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ESTIMATES OF GOVERNMENT INTERVENTION LEVELS IN U.S. PEANUT MARKETS

Bill R. Miller and Carl Mabbs-Zeno

Abstract

Unilateral liberalization of U.S. peanut policy was evaluated using a model of U.S. and world peanut supply and demand. Under the proposed policy, world peanut price would rise slightly to $.20 per pound at the U.S. farm level. U.S. production would decline by 578 million pounds per year and would be offset by imports of 582 million pounds. U.S. net farm income would fall by $405 million per year. Lost income per farm would be $21,000 per year while the average outlay of consumers would decrease by $.84 per person at farm level price. Government expenditures would be virtually unchanged because of the market orientation of current policy.

Key words: trade liberalization, peanut policy, supply, demand, PSE

Both the domestic debate over the 1990 Farm Bill and the international negotiations concerning the General Agreement on Tariffs and Trade (GATT) have focused attention on the effects that would result from reducing government programs that subsidize U.S. agriculture. The Farm Bill considers reducing government participation as a way to improve net welfare and to reduce government costs. The trade negotiations share these motivations, and are also seeking to define and distribute the responsibilities for liberalization among countries. U.S. peanut programs, featuring market quotas, price supports, and import quotas, do not require large transfers from the Federal budget, so they receive little pressure for change on the basis of lightening the taxpayer burden (Carley and Fletcher). Peanut programs of competing nations are under less pressure for reform than are programs of most temperate zone commodities because the major producers, other than the United States, are less developed countries (Table 1).

The GATT has not pressed hard for policy liberalization by the less developed countries in previous negotiations, so the United States cannot expect the current talks to assure liberalization by its competitors in peanut exports. China, the largest producer of peanuts, is not a member of GATT.[1] Still, the United States might undertake unilateral liberalization of its own program as part of a general response. Policy makers might want to balance commitments to peanut production and processing in the face of liberalization in other markets.

Thus, the objective of this study was to estimate how U.S. producers and consumers would be affected by unilateral removal of the U.S. peanut program. The existing U.S. peanut program is described via a set of supply and demand schedules derived from existing measures of elasticities applied to recently observed price and quantity data. Price and revenue flows are the focus of the impact measures. Estimates of the level of government intervention facilitate comparison of the peanut program with policies of other countries and with U.S. programs for other commodities.

STRUCTURE OF U.S. PEANUT PROGRAMS

Passage of the 1977 Farm Bill initiated a marketing policy for peanuts that is unique among U.S. commodity programs. Peanut marketing policy achieves significant price and income support through a policy of market discrimination that is virtually costless to taxpayers when the policy is correctly administered. Often called a two-tier price support, the policy is capable of achieving at least three levels of market discrimination. The policy is often regarded as market-oriented because it seeks to serve each sub-market of the total peanut market at the highest price attainable in that particular sub-market. Thus, in order for the policy to be successful, the sub-markets must be independent, that is, have little inter-

[1] China has applied for membership and currently has observer status in the GATT talks.

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Table 1. Peanut Exports (1,000 Metric Tons)

	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88
United States	228	261	309	337	390	473	329	363
China	305	125	160	160	139	313	235	250
Argentina	74	64	111	121	117	150	215	193
Hong Kong	52	75	56	22	30	55	50	50
Sudan	133	131	70	51	15	11	10	10
South Africa	52	39	5	6	47	21	15	20
India	71	46	35	60	40	15	40	40
Brazil	37	19	13	12	20	12	20	10
Other	190	215	257	193	225	259	248	262
Total	1,142	975	1,016	962	1,023	1,309	1,162	1,198

Source: U. S. Department of Agriculture, Foreign Agricultural Service.

market trade. Tomek and Robinson (1981) refer to these conditions as third degree price discrimination.

At least since 1977 the principal sub-markets for U.S. peanuts, broadly classified as *domestic edible, export edible,* and *domestic oil,* have generally been independent. The flow of U.S. peanuts to these markets is described in Figure 1. Independence is achieved primarily through application of Section 22 of the Agricultural Adjustment Act of 1933 as amended in 1935, and various trading rules of the Farm Bills of 1977, 1981, and 1985. Section 22, approved by the GATT in 1955, prohibits import of peanuts into the U.S. economy except for research and development purposes (1.7 million pounds currently).[2] Most recent Commodity Credit Corporation (CCC) rules prescribe that U.S. peanuts marketed for domestic use in excess of domestic quota shall be subject to a penalty of 140 percent of the quota price support rate. The penalty price is a high level of price discrimination but provides an acceptable marketing alternative in circumstances of short supply. A drought could, for example, push prices to point A in Figure 2.

The cornerstone of market segregation and subsequent price discrimination policy is the quota support price for domestic peanuts. To be successful, this price must be set at a point (say, point B in Figure 2) on the aggregate U.S. farm level demand curve for peanuts corresponding to U.S. edible consumption (peanut butter, confections, and seed) with perhaps a small margin for shortfalls in delivery. Setting this quota too low with respect to the support price will cause a loss of buffer stocks and a subsequent rise in domestic market price above the support level.

The domestic quota limits the amount of peanuts that can be sold in the domestic market at the support price, but places no limits on production. Total production of peanuts adjusts to world conditions. Important CCC rules govern trade and affect the price discovery process. Two of the most important conditions are (1) the deadline, September 15, for peanut buyers to forward contract with farmers, and (2) the CCC minimum resale price for peanuts stocks acquired from farmers who do not sign forward contracts. Peanuts grown in excess of domestic quota are designated as additional peanuts and are normally sold in the export market on contracts signed with farmers prior to September 15. This rule also extends to export products, such as peanut butter, which may be produced in the United States using additional peanuts. Additional peanuts not contracted for sale prior to September 15 must be delivered to the CCC. CCC stocks may be sold for export at a minimum resale price, or they may be sold for unrestricted use in crushing. A little used, but potentially important, rule is that additional peanuts may be bought from the CCC for use in the domestic market. These peanuts, known as buybacks, have the potential to raise domestic consumption above the domestic quota. Farmers receive a share of profits from CCC resale of peanuts but are not liable for losses.

The logic of the buyback relates to the possibility of setting the domestic quota too low. A low domestic quota would pressure domestic prices to rise, reduce export contracts, and increase the likelihood that additionals delivered to CCC might be bought back for domestic use. Dubman and Miller have discussed the negative impact this would have on

[2] The logic for Section 22 was that peanut imports should be prohibited because imports would significantly disrupt the domestic market for peanuts. This argument was the subject of debate during 1990-91 hearings by the International Trade Commission.

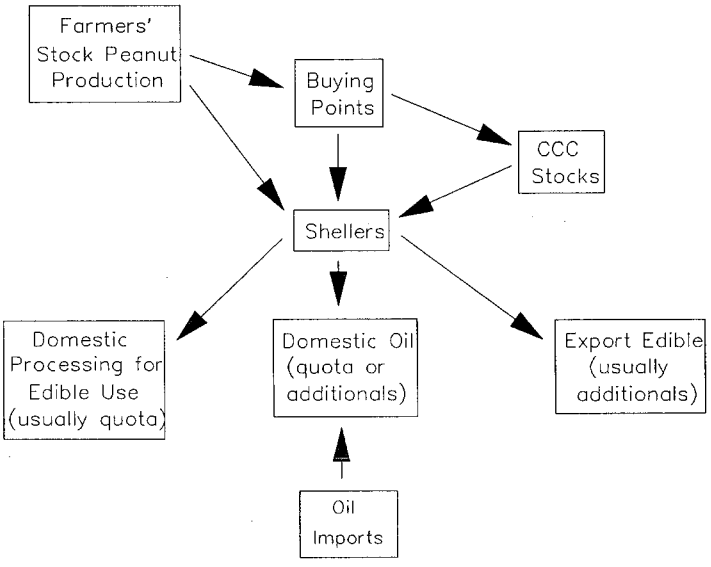
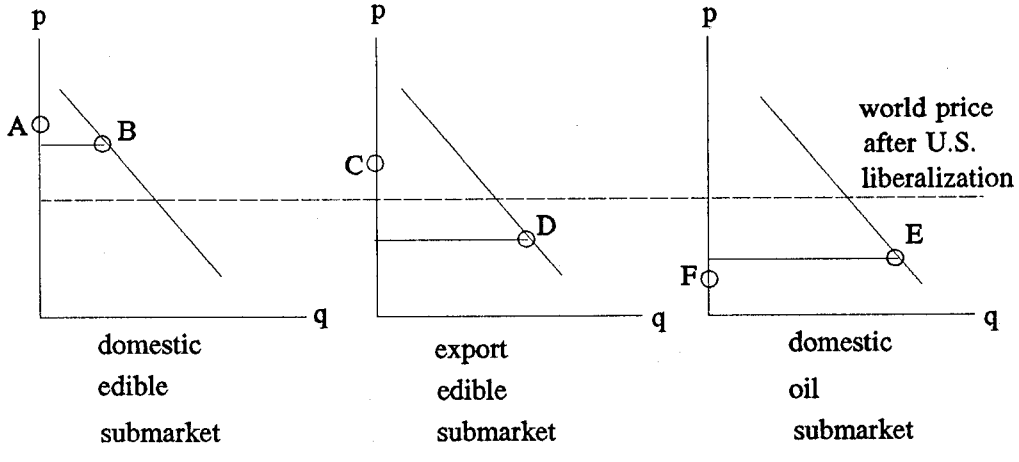


Figure 1. Major Market Channels in the U.S. Peanut Market

Note: A sheller and a buying point may be the same. Other potential channels are highly restricted by import quota, export constraints on dumping peanuts on the world market in the form of oil, constraints on re-importing export peanuts (including penalties), and constraints on the CCC as a competitor enterprise in the marketing channl. Shellers and domestic processors hold inventories, but inventory change is not a major flow in most years.



p = farm price

q = quantity of farmers' stock peanuts

A = penalty price for using non-quota peanuts in U.S. market

B = domestic CCC quota loan price

C = CCC resale price for uncontracted additional peanuts

D = free market world price for contract additional peanuts

E = U.S. and world price for peanut crushing

F = CCC loan price for additional peanuts

Figure 2. Principal Sub-Markets for Farmers' Stock Peanuts in the U.S. Peanut Program

export trade. Buyback for domestic crushing could compete with the export market. A significant increase in domestic consumption using buybacks is evidence that the current level of the domestic quota is too low for efficient operation of the program. The buyback is a virtual litmus test of whether the quota and support price are at the right point (say, B in Figure 2) on the domestic market demand curve.

Domestic price support is carried out primarily through non-recourse, warehouse-storage loans to approved grower associations acting for farmers. Setting the quota and support prices correctly in relation to domestic demand will make it inefficient to deliver domestic peanuts for CCC storage. Shellers will find it efficient to pay farmers the price support or a higher price, depending on scarcity of shelled grades required in sheller forward contracts, to avoid paying interest and carrying charges required to buy peanuts from the loan program. Thus, little or no government costs are expected, and costs have been low in recent years.

Peanut oil can be imported by the United States but the domestic quota that is crushed for oil may not be sold (dumped) on the world market. The result is a dampening effect on the U.S. oil market. This is the major source of losses for the program but one that results in a subsidy for consumers of peanut oil.

The consumer subsidy is small because of relative success in applying market discrimination. Average government costs have been approximately 10 million dollars per year during the past five years. Projected costs in 1988/89 are only one million dollars (Carley and Fletcher). Average U.S. peanut production in the same period approached four billion pounds, resulting in a government cost per thousand pounds of approximately twenty-five cents. Government costs are, thus, not appropriate for measuring the subsidy effects of the U.S. peanut program. A better approach to subsidy measurement is to examine the price gaps occurring between U.S. and world prices resulting from market discrimination.

SUBSIDY EQUIVALENTS FOR U. S. PEANUTS

Producer subsidy equivalents (PSEs) and consumer subsidy equivalents (CSEs) show the change in producer (or consumer) revenue due (or cost) to government actions. Subsidy equivalents may be calculated from two sources: (1) government expenditures, and (2) the price wedge that a policy instrument (or mix of instruments) drives between domestic and external prices (USDA ERS April, 1989). Because the first source plainly yields little information on the effects of peanut policy, the remainder of this report examines the effects of market discrimination on the world market for peanuts.

A PSE price wedge calculated as the difference between the world price and the U.S. price will overestimate the value of the producer subsidy. The United States acts as a price leader in the world market. If U.S. export prices are subsidized they would likely rise if the program were dissolved, thus leading to a rise in world prices. Although the United States produces only about 10 percent of world peanut production, in recent years it has claimed about 35 percent of the market for world exports.[3] Thus, it is not possible to observe an independent world reference price as theoretically required to construct price wedges using the conventional PSE/CSE methodology. PSE and CSE estimates should be made from estimates of the price wedges between observed prices and expected world equilibrium prices in the absence of a U.S. program.

Discriminatory marketing and some representative price levels for 1987 are shown in Figure 2 which describes representative parameters of the U.S. program. In 1987, the penalty for marketing domestic peanuts produced for export contracts would have been $.425 per pound (Point A) based on a national average support level of $.3076 per pound (Point B) for domestic quota. When domestic use exceeds available quota, that is, when the domestic quota (or domestic quota production) lies to the left of point B on the domestic sub-market demand curve, then free market prices prevail. Under these conditions, export contracts might be renegotiated and sold in the domestic market if prices exceed $.425 per pound (Point A, Figure 2). Given a significant shortage of quota, both penalty and domestic quota might sell well above $.425 per pound. Some peanuts at the farm level (farmers' stock) sold at a price above $.50 per pound in 1980 when only about 700,000 tons were available for domestic use. A more likely scenario occurred in 1988 when the domestic quota was 2,808.4 million pounds and production was expected to be nearly 4,000 million pounds. In this case, about 2,544 million pounds of quota were used for food, seed, and related uses at prices near support price (Point B). The remaining 336 million pounds of quota were sold to U.S. crushers in the oil sub-market for $.125 per pound (Point E). Only in an exceptional production year would crushing price fall to

[3] The U.S. share of the high-value confections market is probably much higher although it it difficult to document because most countries do not report confections separately from oil stock. The U.S. share of the world oil market is negligible because of the high quality and scarcity of additional peanuts available to the world market.

$.0745 per pound (Point F) which is the national average support price for additional peanuts. The export and domestic oil sub-markets will remain separate because the United States does not allow dumping of oil from domestic crush on the world market.

Export edible prices are usually established at world prices which are about $.18 per pound (Point D). However, because of the dynamics of export contracting, some peanuts uncontracted before the September 15 deadline and delivered to the CCC may sell at the minimum resale price of $.20 per pound (Point C). Point C should be set above expected world price to avoid delivery to the CCC. Export edible peanuts are usually of a much higher quality than are the relatively small amount of peanuts sold in the world oil market, allowing the world edible and oil markets to operate similarly but at different price levels based on the quality differential. However, because of the contract deadline and uncertainty of production resulting in high yields, the peanut program might force some high quality, uncontracted peanuts to be sold for world crush at the discriminatory lower price (Point E). Thus, in a good production year, it is possible for peanuts of a similar quality to sell at price levels B, C, D, and E, or even F, if yields are exceptionally high. The import constraint (Section 22) and the penalty price (Point A) keep the export edible sub-market independent of U.S. oil and domestic edible trade.

To estimate the world price that results from trade liberalization, the three sub-markets must be aggregated to a single farm level demand (Figure 3). Aggregate demand (horizontal summation of the sub-markets in Figure 2) may then be compared to aggregate U.S. supply response and to world supply and demand as conceptualized in Figure 4.

A MODEL OF THE PEANUT MARKET

The wedge between the world price after U.S. liberalization and the observed U.S. price is illustrated in Figure 4 and later estimated from available elasticities and data describing U.S. and world supply and demand.[4] U.S. prices from discriminatory markets are located on the price axis and a new concept is introduced as the rental value (RV) wedge (Pf to Fp in Figure 4). The RV wedge, as opposed to the PSE wedge, represents the difference between

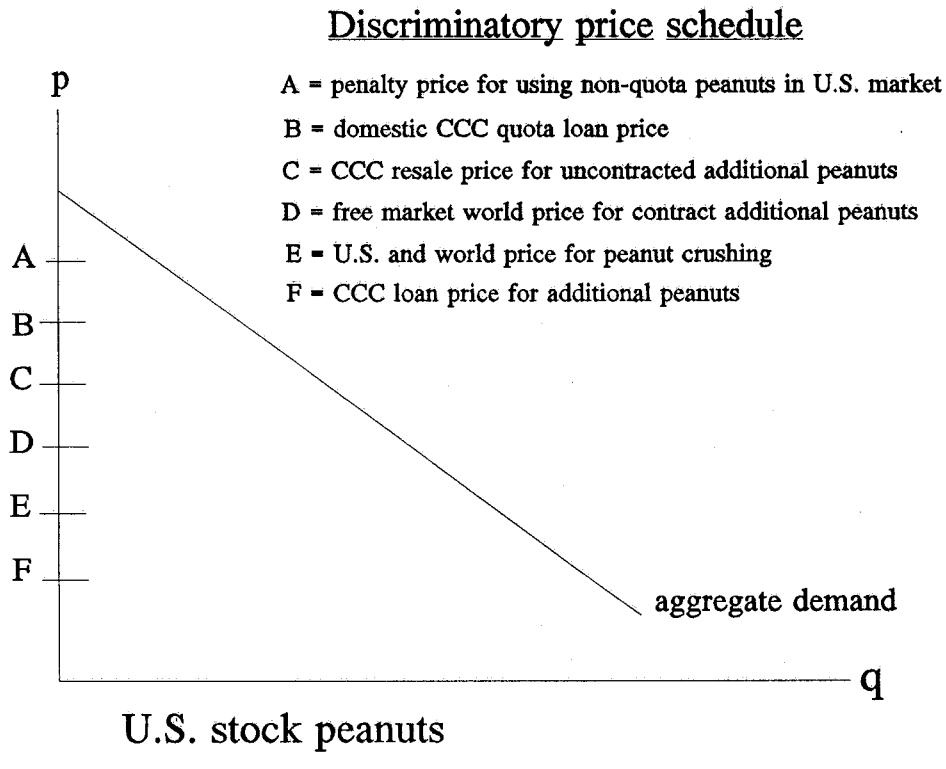


Figure 3. Demand of Farmers' Stock Peanuts

[4] Figure 4 is not drawn to scale as its purpose is to present some testable hypotheses about world trade in peanuts.

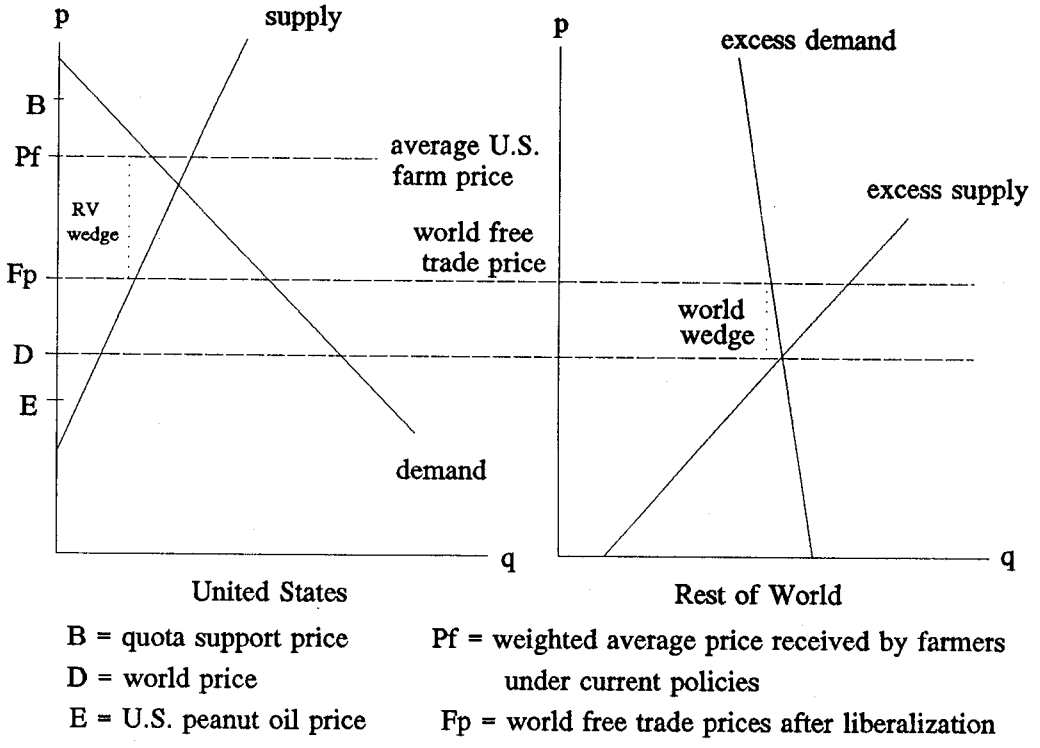


Figure 4. Conceptual Model of Producer Subsidy Equivalent and Rental Value Wedge

the average price received by U.S. farmers and the price they would receive after unilateral trade liberalization, that is, the price that results if Section 22 is abandoned to permit imports into the United States and if the U.S. price support program is abolished.

The RV wedge models the rent foregone between the subsidized price that U.S. farmers receive as a benefit of the program and the resulting free trade price. When based on existing international prices, the PSE wedge (Pf to D) overestimates this rent because the PSE price wedge is the sum of RV and the world wedge. The RV wedge, when computed by a world model, should be within the range of observed prices paid by farmers to rent domestic quota from absentee owners. About 47 percent of quota is rented and provides a significant data base for comparison (Carley and Fletcher).

CSE wedges can also be based on net results of free trade. These are not drawn but are easily measured on the price axes by inserting the principal discriminatory market prices. The distance from point B, Figure 4, to Fp (the price after U.S. liberalization) represents a negative net CSE price wedge paid as an implicit tax by U.S. buyers of domestic quota. The RV price wedge is smaller than the CSE wedge because U.S. farmers must respond to the weighted average of domestic support price and lower prices for additional production. However, buyers of oil using U.S. peanuts are subsidized by the positive net CSE wedge from point E to the free trade price at point Fp. Likewise, the peanut program imposes the world wedge as an implicit tax on farmers and a positive net CSE wedge for rest of world buyers. All prices in the discriminatory markets collapse to price Fp in the absence of a program. The RV wedge, which is the weighted sum of taxes and subsidies, will likewise collapse (average farm price falls to Point Fp) and represents a significant loss of revenue for peanut farmers who own quota. The distribution of revenue losses and gains is described later showing that RV wedge losses are absorbed by a few thousand producers, whereas the implicit net CSE tax on domestic edibles is paid in significantly smaller amounts by each of millions of consumers.

In this model, the rest-of-the-world (ROW) aggregate demand excludes the excess demand serviced by U.S. supply. The United States is not only a price leader, but U.S. quality causes U.S. peanuts to be a differentiated product (USDA FAS). As a result, the U.S. is expected to both import and export peanuts in a liberalized trade market. The United States captures a significant share of current world trade under current market conditions. An expected small increase in export price would likely allow the United States to retain some of this export market while lower consumer prices would attract more

U.S. buyers than would be supplied by the remaining U.S. producers. A significant number of U.S. producers would be expected to fail or produce other products with price Fp prevailing for all U.S. peanut production.

Since Figure 4 is conceptual, quantities traded are not detailed. However, the model indicates that U.S. production would fall, U.S. consumption would rise, ROW production (modeled as very elastic with respect to price) would increase to satisfy increased consumption in the United States, and ROW consumption (modeled as inelastic) would decrease very little. One unknown impact is whether the U.S. supply curve would shift to the right if domestic quota is unrestricted.A significant shift to new producers is not currently expected as there is no observed interest in new production of additional export peanuts, which are currently unrestricted. Ford and Hewitt, for example, have shown that peanuts at current export prices will not compete with soybeans for farm production resources.

This model is essentially a model of unilateral trade liberalization by the United States and it describes the magnitude of the adjustment problem that would accompany unilateral liberalization. Important questions remain on the sources of the ROW excess supply and demand curves facing the U.S. market. Are the levels and elasticities of world excess supply and demand established under discriminatory policy conditions in other countries? Marketing in many countries that compete with the United States features monopoly sales by a central board. How would liberalization of foreign policies affect supply and demand?[5]

STRUCTURE OF A SIMULATION MODEL

Using elasticities, prices, and observed supply and disappearance of the key economic variables described in Figures 1-4, the following equations were specified.

Simulation Model:

(1) U.S. $Q_{ED} = f(P)$

(2) U.S. $Q_{EX} = f(P)$

(3) U.S. $Q_{OL} = f(P)$

(4) U.S. Q_D = U.S. Q_{ED} + U.S. Q_{EX} + U.S. Q_{OL} + others

(5) U.S. $Q_S = f(P)$

(6) Row $Q_d = f(P)$

(7) Row $Q_S = f(P)$ and

(8) U.S. Q_d + Row Q_D = U.S. Q_S + Row Q_S,

where all quantities and prices were expressed at the farm level, and

U.S. Q_{ED} = U.S. consumption of food peanuts (usually quota),

U.S. Q_{EX} = U.S. shipments of export peanuts (usually additional),

U.S. Q_{OL} = the U.S. crush of peanuts,

Row Q_d = world consumption of peanuts not produced in the United States,

Row Q_S = the supply of peanuts not produced in the United States,

Others = seed and loss in U.S. domestic market (480 million pounds),

U.S. Q_d = aggregate demand for peanuts in the United States,

U.S. Q_s = aggregate supply of peanuts in the United States,

P = farm level price of peanuts.

The first three equations specify demand in the submarkets shown in Figures 1 and 2. Equation 4 specifies the aggregate U.S. demand, Figure 3. Equations 5, 6, and 7 represent the U.S. supply and ROW supply and demand schedules shown in Figure 4. Data sources for disappearance, price levels, and required elasticities are presented in Tables 2 and 3.

With respect to demand assumptions, the export demand for U.S. peanuts is retained in U.S. aggregate demand and held separate from world demand. U.S. peanuts are believed to serve a unique, quality-oriented market so that it is likely that the United States would both import and export peanuts in a free market. Imported peanuts would be mixed with U.S. peanuts under quality controlled conditions and significant substitution would be expected. All of the demand elasticities used in the model were estimated in previous studies.

Supply elasticities were not estimated here for peanuts. U.S. supply was assumed to have an elasticity of .55, based on an estimate for soybeans (Table 3) (Sullivan et al). In the peanut production belt, soybeans and peanuts compete for similar land, use similar capital and labor, and may have similar producer responses with respect to a given percentage change in price. The parameters of supply were determined by elasticity and the average weighted price received by farmers in 1987 for production of 3,619 million pounds of peanuts (Table 2). Since the adoption of a quota policy, peanut production has been responsive to price conditions. During the contract period, farmers respond to the weighted average

[5]Research is under way by the senior author and the Economic Research Service, U.S. Department of Agriculture, to answer some of these questions by describing some of the important policy forces at work in competing countries. PSE and CSE estimates have been made for China, India, and Senegal. Eventually, a global analysis of trade liberalization might be possible.

Table 2. Prices and Quantities of Peanuts Supplied and Demanded at the Farm Level, 1987

	United States	Rest of World
	- - - - - - - million pounds - - - - - -	
Supplied:	3,619 (US Q_S)	1,653.3 (Row Q_S)
Demanded:		
Edible (quota)	2,065 (US Q_{ED})	1,653.3 (Row Q_D)
Export (additional)	685 (US Q_{EX})	
Oil (domestic)	594 (US Q_{OL})	
	- - - - - - $ per pound- - - - -	
Prices:		
Edible (quota)	.3076	—
Weighted Farm Price	.277	—
Export (additional)	.180	.18
Oil (domestic)	.140	—

Source: US Q_S, US Q_{ED}, US Q_{OL}, US Q_{EX}, are available in U. S. Department of Agriculture. *Oil Crops: Situations and Outlook Yearbook.* OCS-22, July, 1989. Row Q_S = Q_D are available in U. S. Department of Agriculture. Foreign Agriculture Service. *World Oilseed Situation and Market Highlights.* Price estimates are the authors estimates from sample data collected from unpublished files in the U. S. Department of Agriculture and the Georgia Peanut Association.

price offered for quota and additional peanuts and to the ratio of additional to quota peanuts that may be deliverable on the contract.

World supply was estimated to be extremely elastic, particularly with respect to the possible opening of the U.S. market. During the 1980 drought, 400 million pounds of peanuts were almost instantaneously diverted from world to U.S. markets when the import ban was temporarily lifted. These peanuts, mostly from China, were quickly and easily diverted to the profitable U.S. market. Excess supply elasticity was projected to be 8.3 by the authors based on expert opinion of brokers in the industry (Table 3). The high elasticity of ROW excess supply probably does not represent farm level production response, but represents response of world peanut handlers who are able to select additional high value peanuts from a world supply that is almost 14 times greater than U.S production. Also, in the case of China, the current policy of the state marketing board would probably dictate diversion of peanuts from consumption to export as a means of earning needed foreign exchange.

Table 3. Supply and Demand Elasticities for Peanuts at the Farm Level

	United States		Rest of World	
	Demand	Supply	Demand	Supply
Domestic Edible	-.25[a]	.55[b]	-.38[c]	8.3[d]
Oilseed	-.69[e]			
Export	-.25[f]			

Sources:
[a]Carley and Fletcher, 1989.
[b]Sullivan, et al., 1989.
[c]Author's unpublished estimate.
[d]Author's unpublished estimate.
[e]Sullivan, et al., 1989.
[f]Assumed to be the same as domestic edibles.

MODEL RESULTS

Quantitative results from the model were consistent with the implications of Figure 4. The equilibrium world price with free trade was estimated to be $.1966 per pound at the farm level. Compared to the weighted average farm price of $.277 per pound received in 1987, this implies an RV value of $.0804 per pound. The RV estimate compares with a rental rate of $.067 reported by Carley from a random sample of Georgia peanut farmers in 1984. While the 1987 average rate is not known, rentals of $.09 per pound were commonly observed. Such close correspondence of observed with computed value appears to provide validation of the model as the computed RV is theoretically a description of at least one expected rental rate (the difference between the subsidized price and the supply price at the free trade equilibrium). Equally important to producers, the model shows a decline in U.S. peanut production from 3,619 million pounds in 1987 to 3,041 million pounds with free trade. The loss of 578 million pounds of production and the collapse of the RV represents a farm income loss of $405 million per year (Table 4).

A free-trade price of $.1966 per pound compared to the farm level price of $.18 per pound on the world market would indicate that U.S. exports have been taxed at a rate of $.0166 per pound. All consumers of edible peanuts in the world market have received a similar subsidy, while world producers were implicitly taxed by the same amount. The subsidy for U.S. consumers of peanut oil would be $.0566 per pound for U.S. farmers' stock peanuts used for oil. Since the U.S. oil market for U.S. peanuts has been isolated from that of the rest of the world, this model sheds no light on the potential interdependence of oil and edible (confectionery) markets in world trade. Expansion of the model in that direction would be appropriate.

Table 4. Effects in Major U. S. Markets Resulting from Removing the U. S. Peanut Program

	Farm Level Quantities			Farm Level Values		
	With Policies	Without Policies	Change	With Policies	Without Policies	Change
	---------- million pounds ----------			---------- million pounds ----------		
Imports	2	584	+582	a	114	NA
Production	3,619	3,041	-578	1,003	598	-405
Confection	2,065	2,251	+186	635	443	-192
Oil	594	428	-166	83	84	+1
Exports	685	669	-16	123	132	+9

[a]The farm level value of imports depends on their source which was undetermined for this study.

Free trade would reduce U.S. farmers' peanuts going into the oil market by 166 million pounds (Table 4). About 428 million pounds of peanuts would be crushed, and this use implicitly represents the destination of low quality peanuts. Although quality is not explicit in the model, including the demand of U.S. oil, which normally uses lower quality peanuts, would allow this effect to be reflected in the analysis. In a similar manner, leaving U.S. export demand in the U.S. aggregate demand, rather than as a part of world excess demand, would recognize that U.S. runner peanuts serve a possibly unique segment of world demand and that the United States will probably continue to export near the 1987 level. However, the United States would import at least 584 million pounds to satisfy increased U.S. consumption at lower prices. Although not specified in this model, many imported peanuts might be forecasted to go to the oil market.

U.S. consumption of confectionery peanuts would increase, in the model, by 186 million pounds to 2,251 million pounds, and U.S. exports would remain nearly unchanged, dropping only 16 million pounds to 665 million pounds (Table 4). Inelasticity is expected in ROW excess demand where the model projects a drop in consumption of 58 million pounds as a result of a higher free-trade price.

The RV wedge of $.0804 per pound compares with a weighted average support price received in 1987 of $.277 per pound to yield a PSE of 29 percent. This is considerably higher than the PSE of 8 percent measured for soybeans using standard methods that accept existing international prices as prevalent after U.S. liberalization. Dairy, sugar, and most grain PSEs were significantly higher (40-70 percent), while livestock PSEs were generally lower (7-26). The aggregate PSE for all agricultural commodities in the United States was 33 percent for 1987 (Webb et al.). PSEs for peanuts in other countries, measured by conventional means, indicate a substantial tax in China (71 percent of producer revenue), near zero for India, and a substantial subsidy in Senegal (40 percent) in 1986 (Webb et al.). More recent studies indicate rapid changes taking place in China. A forthcoming study by Miller and Webb will project the peanut subsidy in China.

The net effect of U.S. liberalization on non-U.S. producers and U.S. consumers would be positive, but U.S. producer losses would be much more concentrated than U.S. consumer gains evaluated at farm level prices. Consumer outlays would decrease 192 million dollars for increased consumption of U.S. edible products (Table 4). The average per capita decrease in outlay for 230 million consumers would be $.84 per year in farm-level value. Fewer farmers than consumers would be affected. Based on a population of 19,540 peanut farms in 1987, and a loss of 405 million dollars, the average loss would be about $21,000 per farm per year. These losses would occur mainly in Georgia, North Carolina, and Alabama (Table 5).

Table 5. Number of Peanut Farms by State in 1982 and 1987

STATE	1982	1987
Alabama	3,291	2,655
Georgia	7,973	7,067
Florida	1,201	1,133
Virginia	1,501	1,150
North Carolina	3,809	3,038
Oklahoma	1,290	1,088
Texas	2,412	2,060
Others	1,569	1,339
Total	22,646	19,540

Source: U.S. Department of Commerce, Bureau of the Census, Washington, D.C.

CONCLUSIONS

This study emphasized dollar values of trade flows resulting from unilateral trade liberalization. Changes in trade flow in the peanut oil market would yield practically no benefits to U. S. oil consumers. These consumers are now subsidized by the discriminatory low prices of peanuts for oil. Production and use of peanuts for oil would fall by 166 million pounds (farmers' stock) and prices would rise with liberalization, leaving outlays for farmers' stock about equal to the $83 million under the current policy (Table 4). Likewise, there would be very little dollar impact in the export market. Export prices would rise as U. S. exports fall, and the inelasticity of demand would result in only about $9 million increase in value of farmers' stock peanuts (Table 4).

By far, the most significant impacts would occur in the U.S. domestic market where 582 million pounds of imports are expected to replace 578 million pounds of U.S. production. The expected increase in world price levels would be beneficial to non-U.S. producers, and the consequent fall in U.S. prices would benefit U.S. consumers. U.S. producers losses would be much more concentrated than U.S. consumer gains evaluated at farm level prices. Consumer outlays would decrease 192 million dollars for increased consumption of U.S. edible products (Table 4). The average per capita decrease in outlay for 230 million consumers would be $.84 per year in farm level value. In comparison to consumers, fewer farmers would be affected. Based on a population of 19,540 peanut farms in 1987, and a loss of 405 million dollars, the average loss would be about $21,000 per farm per year. These losses would occur mainly in Georgia, North Carolina, and Alabama. (Table 5).

The major impact would occur in Georgia which had 36 percent of peanut farms in 1987. A continued fall in total farm numbers would likely result. A decrease in resource use (farms) by a country that increases imports (peanuts) is consistent with the theory of comparative advantage. For comparative advantage to succeed, resources released from peanut production are expected to be reemployed in expanded export of some other product. Unilateral liberalization does not provide these opportunities. Thus, there must be sontinued emphasis on negotiations, such as GATT, that insure that multilateral trade flows are enhanced. Perhaps GATT negotiations would be better received if more specific economic analysis of multilateral effects could be provided to negotiators.

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