed by the effects of price changes on conventional inputs. Also, considerable time lapses before R and E inputs are reflected in farm output. A 25 percent increase in R and E inputs increases farm output only 1 percent over its lifetime. A 25 percent increase in the ratio of prices received to prices paid by farmers increases output 5 percent in 2 years and by 25 percent in the long run.

With no inflation (T_0), the ratio of prices received to prices, paid by farmers could be considerably higher by 1985 than in 1967, 1974 or 1980. Continued high inflation seriously threatens income of the farming economy, but does not seriously undermine ability of farmers to produce enough to meet food needs at home and abroad.

The high rate of growth in demand of 2.1 percent annually can result in a price ratio and real net farm income at nearly the same level in 1985 as in 1974. Such a rapid growth in demand seems unlikely, however. On the other hand a slow growth in demand of 1.2 percent annually could lead to chronically depressed farm prices and net farm income. And a combination (not shown in Table 2) of rapid growth in productivity, high inflation and slow growth in demand would create very serious economic problems for farmers which in turn would lead to powerful pressures for government intervention or perhaps to farmer bargaining power.

Results in Table 2 provide no evidence whatsoever that the ability of American agriculture to meet demands placed upon it will be seriously threatened. No evidence points to chronic shortages or suggests that an increasing proportion of income will have to be devoted to purchase of farm food ingredients by American consumers.

OPTIONS FOR COPING WITH ECONOMIC INSTABILITY

Projections to 1985 revealed no strong upward or downward trend in farm real prices and incomes for the foreseeable future. The overriding issue facing farmers and consumers is economic instability caused by variation in weather at home and abroad. Major means to reduce instability include commodity stock reserves, export and import controls, production controls and direct payments.

Commodity *Stock Reserves*

Establishing a commodity reserve program is the number one priority in establishing a national food policy. In the absence of reserves, farmers could receive stable prices and incomes by transfer payments from nonfarmers, consumers could receive stable prices by restricting exports, or foreign customers could receive stable supplies if domestic consumers reacted to widely "fluctuating prices by tailoring their food use to absorb all the adjustments in farm output. But more stable total supplies from year to year made possible by adequate reserves can avoid reliance on these distasteful alternatives.

Current farm' legislation will not provide adequate public or private ***reserves.*** Emergence of consumer interests as a powerful and capricious force in national food policy has preempted reliance on the private trade to hold adequate stocks—the risks are too great. The private trade holds stocks when anticipated price gains more than offset storage costs, including a charge for risk. Fear that government action will truncate price rises injects uncertainty that leads to excessive private discount rates and to private stocks far below socially optimal levels.[2] Inability of the private trade to obtain capital and assume risks of holding stocks large enough to meet the requirements of a national food policy calls for public involvement.

We know much about an economically efficient stock program. Research suggests that carryovers of approximately 600 million bushels of wheat, 45 million tons of feed grains, and 150 million bushels of soybeans are optimal on the average. Stocks below these levels result in considerable price instability. Although reserves of the above amounts or greater create stability in commodity prices, the prices are considerably below current levels and are unpalatable to farmers (see Tweeten, 1974b).

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2 An economically efficient program is one that maximizes the benefits less costs to society, with the private discount rate equal to the social discount rate at the margin:

In addition to optimal carryover levels, research suggests guidelines for release and acquisition of stocks. The optimal reserve management rule devised by Tweeten, et al. (1971) was to change stocks by the formula .85 (Q-Q*). That is, 85 percent of production Q in excess of equilibrium Q* would be stored, and stocks would be released (if available) equal to 85 percent of the shortfall of production below equilibrium. The percentage can be changed to as low as 70 without much loss in efficiency. A similar optimal formula was devised by Richard Just (1975), but with price rather than quantity the decision variable, i.e. the change in stock is given by the formula k (P*-P) where P* is equilibrium price and k is a constant which Just did not estimate. The change in storage stocks from year to year is some proportion of the difference between the actual market price and the equilibrium price. Expressing P in cents per bushel and Q in million bushels of wheat production in a linear demand function for wheat, and substituting Q into Just's formula, then the change in wheat stock is expressed simply as 2(P*-P). If equilibrium wheat price is 300 cents per bushel and the market price is 200 cents per bushel, then 200 million bushels would be taken off the market and placed in storage. If the price were 400, then 200 million bushels would be taken out of storage (if available) and placed on the market.

These rules may be economically optimal but politically inexpedient. Our research indicates that other guidelines such as acquisition and release of stocks when prices achieve respective low and high thresholds generate social benefits from price stabilization that are nearly as favorable as the optimal rule (Tweeten, et al., 1971). In part, this robustness of storage outcomes to storage rules is an outgrowth of increased private stock operations as government stock rules allow wider price fluctuations before intervention. The intervention prices must, ***of*** course, include the intermediate to long-run equilibrium price within the interval. Thus a fairly operational. rule is for the government to purchase stocks when prices fall 25 percent below equilibrium and sell stocks when prices rise 50 percent ***above*** equilibrium.

The socially optimal average carryover for the U.S. (nearly 60 million tons of all grains) appears not only to be consistent with the U.S. market but also with world contingency reserve needs. It requires fewer resources to maintain a single reserve system to accomplish the dual goals of stabilizing prices and responding to world emergency food needs than to have separate reserves for each goal. Rather than have a special grain reserve (a suggested level is 12 million tons, but more recent pronouncements go up to 60 million tons) solely for world emergency needs, it would be less expensive to accomplish the same objective by allowing countries experiencing acute food shortages to receive development dollar credits which could be used to purchase food wherever such food could be acquired at least cost. Commodity stocks are most efficiently stored in countries where they are produced rather than in potential food-short areas, but this idea is difficult to "sell" potential food-short countries. I am pessimistic about the ability of nations to agree on an adequate world food reserve policy, and feel that humanitarian considerations compel the U.S. to establish on its own a reserve policy capable of responding to emergency world food needs-at least until an international system is devised.

Farmers have observed correctly that small stocks have been associated with high, if unstable, commodity prices They oppose accumulation of reserves by the Commodity Credit Corporation because commodity prices would be low, although ***more*** stable.[3] To overcome farmers' opposition to reserves, a national food reserve policy must contain features attractive to farmers. One proposal is that stocks be held by farmers provided economic incentives by the government to acquire, hold and release stocks ***in*** the public interest. Notable legislation to implement this proposal is authored by Senator Henry Bellmen (Senate bill S 2275).

Senator Bellmen's proposed legislation gives producers an option whether to participate in the set-aside program or a stock program. If the producer elects the latter, he is authorized a nonrecourse loan equal to 80 percent of the cost of production, including land cost. The loan is for 5 years and is repaid with interest when the grain is sold. The grain can not be sold until the market price exceeds 150 percent of the loan, and the Secretary of Agriculture has the option of requiring loans to be paid off when the price of grain reaches

3 This statement applies to grain farmers but not necessarily to livestock producers. Stable grain prices are of benefit to livestock producers and reduce livestock price variability. Specialized livestock feeders can adjust to consistently low or consistently high feed prices, but it is difficult for them to remain economically viable with highly variable grain prices.

200 percent of the loan. Thus the farmer's selling option is essentially in the range of 150 to 200 percent of the loan rate. To illustrate with an example, if wheat production cost Is $3.06 per bushel, the loan rate is $2.45. The farmer has the option to hold the grain or to sell the grain and repay the loan with interest when the market price is between $3.67 and $4.90 per bushel. The loan is called when the price exceeds $4.90.

Other approaches can induce farmers to hold appropriate levels of storage stocks. One proposal is for the government to exempt farmers from payment of interest on the nonrecourse loan if farmers sell grain when the price is between 150 and 200 percent of the loan rate. Farmers would pay storage costs other than interest on the commodity. Another proposal is for the government to offer no nonrecourse loan but to pay farmers 25-35 cents per bushel to defray interest and storage costs up to 60 million tons of all grains. No storage payment would be made on stocks in excess of 60 million tons. Farmers would be free to acquire stocks as they see fit, but could release stocks only when the market price exceeded 150 percent of the support price. Because the grain industry requires working stocks which would not be readily accessible, the private trade would carry a significant amount of stocks. Payments for holding stocks would be terminated when market prices exceeded 150 percent of the support rate but would be reinstated when prices return to 150 percent of the support rate. If stocks failed to average. desired levels over a period of "normal" years, incentives would be raised or lowered as necessary. The storage incentive rates indicated above are only illustrative. The important principle is the use of government, payments to reduce private costs of storage to the level of retail social costs by compensating farmers (or others) for storage.

A third alternative is to establish a schedule of loan rates, with higher loan rates associated with lower reserves. The schedule would also include release rates, with higher release prices associated with smaller reserves. Farmers who stored grain would be exempt from interest charges (or would receive a storage incentive fee) if they sold grain in conformity with the release schedule, but would be required to reimburse the government for all interest charges if they elected to hold for higher prices. Direct payments or production controls would be used to maintain farm prices and incomes if stocks reached excessive levels.

Export controls

Opportunities for importers of American farm products to go elsewhere for supplies, the central importance of maintaining access to world markets to earn reserves to purchase petroleum and other products, fear of reciprocal trade barriers and other reasons have for the most part deterred demands for export controls.[4]

The Soviet Union has been in large part responsible for variation in U.S. exports and we feel much less obligated to assure supplies to them than to regular customers in Japan and Western Europe. But effectiveness of export controls or agreement with the Soviets should not be overestimated and viewed as a substitute for other measures to promote stability. In years of short Soviet supplies, their import needs in excess of what the U.S. is willing to supply can be purchased in Western Europe, (Canada, Australia, or Argentina. Customers normally purchasing from these countries but facing no U.S. embargoes or agreements can switch purchases to us. Or the Soviets can purchase soybeans, grain sorghum, barley and oats rather than embargoed wheat and corn. In years of abundant Soviet supplies, their commitment to buy 6 million tons of grains annually can be circumvented by their selling of domestically grown wheat to other countries. Possibilities for deferred delivery and other means also reduce the effectiveness of grain agreements to stabilize markets. Furthermore, because many farmers feel that commitments by the U.S.S.R. to purchase 6-8 million tons represent an export maximum in "the minds of U.S. officials, export controls or agreements cannot be viewed as a permanent instrument to stabilize markets by a nation committed to open trade channels and dependent on" access to world markets.

One way to remove the highly destabilizing impact of foreign markets on U.S. commodity prices is to restrict total exports, not just those to the U.S.S.R. and Poland. And the stabilization can be most effective if carried out in concert with other major exporters. Such policies, although potentially highly effective in

4 Attempts to obtain supplies elsewhere effects long-run as well as short-run markets. For example, stimulation of soybean production in Brazil by the Japanese undermines American soybean market outlets for many years.

removing export instability, can also raise export revenues from farm commodity sales.

In the past, some economists in the Economic Research Service have contended that the export demand far U.S. farm products is price inelastic. If this contention were correct, the U.S. could raise farm export earnings by unilaterally restricting exports. My estimates reveal an elastic demand for agricultural exports except in the very short run. Thus export revenue is lost by unilateral export controls but revenue is increased at least slightly if the U.S. restricts exports in concert with other exporters.[5]

Comprehensive, effective export control entails substantial costs. It would require either a single public grain board to replace current private export firms or powerful controls over private firms that would make such firms essentially an arm of the state. Whether the current grain export system comprised largely of private, mostly multinational, firms should be replaced by a single public corporation is an open question. While it is true that single state co orations predominate in major grain exporting countries, the advantages over reliance on private firms is not clear. A single public corporation would have served the U.S. better in the seriously mismanaged sale to the soviets in 1972. On the other hand, the Canadian Wheat Board missed the market in 1974-75. It held wheat anticipating exhaustion of U.S. supplies, only to face later a much depressed market price while holding substantial stocks. Under any circumstances, it is essential that the federal government monitor export sales, requiring prior approval for sizable sales. In my judgment, a national food policy with an adequate commodity reserve program can provide adequate stability without export controls. In other words, the cost of export controls (in foregone sales, ill-will, etc.) exceeds potential gains in the form of domestic price stability. But if export controls are to be used, the conditions under which they will go into effect should be carefully defined and advertised so that all participants in national food policy know the rules of the game in advance.

Production Controls

Production controls can enhance stability by reducing output and increasing prices and farm incomes in times of excess supplies and by increasing output and dampening prices and farm incomes in times of excess demand. Past programs have demonstrated that voluntary production control programs can in fact restrain output, provide a highly useful reserve of resources and serve secondary objectives such as conserving the soil and encouraging farmers to do what a more nearly perfect market would do (convert farmland to grass or trees, encourage alternative uses for farm labor, etc.) in times of excess Supplie.[6] If administered properly, production controls such as the set-aside program can maintain farm income, and can provide an intermediate-run reserve to back up short-run commodity stock reserves.

The shortcomings of production controls are many and accumulating. It is well to review them:

1. Ericksen and Ray (1975) state that ". . . land withdrawal may not be an acceptable remedy [for low farm income] since other parts of the world may still face shortages. The U.S. could face strong adverse world opinion if production were curtailed to support prices and farm income."

2. The balance of power in food policy has tilted toward consumers, and faced with the option of low-cost food or production controls, they can be expected to favor lower food costs.

3. Diverted acres were not very productive. At best, 2 out of 3 diverted acres return to production and those that return are no more than three-fourths as pro-

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[5] The elasticity of demand for grains is approximately —1.5 except for the short run, indicating that a 1 percent restriction on exports raises export prices .67 percent but lowers export receipts (1 + .67(−1.5)) = .33 percent. Since the foreign demand and supply elasticities are of somewhat comparable absolute magnitudes the foreign demand elasticity can be multiplied by the ratio of feeding grain production plus consumption to exports to determine the export elasticity for one country or a cartel of several countries. This is 10 is approximately 21 for the U.S. and is 13 for a cartel composed of the U.S., Canada, Australia and Argentina. The cartel price elasticity of export demand is approximately 13/21 times —1.5, or —.93. Thus a 1 percent restriction on grain exports by the cartel would raise prices 1.1 percent and would raise receipts by 1 +1/ — .93 = .1 percent. The conclusion is that grain export earnings will be lowered by export restraint by the U.S. acting alone but will be raised by a cohesive export cartel which restricts grain exports in concert.

[6] Although in theory long-term whole farm retirement of marginal cropland is most cost-effective in removing production per Treasury dollar spent on the program, an Oklahoma study (Carr and Twee Jen, 1974) revealed comparatively little difference among programs in Treasury costs to divert a given volume of farm output.

ductive as average cropland ; combining these two effects suggests diverted acres were only half as productive as average land in production. Although nearly one-fifth of cropland acres were diverted several years, this constituted a comparatively small reserve capacity of no more than 5 percent of farm output. Diverted land has little value for use other than farm production, and hence is virtually costless in real terms for producing farm output.

4, Reserve capacity is much greater from response to price than from bringing in diverted acres. The short-run price elasticity of aggregate supply of farm output appears to be approximately .2 for the 1967-74 period compared to .1 in earlier years. This suggests that the potential to respond to price doubled. A 25 percent increase in farm prices can generate as much production capacity in approximately 1 year as release of 60 million diverted acres. Alternatively, a 5 percent increase in prices received by farmers sustained for several years can generate 5 percent additional capacity.

5. In part because land now accounts for only about 15 percent of farm output and fertilizers and other purchased inputs are good substitutes for land, it is becoming increasingly difficult to control production by restricting the use of land.

6. Allotments are now obsolete, inequitable and an inadequate foundation for administering farm programs (see Schnittker, 1975).' Conserving bases have been eliminated in many states and allotments are inequitable within as well as among states. Farmers who responded to demands for greater output in 1973-75 by investing in land clearing, drainage, irrigation or other means to expand crop acreage do not wish to be penalized by a return to obsolete allotments used to distribute benefits of future government programs.

Direct payment programs have been criticized because they provide more funds to large than to small farms. This criticism may be much more applicable to set-aside programs, since, if production is to be controlled, large farms must be included to avoid diverting large portions of small farms. A direct payment program properly administered with payment limitations could maintain a family farm structure while providing disincentives to huge, industrial-type corporate farms. In combination with a commodity reserve program providing short-term price and supply stability, a direct payment program could give farmers "insurance" against economic and natural disaster at lower real cost than other types of programs.

Farm Price Supports

Price supports can serve objectives of equity and efficiency. By assuring farmers of at least a minimum return if things do not work out as anticipated, price supports can provide forward pricing that enables farmers to plan and produce more efficiently and provide any given output with fewer resources. Many economists agree that price supports can contribute to efficiency, but caution against the dangers of supporting prices above the long-term equilibrium (70-75 percent of 1910-14 equilibrium on the average according to Table 2). Higher prices escalate land prices, generate surplus output or entail high Treasury costs for production controls, support payments and storage of excessive reserves.

In July 1975, target prices were 45 percent of parity for wheat and corn while loan rates were 30 percent of parity for wheat and 36 percent of parity for corn. ' A considerable amount of production is not revered by target prices. Farm income would be cut in half compared to 1973 if prices fell to loan levels and would be inadequate to avoid a major financial disaster-eliminating many young, efficient farmers who have much to contribute.

Many feel that loan and/or target prices should be raised. The high value of building stocks should be reflected in high prices paid for reserves so that incremental output will not be channeled into production of mea? exports and other less valued uses. The current loan rate is too low to encourage production and bring commodities into storage. Alternative bases for setting loan or target prices include (1) the index of prices paid by farmers, (2) the index of prices paid by farmers adjusted for yields, (3) a moving average of past prices, (4) cost of production, or (5) a price necessary to bring production consistent with desired stocks.

Setting price supports according to the index of prices paid by farmers fails to account for productivity gains which enable farmers to obtain a fair return

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7Requirement that farmers rotate set-aside land from one field to the next each year until over a period of time every field on their farm has been diverted at one time or another can he successful in obtaining diversion of "average" cropland, but is of unequal success in humid compared to arid areas. In the latter, rotation of set-aside land may be little more than a fallow system that has no impact on total farm production.

even as price supports rise a little less rapidly than prices paid by farmers. Price supports tied only to prices paid by farmers eventually cause problems of excessive production.

Setting price supports at a moving average of prices over the last, say, 3 years allows prices to adjust to market conditions but without tying prices to an absolute period of "parity" which creates rigidity in prices. Because of high crop prices in the past three years, a past 3-year average support price could induce overproduction if excess demand quickly 'turns to excess supply in the later 1970's. Also a sustained period of excess supply can lead to very low price supports. Target prices are currently inflated by the index of prices paid by farmers and deflated by past 3-year yields. The latter adjustment unduly reduces support levels because yields include output gains from added conventional inputs as well as technology, hence overestimate productivity gains and overdeflate supports. Yield adjustments also are inappropriately sensitive to weather. Despite expected continuing inflation in prices paid, target prices are projected to fall in the late 1970's because of recovery of yields after unfavorable weather in the mid-1970's (Ericksen and Ray, 1970, p. 17). (It is possible that the Secretary of Agriculture will not reduce supports even if the prices mid and yield adjustments call for such action.)

Cost of production support prices are not receiving greater attention. Recently proposed legislation would support prices at 80 percent of the cost of production, including a land charge calculated from crop-share rent. An 'alternative to not validate escalating land prices caused 'by speculation is to support prices on the basis of non-land costs of production, with appropriate adjustment for spatial demands so that production would not move out of areas with a comparative advantage to high cost areas. Supporting prices at the non-land cost of production in the major area of comparative advantage with the cost of transportation added to supports for other was has considerable appeal.[8]

A final approach is to set the support price a year in advance based on expected supply and demand. Flexible loan rates could be geared to build desired carryover. Estimates would be made of expected utilization and beginning year supplies. Loan rates would then be set at that level which would bring expected production to a level that, when added to beginning year supplies less utilization, results in desired carryover. Market price is mainly a function of expect@ carryout, hence market price and utilization would remain quite stable. But price supports could vary widely from year to year, and the government might reimburse farmers the amount the support price exceeds market price. The Treasury cost of the program would be considerable, but the real cost, measured by output deviating from that of an ideal system would be small.

Whether stocks would be held by the government, farmers or the private grain trade is a separate issue. But if farmers and the private trade are expected to hold and release stocks in the public interest, incentives such as government payments of all or some fraction of storage costs could be built into the program. Price supports discussed above can be a ***nonrecourse*** loan rate (at that support price, fanners can place commodities under CCC loan; if market prices fail to rise they can turn in the commodity as full payment of loan) or as a basis for setting direct payments.

As stated earlier, the current first priority when production (supply) exceeds demand at long-term equilibrium prices is to accumulate stocks. But suppose stocks become excessive and farm prices appear headed for low levels. one approach would be to invoke production controls at such levels that expected diversions would hold reserves to desired levels. Another approach is to have no production controls but provide farmers a direct payment equal to the difference between the market price and a minimum support rate based on non-land costs of production or other criteria listed above. It might be well to compute per unit payments on the basis of normal yields on allotment acres, with ***allotments some*** fraction (say 80%) of updated 1973-75 acreages. This procedure would discourage overproduction because additional farm output would receive the low market price. Payment limitations to say $20,000 or less per recipient would help keep down program costs, make the program more palatable to taxpayers and would provide a diseconomy that would restrain growth of large, corporate farms and help preserve family farms.

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[8] Preliminary estimates of 1975 non-land costs *of* production (full costs, including one-third share rent for land, in parentheses) in areas of comparative advantage were as follOWR : corn $1.55 ($2.06) per bushel. wheat $2.30 ($3.86) per bushel, soybeans $2. 85 ($3.79) per bushel and cotton $.45 ($.60) per pound lint.

National food policy cannot be separated from monetary and fiscal policy for the nation because the economic vitality of farmers is seriously threatened by inflation as apparent in Table 2. The chief failure of our economic system. is that it is "lumpy"—it concentrates economic activity temporally (business and inflation cycles), spatially (inequitable income geographically) and inter-personally (case poverty within neighborhood, village, etc.)

Inflation is caused in no small degree by overheating the economy with excessive expansion in money supply and deficit spending to reach an unattainable full-employment target. Inflation not only reduces real prices and incomes for farmers, it also reduces farm output for consumers. Inflation also demoralizes consumers-although the farm parity ratio was considerably lower in 1975 than - in the decade preceding 1973, consumers are deeply concerned about "high" food prices and place some blame on farmers although the principal source of high prices is general inflation.

Although jobs are moving to low-income rural areas, substantial pockets of low income remain. One reason more jobs do not locate is because industry must pay more than the real wage to locate. That is, industry pays the minimum wage, union wage or socially acceptable wage which is considerably greater than the real cost of hiring workers measured by lost output when underemployed persons leave old "jobs" for more productive new employment. Millions of workers including many farm workers and part time farmers are in poverty because their contribution to the value of employers' output is less than the wage. In short, it does not pay to hire them.

A wage supplement would increase national output and employment by allowing workers with low productivity to receive a socially acceptable total wage while being paid the "low" wage at which they can become employed. One proposal is that workers be paid 50 percent of the difference between a target wage of, say, $4.00 per hour and what the worker could receive from the market. For example if a worker could obtain only $1.00 per hour from an employer, the supplement would be .50 ($4.00-$1.00) =$1.50 per hour for a total wage of $2.50. If 2000 hours are worked per year, total income is $5000. A worker who received $2.00 per hour from his employer would receive a supplement of $1.00 bringing total ***wage*** to $3.00 per hour. Thus workers who receive the higher wage rate from employers earn more, encouraging workers to be employed at the highest wage rate. Competition among employers for workers would also keep wages ***from*** falling to very low levels. The plan unlike several other welfare reform proposals would encourage substitution of labor for leisure, would encourage family solidarity by reducing incentive for the father to desert his family to make them eligible for public assistance and would help raise incomes of the working poor (over 50 percent of all poor families in rural areas) to the level of incomes of persons on welfare. Unlike other major welfare reform proposals which would reduce national income, the wage supplement would increase national income and expand jobs especially in labor intensive industries. In short, a wage supplement can help to alleviate inflation, regional poverty and reduce "case" poverty among farmers and hired workers.

Treasury cost would depend on several elements including unemployment rate but would probably range from $5-$10 billion per year. For any given outlay, a wage supplement would generate more jobs, more real output and would target more specifically on the disadvantaged than would a public service employment program.

Many existing programs to end underemployment in rural areas are cost-ineffective and poorly funded. Studies (Nelson and Tweeten, 1957) show how underemployment can be alleviated efficiently in depressed rural areas with major benefits to hired farm workers and part-time farmers by generating more jobs locally. Furthermore, the mix of public programs that accomplishes development targets most efficiently is consistent with local citizens' goals and values based on a survey of residents in the areas studied (Tweeten and Brinkman, 1976; Tweeten, 1975d).

ADDITIONAL NEEDS FOR GOVERNMENT POLICIES, PROGRAMS AND INFORMATION SYSTEMS

This paper has focused main on programs for economic stability. The programs also are consistent with efficiency, but many other changes could contribute to a more efficient and effective national food policy. Several are discussed briefly below.

Research Administration

Our system of publicly supported research has a long and very distinguished record, and great caution must be used in tampering with the system. It currently combines elements of mission-oriented research focused on specific goals, commodities, etc. (notably in the Agricultural Research Service of the U.S. Department of Agriculture) and research permitting a great deal of Individual initiative and responsiveness to local needs (notably in State Agricultural Experiment stations}.

Yet in view of the declining productivity of publicly supported research, some hard questions should be asked of the research establishment: Is undue duplication (some replication is desirable) of research occurring among State Experiment Stations? Are imaginative, productive scientists being rewarded and provided resources while unproductive research resources are culled? Are research funds slanted toward applied research at the expense of basic research on altering genetic structures, etc. ? Are research funds being used to support teaching of inefficient, small classes? Do Experiment Station advisory committees represent those being served including consumers, commercial farmers, small farmers and minorities? What are the procedures for allocating research funds, and can they be improved?

Marketing Efficiency

Substantial marketing research resources have been devoted to uncover alleged exploitation of farmers and consumers by the marketing sector. After several decades of searching with little success for the bogeyman, it is time to turn more attention elsewhere. Opportunities exist for increasing marketing efficiency by fostering more competition among transportation carriers (e.g. eliminating backhaul and route restrictions, allowing greater flexibility in transportation rates to meet competition and permitting easier entry of new firms) removal of differences in subsidy rates between truck, rail and barge transportation, and making foods which require fewer resources ("synthetic" foods, bull meat, etc.) more palatable and accessible to consumers.

Foreign Aid

Foreign aid programs have been closely tied to the availability of grain surpluses in the United States. More efficient and equitable means can be devised to stimulate progress in developing countries, After evaluating foreign aid programs, Tweeten (1970, ch. 15) proposed that foreign aid be provided in cash or credit form, requiring only that imports purchased with aid funds be confined to items such as fertilizer plants, irrigation equipment, technical assistance and food purchases that contribute most to development. If U.S. food supplies are excessive, unit discounts would be offered equal to the cost per unit of paying farmers not to produce, if that is the alternative. Aid would be committed for up to five years in advance so that efficient development plans could be made. Because controlling population growth is vital to meet long-run world food needs, the U.S. should withhold aid to developing nations until appropriate family planning is assured. Channeling aid through multilateral agencies such as the World Bank has great merit, but is unlikely to bring much pressure for population control.

Occupational Safety and Environmental Programs

Numerous regulations and controls are being imposed on the food industry without adequate assessment of costs in terms of foregone output, resource waste and inconvenience. Where issues of agricultural production and environmental protection collide, those who favor increased agriculture production frequently are overruled by environmental impact statements which show environmental damage from undertaking the project. Impact statements should show output and employment foregone under various environmental protection options so that full benefits and costs can be assessed before decisions are made. Risks of causing people to receive inadequate food supplies must be balanced against the risk of using pesticides, growth stimulants and loss of wildlife from drainage of wetlands, for example.

Information Systems

The information system required for a national food policy is composed of institutions, data and analytical systems. Each component is deficient in some respects, and failures in one component can cause deficiencies in other components.

Useful recommendations to improve the agricultural information system have

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been set forth by Harkness (1975) and Hjort (1975) for the 0ffice of Technology Assessment. Improvement is overdue in the statistical capabilities of the agricultural attache system. Though helpful, this in itself has limited scope to improve the supply-demand data from the Soviet Union and Peoples Replublic of China, which have been the principal sources of unstable world markets in agricultural products. The Soviet Union itself seems to lack adequate data on commodity production and utilization. In part this stems from failure of its statistical reporting system, which can be improved. But in part the inadequate data stems from changes in production late in the crop season including failure to harvest grain in the fields because of inclement weather.

My simulation analysis as well as analysis by Blakley (1974) suggests that lack of data rather than inappropriate parameters was the principal source of inability to predict farm commodity price changes in 1973 and 1974. We appear to be a long way from predicting in advance poor harvest weather in the U.S. or the Soviet Union, failure of the anchovy harvest, changes in exchange rates and political decisions in centrally planned countries so that we can alter our production in the current year to keep supplies and prices reasonably stable. Improved information systems supplement rather than substitute for alternative measures such as commodity stock reserves to bring stability to the food system.

Economic theory, statistical techniques and computer capacity are adequate to obtain much more information out of available data. Data are adequate to formulate a simulation model of world agriculture that will supply preliminary answers to such questions as when and where should buffer stocks be acquired for a world food reserve, how large should stocks be on the average, where should they be stored and under what conditions should they be released? Many other opportunities to improve or add to modeling capabilities exist.

In analyzing production capacity, I was impressed with the lack of data on supply functions for critical inputs such as land and fertilizers. Some such information can be obtained from surveys proposed by the Economic Research Service. We can also obtain more information about the structure of U.S. agriculture by moving resources now used in the agricultural census to the Statistical Reporting Service (SRS) as proposed by Hjort (1975) as well as others. The agricultural census currently is processed much too slowly and is all too reluctantly made available in detail to analysts for policy research. Because SRS data are more reliable than those of the agricultural census which is no 1onger a census but a mailed sample survey, much can be gained by moving census resources to SRS to obtain economies of size, timeliness, reliability and increased responsiveness to data needs.

Program evaluation is an Important element of national food policy and rural development. It is not possible to evaluate the impact of proposed programs without objective evaluation of past programs, For the ***most*** part, agencies rely on their own personnel or hire consultants to evaluate their own programs. A large number of such evaluations contain substantial bias in the expected direction, overestimating effectiveness or benefits and underestimating costs. Agencies are understandably self-serving, and treat those (inside or outside evaluators) who provide unfavorable evaluations as ancient Greeks treated bearers of bad news-they remove the bearer from any further opportunity to bring unfavorable reports. Until a quasi-independent agency (or agencies) is established to evaluate major federal food, fiber and rural development programs without fear of being destroyed, public policy formulation processes will be inadequately served. GAO performs a useful role, but its coverage is limited.

SUMMARY AND CONCLUSIONS

The first priority in a national food system is to establish a commodity stock reserve policy. The emergence of capricious consumer-oriented actions to hold down prices has eliminated the option of relying on the private trade to hold adequate reserves.

Analysis of long-term trends in supply and demand strongly suggest that we will have future periods of excess supply that bring unacceptably low prices to farmers as well as periods of excess demand. If the Soviet Union had experienced normal weather in 1975, market prices would now be low. If normal weather prevails in the world in 1976, the opportunity will arise to accumulate reserves to avoid very low farm prices and provide stocks to hedge against unfavorable weather in subsequent years.

The loan rate can be used as in the past as the threshold price at which to accumulate reserves. But the current loan rate is far below the value to society

of accumulating reserves. The opportunity to acquire buffer stocks could be squandered in using added supplies for domestic livestock feed, exports and as cutbacks in production by farmers in response to low prices. Continuation of the current policy leaves world food markets highly unstable in response to uncontrollable weather.

One proposal is that the loan rate be raised to the level of nonland production costs. This proposal would set the stage for accumulating reserves. But it is very important that guidelines be established for stock release as well as accumulation so that all participants are clearly aware of the policy and are less likely to interfere with it out of narrow political partisanship. Suggestions for appropriate stock levels and release policies (such as a 150 percent of the loan level) are discussed in the text. Analytical capabilities exist to simulate stock policies and have been used with success to examine the implications of the proposal by Senator Humphrey (Ray, Richardson and Collins, 1975) as well as others (Tweeten, Kalbfleisch and Lu, 1971).

If stocks are to be in the hands of farmers as proposed by Senator Bellmen, then incentives need to be provided farmers to acquire and release stocks in the interests of all participants in a national food policy. The government might pay farmers 25 cents per bushel of corn and 35 cents per bushel of wheat per year of storage, with the provision that payment cease when prices reach 150 percent of the support rate.[9] Carrying costs would again be available when the market price falls below 150 percent of the support rate, thereby retaining some reserves for subsequent years. Or the government might not charge interest on nonrecourse loans to farmers who follow preset stock release guidelines.

The nest issue is what to do when stocks accumulate to appropriate levels. A suggestion in the text is that farm prices be allowed to adjust to the market clearing level and direct payments (with limitations of $20,000 per recipient) be made equal to the shortfall of the market price below the support rate. The payment base would be acreage allotments revised to some proportion (say 80 percent) of 1973-75 acreage times normal yields. This latter procedure would mean that marginal output would receive the market price, which would strongly encourage necessary adjustments in output.

Emphasis is on buffer stocks because it is the only positive sum game for economic stability in an unstable world. With export controls to lower prices, farmers and foreign consumers lose. Price controls to reduce inflation discourage output required to meet excess demand and are self-defeating. With production controls to raise farm prices, consumers lose the output from farm land and labor resources committed to agriculture and of 1ittle benefit to society unless used in producing food. Although reserve policies emphasize crops, such policies also benefit meat producers and consumers. Recent experience has demonstrated that unstable crop prices seriously damage the livestock economy and cause sharp gyrations in livestock prices.

Some economists point to the insolation of producers and consumers in ‘Japan, Western Europe and elsewhere from 1972–75 price gyrations because they have very high fixed commodity price supports. They go on to point out that Americans unfairly bore the brunt of the price roller coaster. This is a vast oversimplification. Given the choice between high food prices some of the time (U. S.) and high food prices all the time (e.g. Western Europe, Japan), clearly U.S. consumers would opt for the former.

A number of other ancillary proposals to a national food policy are included:

1. A wage supplement would reduce normal unemployment, easing pressures on government to overheat the economy in search of greater employment with excessive monetary expansion and deficit spending. The reduced inflation therefrom would be of great value to the economic health of commercial farmers as well as others. A wage supplement would provide a socially acceptable income while expanding employment for low income, part-time farmers and hired workers. The target wage could be $4.00 per hour, the tax rate 50 percent. Hence workers earning $1.00 per hour would receive a subsidy of $1.50 for a total return of $2.50 per hour. If employed 2000 hours per year, total income would be $5000.

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[9] Supporting prices at non-land production costs would not likely entail large Treasury cost because the probability that market prices from 1976 to 1979 would fall below the soybean support rate (see footnote 8) is less than 1 in 100, below the corn support rate is 1 in 5, below the wheat support rate is 1 in 4 and below the cotton support rate is 1 in 3. In fart. non-land production cost support rates, while proviiding a useful price cushion and enough leeway to obtain efficient allocations from the price system, might not generate sufficient commodity reserves. Therefore, I suggested the farmers be paid 25-35 cents per bushel for storing grains to obtain adequate buffer stocks without excess costs and rigidities from high price supports.

2. A quasi-independent agency would be established to evaluate federal programs. Each major federal program for rural development environmental protection, occupation safety and other purposes would be systematically evaluated for full costs, benefits and cost-effectiveness in using public funds to reach program objectives.

3. In recognition that food aid is only a short-run palliative and that increased indigenous agricultural output and population control are the only satisfactory long-run solutions to the world food problem, the U.S. needs to provide continuing economic aid to countries which have or will develop programs to reduce birth rates.

Foreign aid to less developed countries could be committed in cash or credit form, with limitations that spending of such credits be confined to development purposes. If the major need is food output, the credits could be used to purchase fertilizers, fertilizer plants, irrigation equipment, technical assistance, and other resources to expand farming output. The commitment would be a fixed dollar value for an extended period--say 5 years. If agricultural or other U.S. commodities are in surplus, a discount would be allowed on such purchases.

4. Information systems can be improved along lines suggested by Hjort (1975) and Harkness (1975). More and increasingly reliable data are needed on world food demand and supply outlook, economic health of the farming industry, and potential supply at alternative prices for inputs (fertilizers, land, irrigation, etc.). Analytical capabilities need to be improved for examining the implications of alternative world food reserve systems.

5. The appropriate federal structure to administer a national food policy is not clear. In a recent paper (Tweeten, 1975a) I cited shortcomings in the current policy formulation system including failure of consumers to enter the dialogue while farm policy is being formulated. Consequently, farm legislation is vetoed as consumer interests emerge at the last minute. Consumers of course are very legitimate participant in policy information but their spokesmen are frequently ill-informed. While I have no specific recommendations for institutional changes in the federal structure, I do feel strongly that consumers should be more closely integrated into national food policy formulation. This integration might well extend into research, extension and information systems as well as into policy formulation. In part this will be an educational process for producers as well as consumers

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[The following questions were submitted by Senator Humphrey to Dr. Tweeten and his answers thereto:]

Question 1. If an international reserve program is not agreed to within the next year or two, what would be the maximum desirable level of U.S. reserves?

Answer 1. As indicated in my paper, reserves on the average should be approximately 600 million bushels of wheat, 45 million tons of feed grain and 150 million bushels of soybeans at the end of each crop year. It is unwise to place a maximum limit on U.S. reserves, but measures should be taken once reserves reach optimal levels to restrict supplies. This can be done either by production controls that would remove sufficient production to maintain reserves at desired levels, or by direct payments to maintain farm income while relying on the price mechanism to restrain production and hold down stocks. In any given year, because of unpredictable weather and factors, stocks could go above or below desired levels.

Question 2. Should the maximum desirable level be established by Congress, by a presidential commission, or by some other means?

Answer 2. I feel that the desirable level of reserves and the mechanism for obtaining those levels should be established by Congress

Question 3.. Am I correct in believing You favor discontinuing price support loans when maximum desirable stocks have been accumulated ?

Answer 3. In one of the proposals I presented in my paper (the one discussed in my presentation to the Board) I suggested discontinuing commodity loans when desired stock levels are accumulated. The support price would continue, however. A direct payment would be made to farmers equal to the difference between the support price and the market price on allotments which would be 30 percent of the

1973-75 base acreage. Thus, the government would not continue to accumulate stocks.

Question 4. Could government costs be lowered by accumulating even larger stocks, if required, to support market prices?

Answer 4. Once government commodities stocks have accumulated to the levels indicated above, the real cost of holding additional stocks becomes large. This is because excessive stocks have little value and are likely to be held several years. In approximately 4 years the cost of holding stocks is greater than the original price of the commodities. The chances of releasing the stocks for profit are exceedingly small. Thus it is cheaper to pay farmers not to produce (or to use direct payments and depend on the price mechanism to restrain production) if stocks become excessive.

Question 5. Have you estimated the relative cost of stabilizing farm income by deficiency payments rather than by cropland set asides?

Question 6. If so, how would they compare?

Answer 5 and 6. It is more costly to the Treasury to stabilize farm income by deficiency payments than *by* cropland set aside. But this is only one aspect of the issue. Social costs can be defined as the reduction in total volume of goods and services produced in the nation with one program versus another. A direct payment program by this measure is less costly than an acreage diversion program which removes resources from production ! Furthermore, direct payments are more flexible and can be made more equitable among farm income groups.

Because acreage diversion programs have been run very inefficiently in the past, the Treasury cost of direct payments would perhaps be only 50 percent larger than the cost of a cropland set wide program to achieve the same net farm income. Costs to consumers would be lower with direct payments, however.

Question 7. What is the estimated cost per bushel, not including land charges, of producing wheat? Corn? Soybeans?

Answer 7. Preliminary estimates of 1975 non-land costs of productionin areas of comparative advantage are as follows: corn $1.55 per bushel, wheat $2.30 per bushel, soybeans $2.85 per bushel and cotton 45 cents per pound lint. These non-land production costs apply to Iowa-Illinois for corn, western Kansas and northern Oklahoma for wheat, Illinois for soybeans and the Texas high plains and Mississippi Delta for cotton. Support rates tied to non-land production costs would be adjusted for transportation and other factors so that rates would be higher in other areas of the country than those indicated above. These support rates are not high, and would not entail large government costs for deficiency payments. They can be faulted for not being high enough to generate sufficient commodity stock reserves. Accordingly I suggest that, to obtain needed stocks, farmers be provided a payment of 25 to 35 cents per bushel to encourage them to build stocks to desired levels. As a condition for receiving this payment, farmers would agree not to release stocks at less than 150 percent of the support rate. Thus working stocks would have to be provided b the private trade.

Question 8. You do not expect much benefit to United States from the recent Russian grain agreement and you do not propose changes in existing statutory export control authority. In view of the disturbing effects of recent voluntary restraints imposed by U.S. without consultations, how should an unusually large export demand by the Soviets, such as occurred this fall, be handled?

Answer 8. As indicated in my paper, I feel that it would be unwise to expect too much from the recent Russian grain agreement. It is not a substitute for commodity stocks and other measures to stabilize markets. I feel that exports should be monitored, with reporting required only for impending sales of significant size. The purpose is to keep the Soviets or any other nation from exploiting our fragmented export structure by buying from several firms at one time, with no one of these firms realizing the magnitude of the overall sales and hence, misjudging price. If commodity stocks were adequate in the U. S., a large export demand such as occurred in 1975 could be handled without export controls.

Question 9. Have You estimated the cost of a wage supplement Program? How many workers might be affected?

Answer 9. The costs of the wage supplement program would depend on a number of factors including the degree of unemployment in the economy, the target wage, and the proportion of the difference between the target wage and the market wage made up by subsidy. Costs would range from $5 billion to $10 billion per year. Several million workers would be covered and the exact numbers have not been worked out. However, I strongly emphasize that the cost which I indicated is that to the Federal Government. Again, measured by

the real economic costs defined as the reduction of goods and services produced below that of a perfect market, the wage supplement would be very low cost because it would increase output of goods and services in the country.

Question 10. How would your suggested quasi-independent agency for evaluating Federal programs differ from the General Accounting Office?

Answer 10. A problem with the General Accounting Office is the limited coverage provided. In a very extensive review of rural development programs, for example, I found virtually no programs evaluated by GAO. Furthermore, GAO provides comparatively few benefit-cost analysis—their evaluations are more of a general nature. The quasi-independent agency I proposed would have much broader coverage and economic analysis in depth.

Question 11. Why not reorganize the GAO and have it make cost-effective evaluations of Federal programs?

Answer 11. I have ***no*** quarrel with reorganizing the GAO and providing more funds to more completely evaluate federal programs. Some might raise the issue that, just as executive evaluation agencies tend to bias results in favor of programs supported by the President, GAO might be faulted for bias ***in*** favor of programs supported by the Congress.

Question 12. How can United States stimulate increased family planning programs in the developing countries without incurring their ill will?

Answer 12. The United States would incur some ill-will in promoting family planning programs in developing countries. The amount of ill-will generated I believe would be a small price to pay for the long-run contribution to the well-being of the people that would ensue.

Question 13. What is an "optimal reserve management?"

Answer 13. Optimal reserve management is one which minimizes the social cost, where social cost again is defined as the deviation of output of goods and services from that of a perfect market. It has great value as a measure of the worth of a policy because it does not consider the interest of consumers apart from farmers or taxpayers. It is the best single measure that economists have of the contribution of a policy to ***overall*** national well-being.

Question 14. How is the "equilibrium price" computed?

Answer 14. The "equilibrium price" in a stock change formula can be computed from existing analytical tools. In practice, however, we can come close to estimating an equilibrium price simply as the full cost of production, including 1/3 land rent, for any particular commodity. Such estimates can be supplemented with other more sophisticated devices such as predictions from econometric models. The equilibrium price need *not* be estimated exactly; it is only necessary that the equilibrium price fall within the bounds of stock accumulation and release prices. If loan prices chronically exceed equilibrium prices, problems emerge of excess production, burdensome commodity stocks and/or high Treasury costs.

Question 15. Do you think there should be mandatory public reporting of all export transactions?

Answer 15. I do not advocate mandatory public reporting of all export transactions. Only exports for major commodities and of significant magnitudes need to be reported. This should in no way be conceived of or operated as an export control device. Rather it is a means of keeping informed in case very large export transactions are involved. The fundamental problem with our export system is that large purchases such as the grain sales to the Soviets in 1972 can move us far up the demand curve to a substantially higher price. But without information on the degree of sales, the sales price is at a much lower level. Failure to communicate the magnitude of sales allows a monopolistic importer of American farm products to exploit our fragmented export ***system.***

Chairman HUMPHREY. Congressman, do you want to ask some questions first?

Mr. 13 BROWN. Senator, I have some questions but I certainly would like to yield to you.

Chairman HUMPHREY. I want to yield to you.

Mr. BROWN. I am a little reluctant to take the time to ask questions in view of the far greater familiarity' with this area that Senator Humphrey has and the great contribution he is making in all its various areas, including the Technology Assessment Board.

However, I have become convinced that there is going to be a need to stabilize basic commodity prices, particularly grains, which enter into the export market in far greater degree than any other commodity; and that only where we do have a degree of stability can we undertake a reserve program which is equally important.

I note in the testimony of all of you gentlemen comments with regard to this or comments that relate to it.

For example, Mr. Jaenke has pointed out what he described as the 18th century laissez-faire philosophy which motivates the present administration of the Secretary of Agriculture, and of course that philosophy is not favorable to a program of price stability.

On the other hand, the other two papers contain specific recommendations for stabilization of grain prices. Dr. Cochrane's paper suggesting that a price level could be held within a plus or minus 10 percent figure; and I gather Dr. Tweeten feels a greater range of price stability, price levels, would be necessary.

The point being, however, that we need to have both a bottom and a top. We need to recognize that the one ***protects*** the farmer; the other protects the consumer. And hence they are both essential.

May I ask, and this is preliminary to the question, those of you who have commented on this problem of stability of price, do you think that agreement could be reached on a spread, whether it is plus o-r minus 10 percent or some other figure that would do the job, both of protecting the consumer and protecting the farmer and his income, given an administration which was not devoted to l8th century laissez-faire economic philosophy ? Is that a possibility ?

Dr. COCHRANE. Let me make two or three comments. Here I will be quite political because I think the answer is political.

No, I do not think that this administration will push the kinds of ideas that are necessary to bring it into being, both internationally or at home. I think, in a 1 fairness, we should recognize that our grain farmers typically do not like the idea of a legitimate reserve stock program with both price ceilings and floors. They are quite opposed to any kind of program that would put any kind of ceiling on prices.

Mr. BROWN. They are not reluctant----

Dr. COCHRANE. They want a floor. The want a "Heads I win, tails you lose" proposition, which they have become used to over a long period of time.

To bring the program into being would take—would take two or three things, It will take leadership internationally, and it will take leadership here at home.

I agree with Dr. Tweeten, I am not quite sure of the mechanics, but some kind of sweetener is going to have to be offered to farmers to get them to come along, because I think what farmers really believe, and I believe it, too, in light of what I said, that there are going to be more high price years than there are going to be down years in the next 10 years.

If you believe that, then you will be reluctant to put a price ceiling over yourself. Whereas, consumers, I think, realize that things are not so happy for them, and hence the pressures typically come from the consumption side.

So I think a great deal of leadership, both internationally and domestic, is going to be required to bring into being an effective grain

reserve stock program. I think some sweeteners are going to have to be offered to farmers to keep them from bucking in very hard. I am talking specifically of the grain farmers.

Livestock farmers might be a bit more happy to go along with it. But this is not a downhill pull, or it would 'be occurring now.

It is going to take some real leadership to bring such a thing about, and there is going to have to be something in it for farmers to keep them from dragging their feet badly. I do not talk to any grain farmers who even want to talk about a grain reserve program.

Mr. BROWN. Mr. Soth wanted to make a comment.

Mr. SOTH. That is absolutely correct as far as grain producers are concerned and soybean producers. I hear the same thing that Dr. Cochrane mentioned.

However, I think that livestock producers, the poultry industry, and the cattle people particularly, have a somewhat different attitude. That attitude of livestock men is not being reflected in the policies of the leading farm organizations. But they understand, I think, better than the grain farmer this instability problem.

There are lots of cattlefeelders that were wiped out a couple of years ago, and the poultry industry has been hurt by these gyrations in prices. I think they would support and welcome an effort of this kind.

I would like to emphasize one more time that an effort at national planning, where the Government and leading farm organizations and others sat down together and tried to set forth some goals on production, what we need for reserves and so on, would be a fine educational process, that we would all have a better basis for looking to the future and for establishing these reserves than going the way we have been going.

Mr. BROWN. Thank you.

Mr. JAENKE. I disagree with at least one of the statements, particularly that Dr. Cochrane just made, that farmers do not care about this whole question, and they only want something at the bottom and do not want anything at the top.

I work closely with a number of farm groups and from that experience I do not agree that farmers are insensitive to adverse effects on other groups.

Mr. BROWN. I believe they were trying to separate elements within the farm community.

Mr. JAENKE. Let's put this in proper context. Farmers do not have a floor under their prices. When you talk about $1.37 for a bushel of wheat as a loan price, well, that does not even cover starting out and getting the land ready. Farmers have had no experience with any reserve program, only with surpluses. There has been no leadership talking about this. There has been no effort to develop the rationale and logic to show that there are benefits to agriculture, not only livestock people, but there are benefits to grain people, too, of a well-planned reserve.

They have nob had this full impression of what can happen and what the benefits of this can be. So what they have is a meaningless, totally meaningless, support program or floor program. With these conditions they worry about what level the top cutoff is going to be. And in those sort of circumstances, I am with those grain farmers in

not wanting a reserve. But that is not what we are talking about, I hope, in this hearing. The consensus of the discussion at the hearing has been that we are talking about something that combines a meaningful floor with some type of meaningful reserve to protect against skyrocketing polices.

Right now, we have got grain price ceilings, but they are made b a luncheon meeting of third level State Department officials with some foreign government.

Mr. BROWN. Do you think it is possible to achieve some reasonable agreement as to the levels of floor and ceiling prices that would be realistic ?

I was a little bothered at this content of plus or minus 10 percent.

Dr. COCHRANE. Let me speak to that.

What I was talking about was a price stabilization range of plus or minus 10 percent, say, for 1976 of the most recent 3- ear average, and that is a pretty high range. I am not suggesting to farmers that they go back to a pre-1972 price level for the grains. I have argued, wherever I speak, that the level of price support should be raised—in fact, what I was suggesting is the following:

That we try to stabilize prices around a moving 3-year average of prices and it would begin with the last 3 years. The international program would acquire stocks at the bottom of the range-that is at 10 percent below the 3-year average-to put a floor under the range, and sell stocks at the top of the range—that is, at 10 percent above the 3-year average-to put a ceiling on the top of the stabilization range.

I have also argued elsewhere that the loan rates for all farmers in the United States, in such a program, could appropriately be raised to the bottom of this stabilization range. Maybe if farmers understood it-maybe if they understood it--they would be more favorable to the stabilization idea. I am not talking about peanuts f-or them.

Mr. JAENKE. The answer, in my judgment, is yes. I think that this can be worked out.

Mr. BROWN. There are going to be two kinds of objections to stabilized prices. By stabilized, I mean those that provide a set price range.

First, the objection that that is not the business of a free market system or a Government that is committed to free market policy.

Second, that whatever prices you set, there will be arguments from others who may agree in theory that there ought to be price stability, but that the prices chosen are wrong, that you have not properly protected the farmer or the consumer.

The consumers will object if the ceiling is too high. The farmer will object if the floor is too low.

SO I am disregarding the first objection, based on the 18th century as a fair economics, but I am trying to pinpoint the degree to which we might be able to reach agreement on the spread between the base and the ceiling.

Dr. TWEETEN. I wanted to say a little bit on the issue of floor prices.

One of the problems, when you try to retain the very narrow range of prices, is that it entails in many cases very substantial resources to keep prices within that range.

Mr. BROWN. If I may interject. it has been my experience analyzing productivity figures in many areas that there is a normal difference

in productivity, that is the ability to produce at certain unit costs, and it is at least 20 percent, and maybe more in many areas.

Dr. TWEETEN. Even more than that.

Take, for example, soybeans. The nonland production cost in Illinois is about $2.85 a bushel. The land cost is nearly 50 percent of nonland cost of production.

If you allow price to rise 50 percent above loan rate, set at the nonland cost of production, and allow it to rise no further, you cut off chances for a profit. Furthermore, if you raise the loan rate substantialy above what I suggested, then you face a problem of restraining production, because price supports will encourage overproduction.

I was trying to pick a reasonable compromise on support prices in light of the fact that I think there are many who feel supports should be sharply higher while others feel there ought to be considerable market orientation in farm programs.

Mr. BROWN. I think initially any stabilization program is going to have to be fairly broad in order to give some sort of allegiance to the effect of the market or some sort of recognition to the effect of the market. It may be possible to narrow it later as we get further experience with it.

Dr. COCHRANE. Well. I agree and disagree with most things that have been said recently, but let me comment.

If you had an average price of wheat, of say $4, a range of plus or minus 10 percent is $3.60 to $4.40, this is an 80-cent range. That is enough to give people signals about what resource adjustments are needed.

If the stabilization range gets much bigger, or, if the range is as big as prices fluctuating anyway, then you are only giving lip service to stabilization.

I might agree to say plus or minus 15 percent; or you might say minus 5 plus 10. There are all sorts of price range combinations.

But the point I want to make is that a range of $3.60 to $4.40, is 80 cents, is not a small range.

Mr. BROWN. HOW does that compare with the actual range ?

Dr. COCHRANE. When Mr. Jaenke and I used to be in the Department, that would have been a hell of a big range.

Mr. JAENKE. Based on recent years, it would look much more too narrow. I would prefer to see a wider fluctuation within this thing.

The range for wheat has been from $2.90, $3 to nearly $6 a bushel over the last 24 months.

Dr. COCHRANE. Is that good?

Dr. TWEETEN. Nonland cost of wheat production in western Kansas and northern Oklahoma is about $2.30 a bushel. And, furthermore, the total cost with one-third share is $3.06 a bushel. Excess supplies of wheat will build without production control with the price supports that Dr. Cochrane is talking about.

Mr. SOTH. What we are talking about, all of us. I think. is stability around a long-term trend. We are not trying to tinker with the long-term trends in cost and demand and supply.

Mr. BROWN. All of you seem to agree that the long-term trend is upward.

Mr. SOTH. That is where we are going to argue-

Dr. TWEETEN. Great fluctuations.

Dr. COCHRANE. I am going to ask a question of my colleague here.

Mr. BROWN. I encourage you to do so if it will contribute to the record.

Dr. COCHRANE. I know how much market prices have fluctuated in the last 2 years.

Were you saying we want a "stability" where prices fluctuate that much in the future, or do you want to narrow that range down?

I am not sure what you were saying.

Mr. JAENKE. I want to narrow the range but not as much as you do.

Dr. COCHRANE. OK.

First, I would like to say, Congressman, that I do not argue that plus or minus 10 percent is the correct stabilization range. It might be plus or minus 20 percent, or there can be other kinds of stocking rules.

I would like to argue with my colleague, Dr. Tweeten, though, that I do not think land costs are relevant to this discussion. Land costs in this context are totally meaningless.

Land costs go anywhere that the price level goes.

What is really important, and I think it is implied in my statement, is that the nonland costs are important.

Land costs simply rise and fall with price levels. That does not mean it is easy for farmers. In fact, if we should get a big decline in prices now, and prices should fall to where they were, one of the anguishes that farmers would go through would be deflating their assets to a new price level.

But what happens to land costs does not impress me at all—what happens to land costs is simply what happens to price levels 2 or 3 years later.

Mr. BROWN. I would think it would be material only if there is quite a bit of entry into or exiting from—

Dr. COCHRANE People very quickly capitalize increased returns. You do not have to be 'buying the land to capitalize the value of the land sales values into your asset value.

Mr. BROWN. Dr. Tweeten.

Dr. TWEETEN. The only thing worse than viewing what happened in the 1960's as the guide to the future is to view 1973 and 1974 as the guide to the future. Our analysis indicates that what happened in 1973 will happen only once in roughly 35 years. I submit that if we had a more intelligent commodity stock program and an acreage diversion program more responsive to emerging events, we could have avoided many of the undesirable consequences of the 1972-74 period.

I do not think we would want to pay the price for a security policy that would avoid any price rise in response to a very rare circumstance such as occurred in 1972-74.

Mr. SOTH. They developed again in 1975.

Mr. BROWN. Let me offer a simple hypothesis, and then please comment after that.

Recognizing the nature of the political process, which makes change by incremental stages only, would it be reasonable, if we were to propose the introduction of a stabilized agricultural price program, coupled with a reserve program, to look at the fluctuations over a recent period of history—take whatever you wish, 3 years, 5 years-and develop price levels, upper and lower, which were less than those

swings but which perhaps were not drastically less and that we then seek to obtain from experience after 1 year or 2 or 3 years of this to optimize that spread in order to achieve the policy goals of full production and adequate reserves that we are seeking to obtain?

This I am suggesting from a political standpoint as probably being the way that it would occur anyway. Is there anything wrong with that ? I would like to hear your comment, Dr. Cochrane.

Dr. COCHRANE. Would you restate the position. I am not sure I understand exactly.

Mr. BROWN. I am suggesting that we look at the price swings in the commodities such as wheat or soybeans. They vary in the amount of the swings, of course. And that we seek at an initial stage in stabilizing prices to confine the upper and lower levels within a range smaller than those actual fluctuations over some reasonable period of time on the basis of experience, determine the optimum range that we want to have as our price stability program.

Dr. COCHRANE. Yes, that might be the way to go about it. I agree, you begin not by narrowing down the range of fluctuation too much. You begin gingerly, and as you gain experience with the program, you could tighten it down. I think that is one way to begin.

I was not trying to sell this 10-percent range. I was only using it to illustrate. But I think there is an important point to what I was saying: It is that you could do an effective job of holding world prices in such a range with an average reserve stock of about 60 to 70 million tons, which is considerably less than the U.S. Government held in 1960. I am using the 10-percent range to illustrate the magnitude o-f the job.

The way to begin might well be to begin with a much wider stabilization goal or objective and then when you have gained experience to possibly tighten it down. And maybe you would never want to tighten it down. I do not know.

Mr. BROWN. Let me interject one additional point from my own information and for the record. Can any of you contribute any information as to what the range of prices has been maintained at in other countries separating market and nonmarket countries, if you have that information ? This would provide some sort of basis for analysis and precedent if we had that kind of information.

Mr. JAENKE. We could certainly provide it, yes. In a nutshell though, for those importing countries in the commercial market sector the prices ranged right along with what our prices ranged because they were coming into world markets.

Mr. BROWN. Many of those maintained domestic controls.

Mr. ,JAENKE. Almost every country has a much more government-structured program for maintaining grain prices, and generally around the world those grain prices—I am speaking just of grain—are somewhere between 25 and 75 percent higher than U.S. prices have been over the last decade.

Mr. BROWN. obviously any program has to start with probably wheat, and corn and maybe then more control to others——_—

Mr. JAENKE. And rice.

Mr. BROWN_. Yes. I am again looking at it politically. We start with the highest priority and move down the line.

Dr. Tweeten.

Dr. TWEETEN. Some have pointed with approval to the Japanese and Western European system. They have high fixed support rates. They largely avoided the gyrations of prices that occurred in 1973 and 1974 in this country. Some people look at this with approbation because they did not experience instability,

I submit that if American consumers are confronted with the possibility of high prices once in a while, versus high prices all the time, as you find in Western Europe and Japan, the will take the former. On the other hand, we can develop policies that more effectively reduce instability.

Considerable analytic capability using simulation models exists to operate on a small scale the farm economy over a period of years to learn how various policies would work.

One of the complaints among farmers and others is that policies keep changing. Farmers like to know the rules of the game, I think they would even put up with export controls if they knew the rules of the game. In other words, farmers want a policy established in advance. They do not want a trial and error system.

Mr. BROWN. I would concur wholeheartedly with that. and yet the problem basically is that we have in this great democracy of ours national administrations with widely divergent philosophies, and this reflects the fact that the people of this country, not being economically sophisticated in general, have widely divergent ideas as to what is the best kind of program. They tend to see the situation from their own rather narrow point of view and not with regard to long-term economic reality.

Mr. Jaenke, we have not dwelt too much with your own proposals having to do with organizational change, and they pose some rather interesting possibilities. I would like to invite any of the other panelists if they would care to comment with regard to the suggestions made by Mr. Jaenke with regard to the restructuring of the organizational aspects of this matter, and you here have an opportunity to get back at him for what he may have said.

Dr. COCHRANE. I found his comments very interesting. My reactions run as follows: I find his first proposal and his third proposal the most easy to live with. I cannot visualize this policy organization, the second proposal that had no implementing power, very easy to live with. I do not quite see how it would work.

M-y reaction would be first to to his first proposal, namely. that there bean assistant to the President that has the responsibility of trying to coordinate these various agencies and have a food council that reported to him. That in my judgment is the place to begin, and it ought to begin soon.

The Congress then might well want to review his third proposal and give it some serious thought.

Some of these things can be pulled together very easily but some cannot. Take transportation—the transport system has got to serve all kinds of users, and you cannot ever pull all of the transport implications over into this food agency.

So, I would like to see the Government begin with the first proposal made by Mr. Jaenke. I would like to see the Congress seriously consider the third alternative. It is rather difficult for me as a sometime bureaucrat, to see how alternative two could be made to work.

Mr. BROWN. Mr. Soth.

Mr. SOTH. I have been watching changes in Government organization for quite a, few years, and I take a pretty cynical view about just shifting agencies around. I am not very sanguine about any organization of this kind, any of the three, that is very useful. I would rather concentrate on the kind of policy you want to achieve and to set up a planning organization in the Department of Agriculture. And, as Dr. Cochrane and I said in our paper, just on the matter of intelligence information, let us make minor adjustment within the present system to try to make it work better rather than reshuffling of agencies.

Mr. BROWN. Did you have a comment, Dr. Tweeten ?

Dr. TWEETEN. I feel strongly that farmers and consumers need to improve communication. Farmers have been upset in the last few years by actions which they do not favor, and which they feel have been imposed upon them by consumer interests. They feel that agriculture policy has gotten out of their hands. I think from the consumers point of view there is also a good deal of distrust.

Greater communication between farmers and consumers is needed in policy formulation, so that when farm legislation reaches the final stage consumer interests do not suddenly emerge and say: "We do not want this." This opportunity for communication and dialog ought to be possible within the agencies that formulate food policy. It would help educate both the farmer and the consumer, neither of which appreciates the other's point of view.

Mr. BROWN. Do you want to respond, Mr. Jaenke ?

Mr. JAENKE. I think it is naive to think that—light of the emerging importance of food as an important economic factor domestically, as an important economic factor worldwide, and as a tool in our international structure and in the complex of international affairs-h think that the Department of Agriculture by and of itself is going to be able to make isolated decisions. I think what we showed here, the Executive Office Organization for Food Issues chart, and the 26 Government agencies that in some way or the other have gotten into this food problem, is not because people wanted it to be that way. It just happened that way. It developed because of its importance. AID has got a role in food. State has a role. Treasury has a role. Federal Reserve, et cetera.

Right now we have compartmentalized, divided decisionmaking, scattered around all over. In order to tackle this our Government set up some White House structures. These expanded and expanded until we have committees on top of groups on top of boards, I think all three, four, five, or six of us here to today are saying roughly the same thing, that we have got to get on top of this total food picture.

I do not think you can do so short of some single coordinating decisionmaking body with all the information and all the facts. Whether any one of these three alternatives have great preferences or not is really less important than the point that we have got to get all facets pulled together. And to say that the Department of Agriculture can do it or the Department of State can do it or farmers can do it or consumers, is ridiculous. The decisionmaking process must be pulled together to bring about some long-range planning and some coordinated efforts in this area.

Mr. BROWN. Do you want to pick upon that, Senator?

Chairman HUMPHREY. Yes.

Mr. BROWN. He said long-range planning.

Chairman HUMPHREY. We need long-range planning in many things. I have introduced legislation to set u a White House coordinator to pull together the many facets of food policy. We have a school lunch program, the WIC program and the supplemental feeding program, among others. Then we are faced with the policy arguements that take place between Departments of Treasury State, and Agriculture. The most recent example is the so-called voluntary embargo on 'the sale of grains to not on y the Soviet Union but elsewhere. I think some structural reorganization is in line.

By the way, yesterday at our OTA meeting, we approved a series of proposals for further study, such as on the technology of food processing. Another approved assessment is on alternate national food policies and a third one is on the normative function of food grading.

Mr. Jaenke, is the legislative authority for dealing with threatened food shortages or occasional surpluses adequate for supplementing our free market system ?

Mr. JAENKE. No, sir. The current legislation, Senator, the Agriculture Act of 1973, has 'had one major—major weakness-and that is opportunity for adjustment in the loan and target prices was not able to take effect by law until 1976 and based only on the 1975 cost conditions. Since mid-1973, there has been somewhere around a third—a 33 percent-increase in the cost of inputs. But in 1976 because of the wording of the law, this will reflect itself- for the first time as probably an 8, 9, 10, or 11 percent increase at the maximum. So, from that standpoint, it is not adequate.

Second-and 'Congressman Brown brought this out very well in a question he asked of us-is there a way in which we could use the basic concept and add Willard Cochrane's idea of a 3-year average? Basically yes, but I think maybe we have a little difference as to how wide should be the range in market play. I personally favor more than the 10 percent that was suggested in one of the papers.

But the 'basic concept of a loan level with a target price, coupled with some reserve legislation, coupled with some overall policy coordination in the information sense and in the international sense, then I think we can move ahead into the next decade with some confidence and some ease.

Chairman HUMPHREY. I have introduced a bill similar to that. I want you to actively support it, Mr. Jaenke.

Mr. JAENKE. What is that number, sir? [Laughter]

Chairman HUMPHREY. Our problem with this sort of thinking is in the Committee on Agriculture. I happen to think that if you just let it run wild, the producer ultimately gets a poorer deal than he would have if there was some market stability.

From the consumer point of view, once those prices go up, they just do not come down. Just this morning I said to Mrs. Humphrey, "HOW much did you pay for that bacon?" because she only gave me two strips of bacon and I like three. You know, I was just kind of edgy in the morning, and I said, "HOW come I did not get three strips of bacon?"

And she said, "Do you know what the price of bacon is?"

I said, "No, I do not. I know the price of hogs has gone down."

And she said, "Well, you go tell that to all your Senator friends up there, will you." I was getting motherly and wifely advice in the morning. That is the way that day started.

And I said, "Why, I was just out home. I saw that hog prices had gone down about 40 percent since August."

She said, "You go over to the supermarket and see what bacon prices have done." She said, "This bacon cost $1.99 a pound. This is the cheap bacon." And she said, "The other bacon is $2.26, $2.19."

I said, "That is what you told me 2 months ago."

She said, "That is right. It has gone up since then."

I said, "In the meantime, the price of hogs has gone down."

Is that right, the price of hogs has gone down, Lauren?

Mr. SOTH. That is right.

Chairman HUMPHREY. My wife did not *understand* that, and she told me to take it up with you fellows. But is it not a fact that once those prices go up, they stay there a long time in the supermarket? In the meantime, the producer is caught in the ups and downs of the childlike fever of price fluctuation.

How do you think you can sell that to the farmer?

Dr. TWEETEN. In all fairness to the marketing sector, we must recognize that they did absorb some of the price increases at the farm level back in 1973 and 1974.

If you will look at the margin Senator, over a period of years, you will find that this proportion of the consumer food dollar going to the marketing sector tends to be smaller when farm prices ***are*** high and larger when prices are low. It tends to average about 60 percent.

Chairman HUMPHREY. Meat prices have a difficult time finding their way into the supermarket structure. I am a merchant at heart, and I know a little something about inventory. There was not a great deal of pork product in storage. They just did not have it.

I can understand when you buy high, have your warehouses full, you have got to liquidate. But when your warehouses or your refrigeration are at a minimum in terms of supply, this ought to be reflected more rapidly in the finished product.

Anyway, it is hard to explain to your wife.

Mr. JAENKE. We cannot help on that latter one, sir. [Laughter].

Chairman HUMPHREY. It is also hard to explain to the consumer. And I think that farm people have to understand the importance of the consumer here.

Now dairy prices are way up. A pound of butter is over $1. One of the reasons for this is that dairy production is way down and consumption did not drop the way USDA said it would.

If you have an economic policy relating to dairy where you do not worry about the price of feed, where farmers were selling off their cows because they did not want to feed them and where pasture was not too good in many places, you are going to have problems at the consumer level and also at the producer level.

Mr. SOTH. I think that, as you said, when prices shoot up very rapidly, farm prices, that that does tend to get ironed into that retail food cost and it does not come down as much. And, Luther, in that period you are talking about, you did not mention that there were price controls on those margins for a while in that period, and they did not grow as fast then.

But there is a very sticky quality to most of those margins. They stay up once they getup there.

Chairman HUMPHREY. We have had two or three proposals on reserves. As I understand it, Dr. Tweeten, you feel. that a reserve could beheld by the farmer.

Dr. TWEETEN. Yes; I say that because it is one way of getting a reserve policy acceptable to farmers who now oppose establishment of a reserve policy.

Chairman HUMPHREY. I understand the farmers' concern about a reserve policy.

I have made a proposal using about the same figures that you outlined--45 million tons of feed grain, about 500 million bushels of wheat, 150 million bushels of soybeans, and 150 percent release price of the target price.

I was interested in your proposal of a fee for the farmer storage. My reposal would have one-third of that held by the Commodity Credit Corporation, and two-thirds of it held on the farm. My proposal suggests 2-year nonrecourse loans, for example so that Commodity Credit Corporation could not demand that the stocks be brought on into the market, and the farmer could market when he feels conditions are best.

I would like your comments on any of this.

Dr. COHCRANE. I would like to comment on that last point. Those numbers that you and Dr. Tweeten have been talking about, intuitively sound pretty good, and I have used numbers like that myself. In fact, I used to talk about such numbers in the Department of Agriculture between 1960 and 1965. But you have got to recognize that in using those figures, we are the leading exporter of grams. We are linked absolutely, completely, and irrevocably now to the world market, Therefore, you have now got to talk about the #reck that will be required to stabilize the world market, and those numbers I think will not do that. U.S. reserve stock, those numbers have got to be viewed as a part of an international reserve stock program. I think that is very important.

I also agree-and I see no reason why—that a art of the stock could not be held by farmers. I know as well as anybody in the room how much farmers like to hold stocks and get the storage payments. That is fine. But you have also got to recognize that the release and acquisition rules must be integrated into the international reserve stock - program. So, we can talk about a reserve stock program and a food and agriculture policy for the United States, but we have got to continually visualize this stabilization program and food and agriculture policy of the United States as being consistent with international programs because the price instability problem arises largely outside the United States, and the long-term trend problem, however you visualize it, arises largely outside the United States.

So, these numbers you are talking about could well be the U.S. share of an international grain reserve, but you should think of them as the U.S. share of the international reserve rather than just numbers by themselves. And you have got to visualize the operating rules for acquisition and disposition as being integrated into the decision rules of the intentional reserve stock program.

Chairman HUMPHREY. Dr. Tweeten.

Dr. TWEETEN. Prior to 1973, and I do not have data more recent than that, the biggest shortfall of grain production before the 10-year

trend was in 1965 when it was 44 million tons for the whole world. A reserve of 60 million tons-and that is roughly what we are talking about for grains-would handle about all but perhaps one out of a hundred possibilities. I do not think we would want to hold more than that on the average.

Furthermore, I am pessimistic about soon signing an international food reserve policy, and I think from a humanitarian standpoint as well as for our own self-interest--because this 60 million tons works out from an economic point of view to be ideal for us. The United States should establish a food reserve system.

Mr. SOTH. The Canadians, I believe, are interested in talking with us about a joint United States-Canada reserve program. I recently talked to a couple of Canadians, and I get the impression that the Canadian Wheat Board would be agreeable to at least an international reserve program to that extent, of Canada and the United States, the two biggest exporters.

Chairman HUMPRHEY. That would be a great help, and it is the sort of thing that we need to explore. We will undoubtedly be working with some of the gentlemen here, will we not, Mr. Cordaro?

Mr. CORDARO. We certainly will.

Chairman HUMPHREY. Ed, you were going to say something. Did you have a comment?

Mr. JAENKE. I think it has been said.

Chairman HUMPHREY. I have some questions that we will submit to you for further comment.

Let me just say that I think what we have discussed here is of immense importance. We are going to try to share this information as widely as we can with our colleagues. I am going to take the liberty, Congressman, of putting these statements in the Congressional Record.

I think this is of such basic importance that we must attract more attention to it.

We really need one of these weekends, Dr. Cochrane, that you and I talked about earlier this summer.

Dr. COCHRANE. Yes, what happened to that lost weekend?

Chairman HUMPRHEY. I do not know. That lost weekend got lost, I guess. It seemed to me that it would have been of great value to have an Airlie House-type conference where we could get enough people together to look at the dimensions of the problem before us, and discuss what tools we have to deal with the food problem and what initiatives need to be taken. The food element in our economy is of tremendous consequence, as is the international situation.

HOW many of these countries that we do business with really have a free market operation?

Dr. COCHRANE. Almost none.

hr. JAENKE. Practically none.

Dr. COCRHANE. None.

Chairman HUMPHREY. I am not opposed to our free market operation. I want to make it operate. I will be honest with you. The longer I am in government, the more concerned I am about what government tries to operate.

I do not want the Government to get into too much marketing.

What is the effect on our system of these Government-managed markets abroad? What does it do to us in our marketing operations? Do we need to make any basic changes in our system of marketing so that we can do a better job for our producers? After all, the main thing we are concerned about here from the economic side is the producer and the consumer.

Mr. JAENKE. I do not think there is any doubt we are at a tremendous disadvantage. It is like boxing with one hand tied behind you There is no question about it. The informational aspects, of course, come first and foremost. Everything in this count is published. The Chicago Board of Trade, the Kansas City Boar of Trade, and so forth are set up to broadcast marketing conditions around the world. The intelligence network of foreign governments in this country is extremely able in knowing about our domestic grain situation, perhaps as good----

Chairman HUMPHREY. You do not need to compare it with ours. Ours has been dismantled.

Mr. JAENKE. Very good at least. And clearly there is a tremendous disadvantage for American businessmen and cooperatives to try to compete and compete effectively in the world markets against the monolithic state trading system, as you have in Japan, you have in Russia, you have in the EC countries, you have in the developing nations, you have as we said, just everywhere. It is tough.

Chairman HUMPHREY. There are no major countries that have this sort of free market operation in their agricultural sector. Am I correct ?

Mr. SOTH. We are the shock absorber.

Chairman HUMPHREY. SO, we take all the shock of the instability; is that correct ?

Mr. JAENKE. Sure.

Chairman HUMPHREY. Does it in any way jeopardize our capacity to be competitive? I suppose not because we have so much and others have so little.

Mr. JAENKE. We take a beating. The stories of the "Great Grain Robbery" in 1972, the prices that grain sold for earlier in the year because the U.S. marketing system was not able to react fast enough—our Government agencies were not coordinated enough to do it-and some very, very fire sales prices were obtained by the U.S.S.R. and other countries that were dollars out of every American% pocket, not just, farmers' pockets.

Chairman HUMPHREY. Sweden has become an exporter of wheat during this past year, I understand. Have we lost any markets because of the embargo?

Mr. SOTH. No.

Chairman HUMPHREY, We ultimately have not; is that correct?

Dr. TWEETEN. I would disagree with that.

Mr. SOTH. I do not see how we have.

Dr. TWEETEN. We have lost soybean markets. Japan is making a tremendous effort to develop soybean production elsewhere, primarily in Brazil. We have lost corn markets. The Japanese are developing cotton and corn production in Thailand and other places.

Mr. SOTH. We are exporting more than we should anyway.

Dr. TWEETEN. Over a long period of time export embargoes hurt us very badly.

Chairman HUMPHREY. Dr. Cochrane.

Dr. COCHRANE. What embargo are we talking about, the one that was on for 6 weeks or a theoretical one? Japan has been trying to develop alternative sources of corn production for 10 years. The effort to build Brazil into a soybean producer has been going on for 5 years. These actions are not tied to the last embargo on the Soviet Union. Sure, we are going to have competitors.

Chairman HUMPHREY. Was it not tied to the embargo in 1973?

Dr. COCHRANE. It had some effect, sure.

Chairman HUMPHREY. The Japanese have to have soybeans like they have to have oil.

Dr. COCHRANE. The 1973 embargo really did scare them, and it put them in motion. But this last embargo has had almost no effect on anybody, or anything.

Dr. TWEETEN. But the important point here is not necessarily the embargoes but the very threat of embargoes. You do not have to put on an embargo. All you have to do is make it known you are willing to embargo if things appear to be unfavorable.

The Japanese are a little bit more determined. They have been developing literally millions of acres of soybeans in Brazil. Is that not a fact?

Mr. SOTH. Yes, and we ought to encourage them. Our problem is not whether we can sell our export surpluses m competition for the export market. Our problem is to increase total world food production.

Chairman HUMPHREY. I think you can do both, but I do not want to lose a market if we don't have to.

Mr. SOTH. Should we not encourage agricultural development elsewhere in the world?

Chairman HUMPHREY. Yes, very definitely.

Mr. SOTH. Including Brazil.

Chairman HUMPHREY. Yes.

Mr. JAENKE. But not for the reason, Lauren, that they have been tricked and misled by U.S. Government actions a la embargoes. We ought to be encouraging development of food around the world for different reasons than the embargo of soybeans.

Mr. SOTH. I am not in favor of trickery, no. [Laughter.]

Chairman HUMPHREY. I am glad to see that you plowed against that.

Is there anything else that you would like to add? How about any of your associates, Mr. Jaenke ?

Mr. BATES. It has been pretty well covered.

Chairman HUMPHREY. This has been a very informative hearing. Thank you very much.

[The hearing was adjourned at 12:57 p.m. to be reconvened on February 4, 1976.]