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An Analysis of
Peanut Price Support Issues

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Contents

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Introduction

> The Agricultural Act of 1949, as amended, set the national average support level for the 1986 crop of national poundage quota peanuts at the 1985 level, with an adjustment for increases in an index of commodity and service prices, interest, taxes, and wages paid by producers during calendar years 1981-85 (Miller 1994).

As a result, quota support level was increased from $559 per ton in 1985 to $607.47 per ton in 1986. Since 1987, the statutory price support level is the average support price equal to the previous year adjusted to reflect any increase in the cost of peanut production, excluding changes in land costs, during the previous two calendar years. Any increase in the price support is limited to no more than 5% from the previous year. By statute authorizing the program through the 1995 crop year, in the event of a decrease in the cost of production, the price support remains unchanged.

The support level for additionals is set to ensure that the Commodity Credit Corporation (CCC) does not incur losses from the sale of additionals. The CCC considers the demand for peanut oil and meal, expected prices of competing vegetable oils and meals, and the demand for peanuts in foreign markets.

There are strong differences of opinion among growers and other segments of the industry regarding the level of the support price for quota peanuts. At peanut meetings conducted in Georgia in 1994, the peanut growers' representative stated "we just don't see lowering farmer stock price as being beneficial to the growers or the industry. We are willing to compromise on price, but not surrender." He did agree with other participants that there should be some mechanism for adjusting the price downward when production costs decrease (Johnson 1994). At the same meetings, a representative of peanut manufacturers stated that "to help the peanut program survive in some form this organization suggests that grower-backed associations support a significant quota price support reduction." A representative of the peanut shellers contended also that lower peanut prices were the best way to get peanut markets back. He suggested a gradual reduction of support prices over a number of years to coincide with the increases in import quotas created as a result of the NAFTA and GATT trade agreements. All three participants supported a continuation of the peanut program, but with various modifications.

The following is a summary of statements presented at the meetings:

1. Peanut consumption has been declining.

2. Peanut products are competing with many lower-priced food options.

3. Prices may not be the reason for declining consumption—changes in eating habits may be the reason.

4. The trade agreements are changing the peanut program because of the loss of protection from imports.

5. There is a negative political climate in which peanut prices may become an issue.

Some questions surfacing at the meetings as well as from other discussions concerning support prices have been:

1. Should the method of determining the price support level for quota peanuts be modified?

2. Will lower price supports result in lower prices to consumers?

3. Will lower price supports increase consumption?

4. What is the anticipated longer-term relationship between the price support and import price levels?

5. How will reducing price supports affect the various sectors of the peanut industry?

In this report, analysis of data and results from previous studies will be used to provide information concerning the peanut price support issue. This Research Bulletin is provided for information purposes so that industry leaders may use it in their decision-making process.

Factors Impacting on the Price Support Program

Pressures have been mounting toward downward adjustment of the price support for quota peanuts. The price support for quota by law through the 1995 marketing year can only be increased, not decreased. The Food Security Act of 1985 included a provision that increased the support price from $559 per ton to $607.47 per ton. Since 1987, the support price has been the price for the previous crop, adjusted for increases in the cost of producing peanuts during the previous two calendar years, excluding any change in the cost of land. The increase is limited to a maximum of 5% from the previous year.

With the price support for quota peanuts based on the increases in the cost of producing peanuts, the price support increased 11.66% from 1986 to 1995, or a modest 1.3% annually. In comparison, the index of prices paid by farmers for commodities and services increased 22.6%, or about 2.8% annually.

With a support price ranging from $643 per ton in 1991 to $675 per ton in 1993, the domestic price of shelled, medium runner peanuts averaged $1416 mt in the same period (Fletcher and Carley 1994). Assuming an annual 1.3% increase in the support price, and in addition at least an annual 0.5% increase in price in the shelling-wholesale trade, the shelled price of medium runners by the year 2000 would be an estimated $1550 mt.

For shelled peanuts entering the U.S. above the GATT minimum excess level at a decreasing support price, because of the decreasing ad valorem tariff, the break-even world price at $1540 mt would be $665 mt by the year 2000 (Fletcher and Carley 1994). The median monthly world price for shelled peanuts during the years 1984 to 1993 was $676 mt, which is in the range of the break-even price indicated for the year 2000.

It is estimated that 96,300 tons of farmers' stock-equivalent peanuts can enter the U.S. in 1995 at the minimum import access levels under GATT. This number can increase to 135,700 tons by the year 2000. These peanuts will enter at world price levels that may be much lower than the domestic price for shelled peanuts, if the current support price program remains intact. This is solid evidence that in the longer term the trade agreements may impact on the support price program for U.S. peanuts. Pressure will continue toward decreasing the support price in contrast to allowing it to go higher. Manufacturers purchasing the imported peanuts will have a competitive price advantage for their peanut products, compared to those purchasing only U.S.-produced peanuts.

The Price Support Level and Returns to Peanut Farmers

The support price for quota peanuts has been increasing almost annually in the 1978 to 1995 marketing years (figure 1 and appendix table 1). While the support price for quota increased, the real support price adjusted for inflation has steadily decreased. Since the 1982–84 base period, the nominal price has increased $128 per ton, but the real price is down about $73 per ton. The support price for additionals decreased $58 per ton during the same period, with the real price down nearly $100 per ton (figure 2 and appendix table 1).

Average prices received by farmers for farmers' stock peanuts have risen in accord with the increases in the quota support price (figure 3 and appendix table 1). The increase has been highly variable, however, as a result of supply-demand relationships changing due to short-crop drought years, changing world market conditions, changes within the price support provisions, and the relative proportion of the production of quota to additional peanuts. Adjusting the average farm price for inflation indicates that in real price terms, peanut farmers received about $90 per ton less in 1992–94 than in 1982–84. In terms of the buying power received from a ton of peanuts, farmers have experienced a reduction.

Price received is only one factor in the equation. The cost of production and the quantity produced per acre are also important parts of the total picture. The USDA continues an annual estimate of the cost of peanuts. Since 1985, the USDA cost of production data indicates an increasing cost of producing peanuts in the United States (figure 4 and appendix table 2). Because of yield variation, costs per ton have been more variable than costs per acre.

Costs of production in the early 1990s averaged about $100 per acre higher than in the mid-1980s (figure 5). The gross value of peanuts increased in line with production costs, though with more variation. When taking yield variation into

account, both gross value and production costs have been quite variable but increasing in line with one another (figure 6).

Net residual returns to peanut quota, risk, and management have generally ranged from $100 to $150 per acre or per ton, with per acre returns somewhat higher (figure 7). When yields were low in 1983 and 1993, returns were substantially reduced. Returns were low in 1991 as a result of increased production of additionals and lower average prices. A farmer selling mostly quota peanuts, and receiving at least the support price for quota peanuts, would have had higher returns in most years than returns from receiving the average price for all peanuts. Each farmer has returns relative to the proportion of quota and additional peanuts that he/she sells and to production cost structure.

Peanut returns were deflated by the Gross Domestic Product (GDP) implicit price deflator to adjust for inflation. The results indicate a generally decreasing return from the early 1980s into the 1990s (figure 8). This indicates that yield and prices received over the 1980–93 period have not increased enough in relationship to the cost of production to offset the effects of inflationary pressures on net returns per acre.

The relationship of prices received and yield per acre indicates that prices increased just enough to offset decreases in yield to maintain gross returns per acre barely above the 1982–84 base year level (table 1). Costs per ton were higher than the 1982–84 base years in every year except 1985, and quite variable. The annual cost per acre, however, was fairly stable and averaged somewhat below the 1982–84 base until the 1990s when costs increased above the base years. A measure of variability, the coefficient of variation, shows that costs per ton were more variable than costs per acre (appendix table 2).

Residual returns per acre have been quite variable. Positive returns have ranged from 32% of the 1982–84 base year in 1993 to 167% of the base year in 1986. To determine the relationship of net returns per acre to yield, price received, and cost of production, the following estimate was obtained:

net return per acre = 3.013 + .025 (yield) + .877 (price) - .924 (cost)
                                    (5.395)   (.036)   (.077)   (.141)

R^2 = .972

where

       net returns per acre = in nominal dollars,
       yield = pounds per acre,
       price = dollars per ton, and
       cost = dollars per ton.

Yield was not a significant variable in explaining annual net returns per acre. Both price and cost were significant variables, however. The relationship indicated that one dollar per ton change in the price received resulted in a change in net returns of $.88 per ton, while one dollar change in the cost of production resulted in a change in net returns of $.92 per ton in the opposite direction.

The degree of risk associated with producing peanuts is indicated by the high variability in the residual returns. Returns per acre ranged from $51 in 1993 to $183 in 1986. Residual returns per ton of peanuts varied even more. The measure of variability (CV) of 33.4% for residual returns per acre and per ton indicated the high variability, and thus was an indicator of risk in producing peanuts.

If the goal of the price support program for peanuts has been to maintain positive net returns per unit of production, then the program has been mostly successful. In some low-yield years net returns varied from the trend line, but in general returns have been positive, though highly variable.

Modifications in Determining Price Supports

Several scenarios are shown for adjusting the price support for quota peanuts, compared with the current method used. These scenarios include 1) using the index of the annual average of prices paid by farmers for commodities and services, interest, taxes, and wage rates, 2) allowing the support price to decrease as well as increase, 3) using a moving average of price changes, and 4) using a method that combines both changes in the cost of production and changes in the Consumer Price Index (CPI).

Since the index of prices paid by farmers was used to adjust initially the 1986 support price for quota, the index was applied to the years since 1986 to determine the support price that would have resulted from using it. Beginning in 1989 the price support based on the index would have been higher than the actual support price (table 2). By the 1995 crop year, the price support would have been $741 per ton or $63 per ton higher than the actual 1995 support price.

As shown in table 3, the index of prices paid includes the Consumer Price Index (CPI) as one of the determinants. The CPI makes up one-third of the weight in the index. The relative importance of the various production inputs are shown for the prices paid index and the cost of production for peanuts used in the current support price determination. There are some major differences in the two indexes. The prices paid index shows the changes on a whole-farm basis, including the cost of goods and services purchased for farm family living, the CPI.

Table 4 shows an example of including the CPI with the peanut cost of production as a determinant of the support price. A weight of .333 was applied to the change in the CPI and a weight of .667 to the cost of production factors. Including the CPI as a price mover would have led to a higher support price than the current price support using the USDA cost change forecast method. For example, in 1995 the actual support price was $678.36 per ton, compared with $702.28 if the CPI had been used. Thus, the CPI, if used, would have a substantial influence on the level of the price support.

Adjustments in the support price, when the cost of production decreases as well as increases, would have substantial influence on the price support level. Beginning in 1982, with no limits on the decrease or increase in the cost of production (COP), the price support for quota would have been $619 per ton in

1995, compared to the actual $678 (table 5). Limiting the decrease or increase to 5% would have resulted in a support price of $609 per ton in 1995. Prior to 1992, the 5% limit would have resulted in a higher price than with no limits.

A large increase in the cost of peanut seeds in 1991 resulted in a large increase in the support price in 1992 of $32.14 per ton, the 5% limit increase. In order to smooth out such changes in the cost of production effect on the support price, a three-year moving average support price was constructed. Based on the current method of determining the support price, with only increases in the COP allowed, the support price in 1995 would have been $677 per ton. The support price based on a three-year moving average with upward and downward adjustments with no limits would have been $606 per ton in 1995. Allowing the support only to increase resulted in a higher support price than if adjustments had been made for decreases in the cost of production. That difference is in the range of $60 to $70 per ton.

Impact of Support Price Modifications on the Peanut Industry

Based on information regarding the NAFTA and GATT provisions allowing a limited quantity of peanuts and peanut butter to be imported into the U.S. at world price levels, and in the longer term a decreasing tariff that could bring world price plus tariffs down toward the quota support price, it may be important to modify the support price level for quota peanuts. Allowing the support price to decrease as well as increase with changes in the cost of production may be one modification. Decreasing the support price to a level of about $618 per ton (the amount it would have been with decreasing and increasing changes in the cost of production) may be another modification. In the new farm bill, support has been set at $610 per ton for the next seven years, beginning with the 1996 crop.

Returns to Peanut Farmers

Modifications in the support price would have an impact both on peanut farmers and on manufacturers of peanut products. Table 6 shows the estimated residual returns to peanut quota, risk, and management for quota peanuts resulting from various support price modifications. A three-year moving average of the support price under the current method resulted in returns almost the same as using the current support price. Adjusting the support price a maximum of 5% up or down would have decreased the estimated returns on the average about $58 per ton annually.

Except for the low 1990 yield year, residual returns were more than $100 per ton annually. Since 1986, the USDA has been including the cost of poundage quota, whether owned or rented, in the economic cost analysis. It is based on cash rental rates reported paid by peanut producers. The quota cost ranged from $88 to $119 per ton in the 1986 to 1992 period. Under the current price support program, subtracting the quota cost from the residual returns resulted in positive net returns for quota peanuts, except in 1990. With the plus and minus

adjustment procedure, there may have been negative returns in 1990, 1991, and 1993. With lower support prices, however, the rental rates probably would have been lower, since farmers would probably adjust to lower prices and returns. This may decrease the quota cost, which would offset the lower price, so that those renting quota may have no change in returns. For quota owners who rent quota out, a lower income would be the result. For those quota owners who produce their quota, the lower price would decrease their returns.

From the point of view of a peanut farmer, reduction in quota may be a more acceptable option than a decrease in the support price. It has been shown that the decrease in the use of domestically produced peanuts plus the expected increase in imports results in the need for a peanut quota of about one million tons or less in 1996, or a decrease of about 20% from the current 1,350,000 tons (Carley and Fletcher 1994). Along with other program adjustments, quota reduction could minimize or eliminate government outlays. Since quota support prices have been allowed to increase only, an option in the first year of the new program may be to decrease the support to the level it would have been if the support price had decreased as well as increased as cost of production moved down or up. Actually, the support price was set at $68 per ton lower than the 1995 support price, or $610 per ton.

Using 100 tons of FSP quota as an example, estimates of the results to a farm situation were made of reducing the support price, reducing the quota, or reducing both price and quota (table 7). Reducing quota 20% with no change in prices, and assuming quota would not be reduced further because of price and/or imports, the net returns from peanut production would be reduced about $5,040 from the current (1990/95) program. The peanut farmer would have 23 acres of land that could be planted with another crop, which ,if profitable, could decrease the loss.

Reducing the quota price to $610 per ton, but not reducing the quota, resulted in a decrease in net returns of about $7,200. By not reducing the quota, however, there may be an excess of quota which would end up in a government loan at a cost to the government. Under a no-net-cost scenario, a producer assessment may be necessary to offset the government loss, which would further reduce net to the farmer. The lower price of nearly 10%, however, may result in a 3% increase in domestic use which would increase quota use and reduce government costs as well as farmer assessments.

The final estimate was made with a 20% reduction in quota and a reduction in quota support to $610 per ton. Estimated net returns for peanuts to a farmer would be reduced about $10,150, compared to the current program. If there was a positive response in demand to the price decrease, some additionals may be sold as buybacks at support price. Also, the extra land not in peanut production may be planted with another crop, resulting in a possible net income to offset the peanut loss.

Returns to Quota Owners and Local Communities

Modifying the quota price support and/or the quantity of quota would affect returns to quota owners as well as affect local communities. It was estimated that

the gross returns of peanut quota of 1,350,000 tons under the current program was about $945 mil, resulting in a net return of $338 million to quota, management, and risk (table 8). An estimated $567 mil is used to purchase the goods and services to produce peanuts in the United States, including a return to land and unpaid (family) labor. The remaining net return is an income to quota owners.

The estimated average net return of peanut quota, management, and risk was $325 per acre. The present value of $325 over five years discounted at eight percent would be $1,298 per acre. The difference between the land value with and without peanut quota would be the value that quota contributes to the land value. This difference would vary among the areas in which peanuts are produced.

Reducing the quota by 20 percent would decrease gross returns to $756 million and net returns to $270 million. About 100 million fewer dollars would flow to the agribusiness sector for the purchase of goods and services as well as 68 million dollars less directly to quota owners. Also, first buyers of peanuts would purchase 270,000 tons fewer peanuts. Discounted land values, caused by reduced quota and fewer acres of peanuts, would decrease by $260 per acre.

A reduction in price supports to $610 per ton would decrease gross and net returns about $97 million from that of the current program. The discounted land value would decrease to $926/acre. Both a 20% quota reduction and a support price reduction of $68 per ton would reduce gross returns an estimated $267 million and net returns about $146 million. The reduction in net returns per acre of peanut quota would result in a discounted value of land of $738 per acre, or more than $500 per acre less than compared with the current program.

In terms of income flow to local communities, the reduction of both quota and price would decrease the income for the purchases of goods and services for peanut production about $250 million and direct income to quota owners by $146 million. This totals more than $396 million. In addition, there would be the reduction in land value. Land value reductions in the longer term would become reflected in a decreasing real estate tax base in rural areas. Also, the decrease in nearly 200,000 fewer acres of peanuts and 270,000 fewer tons of peanuts would decrease the labor force needed to produce and process peanuts.

Price and Peanut Use Relationships

Decreasing the support price for quota peanuts has provoked considerable discussion among all sectors of the peanut industry. Essentially, two viewpoints are at issue. Lower support prices decrease income to peanut farmers, so they have not been agreeable to lower prices. Peanut product manufacturers claim that lower peanut prices will allow them to better promote/advertise peanut products and/or lower product prices, both of which may increase consumption.

Several studies of price and use relationships may offer some insight into the price effect issue (Carley, Fletcher, and Zhang). The average cost of one pound of peanut kernels based on the current support price has been estimated at $.66

(table 9). With a decrease in the support price to $610 per ton, the estimated kernel cost would decrease to $.603. A support price of $500 per ton would decrease kernel cost to an estimated $.507 per lb.

The cost of the farmers' stock peanuts in an 18 oz jar of peanut butter at a support price of $678 per ton was estimated at about $.62 (table 10). At a support price of $610 the cost would decrease to $.552, and at $500 the cost would decrease to $.453. The estimated shelled peanut cost to manufacturers would be $.74 at $678 per ton support price, $.67 at $610 per ton, and $.57 at $500 per ton. With a decrease of 9.2% in the manufacturers cost ($.74 to $.67), the change in the use of peanuts in peanut butter is estimated to increase 2.0%. At the lower support price, peanut butter use was estimated to increase about 5%. Therefore, for a decrease greater than 25% in the support price, use of peanuts in peanut butter is expected to increase only 5%. If all the decrease in the cost of peanuts in an 18 oz of peanut butter were passed on to the consumer, the $68 per ton decrease in the support price would amount to a retail price decrease of seven cents a jar. Even at the support price of $500 per ton, the price of a jar of peanut butter would decrease only 17 cents. An analysis of the price transmission issue, however, has shown that only about 60% of the decrease in the cost of peanuts in peanut butter would be passed on to consumers (Zhang, Fletcher, and Carley 1995). Therefore, the decrease in the price of a jar of peanut butter would be an estimated four cents for a decrease in the support price of $68 per ton and 10 cents with a support price decrease to $500 per ton. This analysis of the impact of decreases in the support price for peanuts indicates that peanut farms would have a substantial decrease in net income even though peanut use would increase. The percent decrease in price is greater than the percent increase in use. Manufacturers would benefit from the price decrease because the kernel price could be lower and more peanut butter may be sold at the lower prices.

Summary

Strong differences of opinion have been expressed among the various segments of the peanut industry concerning the level of the price support for quota peanuts. Under the current statute (1990/1995), the price support for quota peanuts is adjusted to reflect any increase in the cost of peanut production to a maximum of 5% from the previous year. The support price cannot be decreased.

From 1986 to 1995, the quota price support increased a modest 1.3% annually, compared to a 2.8% annual increase in the index of prices by farmers for production items, goods, and services. Adjusted for inflation, the real price in 1994 was down $73 per ton from 1982–84. Even with price supports, the degree of risk associated with producing peanuts has been high. From 1981 to 1993, USDA data indicate a range of returns from $42 per acre in 1983 to $183 per acre in 1986.

If the current statute for determining price supports remains until the year 2000, the price support may increase to $725 per ton. At that price level the break-even world price for peanuts plus the tariff could be close to the expected

shelled peanut price for domestic peanuts. Thus, the trade agreements would impact on the price support program for peanuts.

It has been suggested that the quota price support be allowed to decrease as well as increase with changes in the cost of production. If the support price had been allowed to decrease and increase since 1986 within a 5% limit, the price support in 1995 using the USDA option A would be $609 per ton instead of $678 per ton. If the price had moved both ways in the 1982 to 1993 marketing years, the estimated returns to quota, risk, and management for a ton of quota peanuts would have averaged $110 per ton, which is a return $65 per ton lower than under the 1982 to 1993 price supports.

Based on the USDA cost of production data, a $68 per ton decrease in the quota support price would reduce net returns to U.S. peanut farmers by more than $95 million. In the longer term, the lower price could reduce land values by an estimated $300 per acre or more. Reductions in quota could reduce peanut land value another $240 per acre.

The cost of farmers' stock peanuts in an 18 oz jar of peanut butter, at the support price of $678 per ton, was an estimated $.62. Reducing the support price to $610 per ton would reduce the cost of peanuts to $.52 and at $500 per ton the cost of peanuts would decrease to $.45. At the lower support price of $500 per ton, peanut butter use may increase about 5%.

At the support price of $500 per ton, the estimated retail price of a jar of peanut butter would decrease $.17, if all the cost reduction in peanuts were passed on to consumers. It is estimated, however, that about 60% of the price decrease is transmitted to the retail price. Thus, the decrease in the retail price may be about $.10, instead of $.17.

The decrease in the support price would result in a substantial decrease in net income to peanut farmers, even though peanut use may increase. Manufacturers could benefit from a price decrease because more peanut products probably would be sold at lower prices. In the longer term, the peanut industry is facing a serious dilemma in making decisions with regard to the support price.

References

Abel, Daft, and Earley. 1994. Overdue for reform, policy alternatives for the U.S. peanut program. Alexandria, VA.

Carley, D. H., and S. M. Fletcher. 1994. Analysis of a no-net cost provision for the peanut program. Univ. of Ga. Coll. of Agr. & Envir. Sci., Dept. Agr. & Applied Econ. FS–94–12.

Carley, D. H., S. M. Fletcher, and P. Zhang. Estimated change in peanut butter prices resulting from changes in the support price for farmers' stock peanuts. Univ. of Ga. Coll. of Agr. & Envir. Sci., Dept. Agr. & Applied Econ. (manuscript in review process).

Fletcher, S. M., and D. H. Carley. 1994. GATT—What does it mean to the U.S. peanut industry? Univ. of Ga. Coll. of Agr. & Envir. Sci., Dept. Agr. & Applied Econ. FS–94–01.

Fletcher, S. M., P. Zhang, and D. H. Carley. 1994. Potential impact on peanut farmers and food manufacturers from changes in peanut prices. Univ. of Ga. Coll. of Agr. & Envir. Sci., Dept. Agr. & Applied Econ. FS–94–09.

Johnson, B. 1994. "Lower price support--A hot issue," in the *Peanut Grower*. 6:6; 9–12.

Miller, R. H. 1994. "Impact of critical statutory provisions in the peanut program costs," from remarks given at the American Peanut and Research Society meeting in Tulsa, OK. Miller is Director, Tobacco and Peanuts Analysis Division, CFSA, USDA, Washington, DC.

Zhang, P., S. M. Fletcher, and D. H. Carley. 1995. Peanut price asymmetry in peanut butter. *Agribusiness: An International Journal* 11(1): 13–20.

dollars per ton
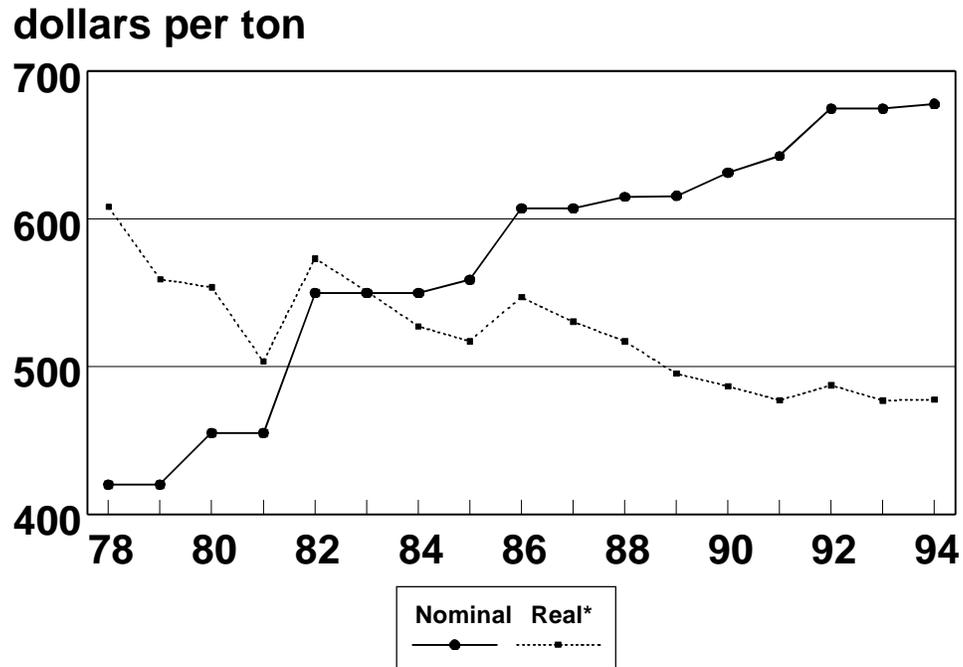
*Prices deflated by the GDP implicit price deflater, 1982-84=100

Figure 1.   Support Price for Quota Peanuts, Nominal and Real,
             United States, Marketing Years 1978 to 1994.

dollars per ton
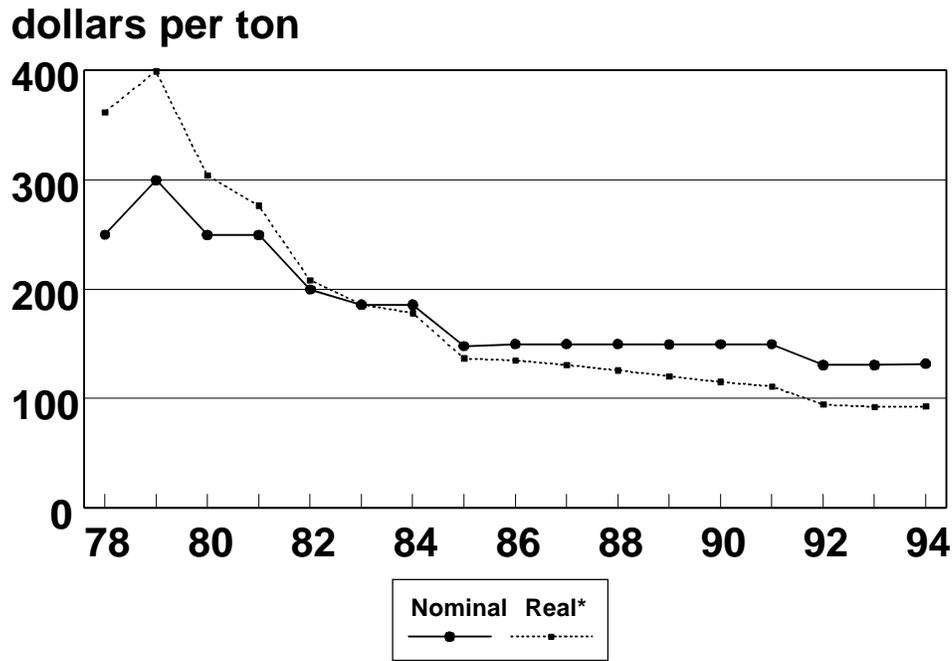
*Prices deflated by the GDP implicit price deflater, 1982-84=100

Figure 2. Support Price for Additional Peanuts, Nominal and Real, United States, Marketing Years 1978 to 1994.

dollars per ton
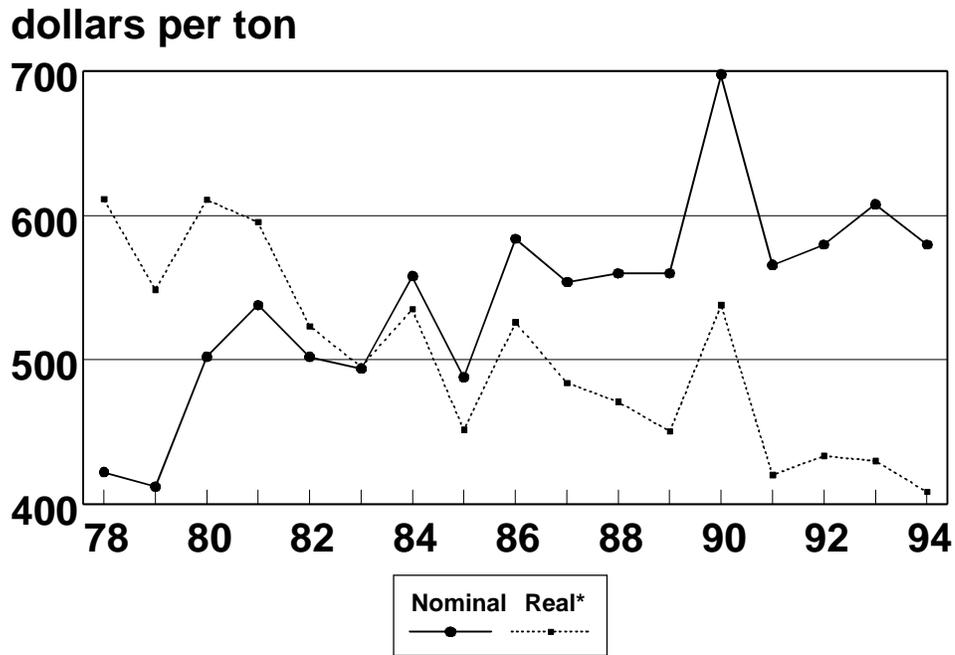
*Prices deflated by the GDP implicit price deflater, 1982-84=100

**Figure 3.   Average Price Received for Peanuts, Nominal and Real,
United States, Marketing Years 1978 to 1994.**

Index 1982-84=100
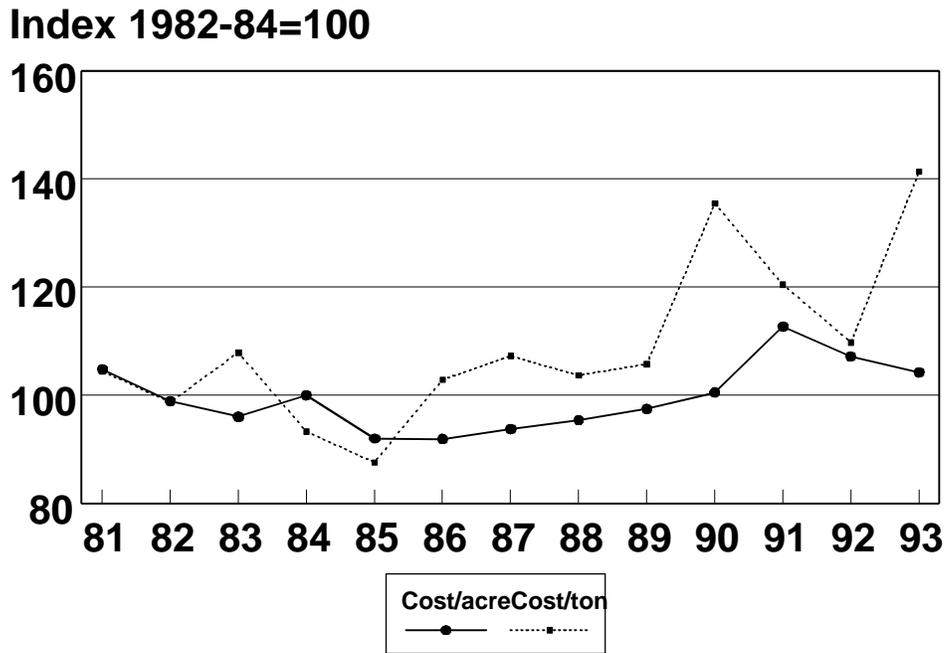
Source: ASCS, TPAD, August 1994

Figure 4.   Indexes of Cost of Peanut Production Per Acre and Per Ton, United States, 1981 to 1993.

Dollars/acre
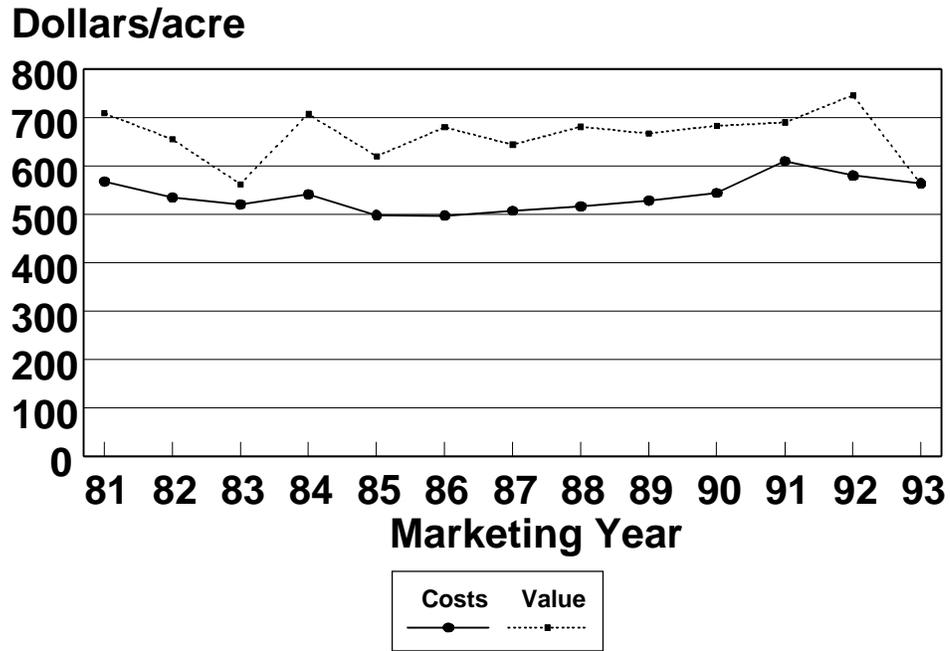
Source: ASCS, TPAD, August 1994

**Figure 5.   Peanut Production Costs and Gross Value Per Acre, United
               States, 1981 to 1993.**

Dollars
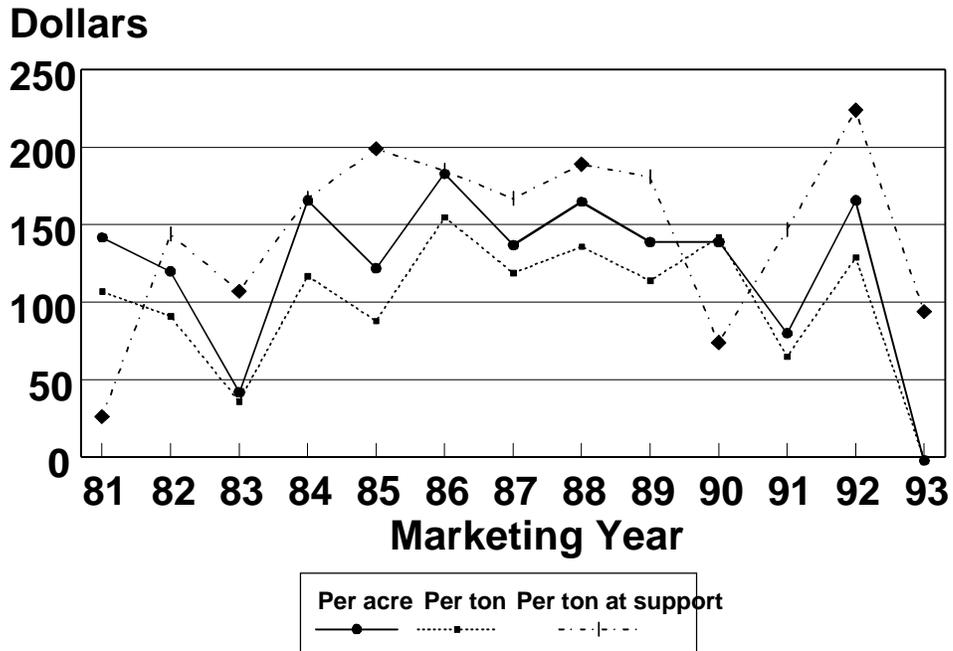
Source: ASCS, TPAD, August 1994

Figure 7.   Peanut Returns Per Acre and Per Ton at Average Prices and Per Ton at Support Prices, United States, 1981 to 1993.
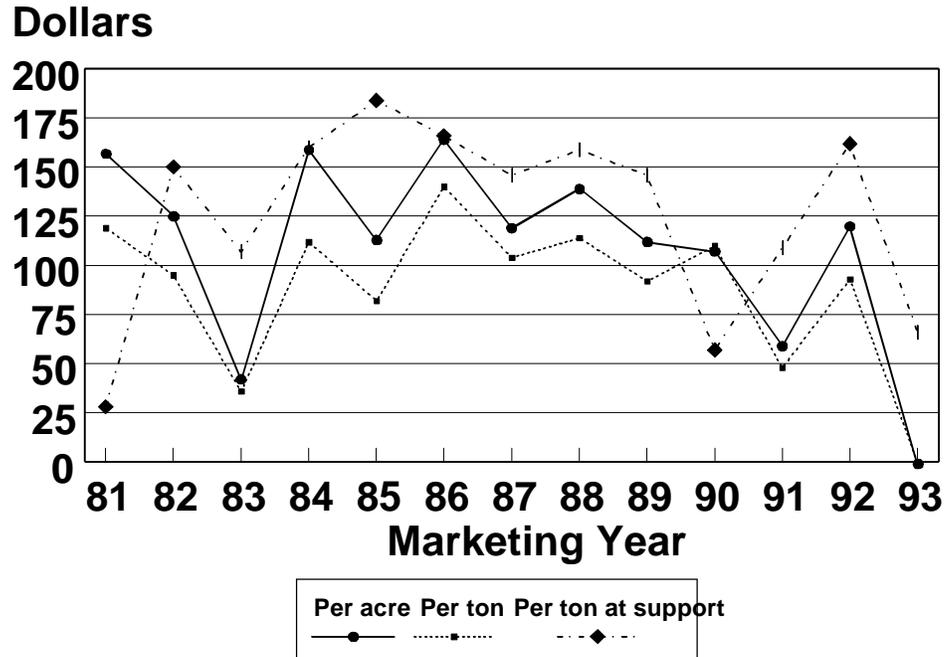
Dollars

Source: ASCS, TPAD, August 1994

Figure 8.   Peanut Returns Per Acre and Per Ton, United States, 1981 to 1993 Deflated to Constant 1982/84 Dollars.

Table 1. Relationship of Average Prices Received for Peanuts, Yield Per Acre, and Cost of Production Per Acre and Per Ton to Net Returns Per Acre, and Per Ton

Marketing year beginning Aug 1	Price/ ton	Yield/ acre	Gross returns/ acre	Cost/ acre	Net returns/ acre	Cost/ ton	Net returns/ ton
	Index 1982–1984 = 100						
1981	109.1	101.5	110.6	104.8	129.9	104.5	132.4
1982	101.0	101.3	102.2	98.9	110.1	98.7	112.5
1983	97.4	90.1	87.7	96.1	38.3	107.9	44.0
1984	101.7	108.5	110.2	100.0	151.6	93.3	144.7
1985	91.1	106.3	96.8	92.0	112.2	87.6	109.2
1986	117.5	90.3	106.0	91.9	167.1	102.9	191.4
1987	113.7	88.4	100.4	93.7	125.1	107.3	146.5
1988	114.2	93.1	106.2	95.4	150.7	103.7	167.6
1989	111.7	93.3	104.1	97.5	127.8	105.8	141.8
1990	142.1	75.0	106.5	100.5	127.2	135.5	175.6
1991	113.9	94.6	107.6	112.7	73.1	120.5	80.0
1992	117.9	98.8	116.4	107.2	151.9	109.8	159.1
1993	118.0	74.4	87.7	104.2	-1.8	141.4	-0.7

Source: Appendix tables 1 and 2.

Table 2. Estimated Support Price Based on Change in Index of Prices Paid by Farmers Compared with Actual Price Support, 1985 to 1995

Marketing year beginning Aug 1	Index of prices paid[a]	Change from previous two years	Support price based on index change	Actual support price
	1977= 100	Prev. yr. = 100	$/ton	$/ton
1981	150	-	-	455.00
1985	163	-	-	559.00
1986	159	1.0867[b]	607.47	607.47
1987	162	.9755	592.56[c]	607.47
1988	170	1.0189	603.76	615.27
1989	177	1.0494	633.59	615.87
1990	183	1.0412	659.69	631.47
1991	187	1.0339	682.05	642.79
1992	189	1.0219	696.99	674.93
1993	195	1.0107	704.01	674.93
1994	199	1.0317	726.32	678.36
1995		1.0205	741.21	678.36

Source: U.S. Dept. of Agriculture. Agricultural Prices, Annual Summaries and January 1994. NASS, Washington, DC.
a.   Annual averages of prices paid by farmers for commodities and services, interest, taxes, and wage rates.
b.   1985 index divided by 1981 index, etc.
c.   Previous year support price multiplied by change in prices paid index.

Table 3. Relative Importance of Items for Index of Prices Paid by Farmers, All U.S. Farms and Peanut Farms

Item	Relative importance all U.S. farmers[a]	Relative importance peanut farms[b]	Relative importance peanut farms w/CPI
	percent		
Consumer Price Index (CPI)	32.9		33.0
Production			
Feed	8.1		
Livestock	9.0		
Seed	1.8	12.6	8.4
Fertilizer, lime, etc.	3.6	7.8	5.2
Chemicals	1.3	14.5	9.7
Fuels and energy	4.2	6.5	4.4
Farm and motor supplies	1.7	5.4	3.6
Autos and trucks	3.5		
Tractors & self-propelled mach.	5.9	9.3[d]	6.3
Other farm machinery	3.9		
Buildings & fencing	3.1		
Farm services	4.1	5.4	3.6
Cash rent	2.5[e]	13.4[e]	9.0
Interest	5.2	8.2	5.5
Taxes & insurance	3.5	2.7	1.8
Wage rates	5.5	14.2[f]	9.5
Total[c]	100.0	100.0	100.0

a. U.S. Dept. of Agr. 1991. Agricultural Prices, annual summary. NASS, June.
b. U.S. Dept. of Agr. 1994. Economic Indicators of the Farm Sector. Costs of Production Major Field Crops and Livestock & Dairy, RES, ECIF 11-3.
c. May not add to 100 because of rounding error.
d. Based on capital replacement as an estimated cost for machinery and equipment.
e. Land only. For peanuts it is the composite share and cash rental rate.
f. Based on hired and unpaid labor costs.

Table 4. Estimated Peanut Quota Support Prices Based on Changes in the Consumer Price Index and Cost of Peanut Production

Marketing year beginning Aug. 1	Changes in Consumer Price Index[a]	USDA cost change forecast[b]	Estimated support price	
			Based on USDA forecast and CPI[c]	Actual Support Price
	percent	dol/ton	dol/ton	
1987	1.85	-19.77	598.03	607.41
1988	3.64	7.80	610.48	615.27
1989	4.13	.60	619.27	615.87
1990	4.81	15.60	639.60	631.47
1991	5.40	11.32	659.65	642.79
1992	4.20	48.33	700.10	674.93
1993	3.01	-26.85	689.21	674.93
1994	3.00	3.43	698.38	678.36
1995	2.56	-3.07	702.28	678.36
1995	2.56	17.79[d]	720.14	696.15[d]

a. The change in the previous two years. For example, the CPI and the cost of production for marketing year 1987 are based on the change in 1986 compared with 1985.
b. The cost change forecasts used in determining current support prices.
c. Based on current cost change forecast by the following: support price = (change in CPI * .333 * prev. year support price) + (change in COP * .667) + prev. year support price.
d. Reflects what the support price would have been if the traditional method had been used by CFSA, USDA to calculate support rates.

Table 5. Peanut Quota Support Price Based on Various Alternatives

Marketing year beginning Aug. 1	Quota support price[a]	Support price with plus or minus cost adjustments with no limits[b]	Support price with plus or minus cost adjustments limited to 5%	Quota support based on 3-year moving average	Support price 3-year moving average with plus or minus adjustments[c]
			dollars/ton		
1982	550.00	550.00	550.00	550.00	550.00
1983	550.00	513.70	522.50	550.00	531.85
1984	550.00	503.20	512.00	550.00	522.30
1985	559.00	512.20	521.00	553.00	509.70
1986	607.47	560.67	569.47	572.16	525.36
1987	607.47	540.90	549.70	591.31	537.92
1988	615.27	548.70	557.50	610.07	550.09
1989	615.87	549.30	558.10	612.87	546.30
1990	631.47	564.90	573.70	620.87	554.30
1991	642.79	576.22	585.02	630.04	563.47
1992	674.93	624.55	614.27	649.73	588.56
1993	674.93	597.70	587.42	664.22	599.49
1994	678.36	601.13	590.85	676.07	607.79
1995	678.36	618.92[d]	608.64[d]	677.22	605.92

a. Based on P.L. 97–98 for 1982–85; P.L. 99–198 for 1986–90; P.L. 101–624 for 1991–95 crops.
b. Data on cost changes from USDA, ASCS, TPAD.
c. Adjustments with no limits.
d. Using Option A of the USDA cost of production estimated change, which was the method used in prior years. Under Option B the support price would have been $3.07 lower than in 1994.

Table 6. Cost of Production of Peanuts and Estimated Returns to Farmers Based on Quota Support Price Alternatives, United States, 1982 to 1993

Marketing year beginning Aug. 1	Cost per ton[b]	Estimated returns per ton based on[a]			
		Current support price	3-year moving avg. of current support price	Support price with + or - cost adj.[c]	3-year moving avg. support with + or - adj.[d]
		dollars			
1982	406	144	144	144	144
1983	443	107	107	80	89
1984	383	167	167	129	39
1985	360	199	193	161	150
1986	423	184	149	146	102
1987	440	167	151	110	98
1988	426	189	184	131	124
1989	435	181	178	123	111
1990	557	74	64	17	-3
1991	495	148	135	90	68
1992	451	224	199	163	138
1993	557	118	107	30	42

Source: Table 5 and appendix table 2.

a. Residual returns to peanut quota, risk, and management.
b. Includes variable and fixed cash costs, capital replacement, unpaid labor, and land costs.
c. Adjustments limited to 5% either direction.
d. No limit on adjustments in support prices.

Table 7. Example of Estimated Net Returns as a Result of Reducing the Quota and Quota Price Support

Scenario	Tons	Acres[a]	Production cost[b]	Gross returns	Net returns
			dollars		
A. Current program[c]					
Quota	100	77.0	45,045	70,000	24,995
Additionals[d]	15	11.5	5,003	5,250	247
Total	115	88.5	50,048	75,250	25,202
B. 20% reduction in quota[c]					
Quota	80	61.6	36,036	56,000	19,964
Additionals	12	9.2	4,002	4,200	198
Total	92	70.8	40,038	60,200	20,162
C. Quota price reduced to $610st					
Quota[e]	100	77.0	45,045	62,800	17,755
Additionals	15	11.5	5,003	5,250	247
Total	115	88.5	50,048	68,050	18,002
D. 20% reduction quota & price reduced to $610st					
Quota[e]	80.0	61.6	36,036	50,240	14,204
Buyback[f]	2.5	1.9	826	1,525	699
Additionals	9.5	7.3	3,176	3,325	149
Total	92.0	70.8	40,038	55,090	15,052

a. Tons divided by 2600 lbs per acre yield.
b. Total costs of $585/acre applied to quota, cash costs of $435/acre applied to additionals, the average for 1991, 1992, and 1993 (see appendix table 2).
c. Price of $700 per ton for quota ($678 + $22) and $350 per ton for additionals, returns to quota, management, and risks. The $22 is a premium paid in addition to the support price.
d. Would plant 15% more acres than estimated need to assure quota production in each scenario.
e. Farmer receives $628 per ton for quota (3% above quota support).
f. With a price reduction of 10%, may expect 3% increase in domestic use, which would be supplied from buybacks of additionals, buybacks price at quota support.

Table 8. Estimated Net Returns and Land Values Resulting from Reduction in Quota or Quota Support Price, United States

Scenario	Quota	Acres[a]	Gross returns	Net returns[b]	Net/ acre[c]	Land value/ acre[d]
	thous tons	thous	thous $	thous $	dol	dol
Current program	1,350	1,038	945,000[e]	337,770	325	1,298
20% reduction in quota	1,080	831	756,000[e]	269,865	260	1,036
$68 reduction in support price	1,350	1,038	847,800[e]	240,300	232	926
20% Quota & $68 support reduction	1,080	831	678,240[e]	192,240	185	738

a. Quota divided by 2,600 lbs/acre yield.
b. Based on cost of $585/acre and net returns to quota, management, and risk.
c. Total net divided by estimated 1,038,000 acres, returns to quota, management, and risk.
d. Estimate income-producing ability per acre for five years discounted eight percent annually.
e. Quota price of $700/ton (678 + 22).
f. Quota price of $628/ton (610 + 18).

Table 9. Estimated Cost of Farmers' Stock Peanuts, Farm to Manufacturer

Item	Current policy[a]	Support decreased $68 per ton	Support decreased $178 per ton
	$/st		
Support price	678	610	500
Contract premium[b]	35	30	25
Grade premium[c]	7	6	5
Shelling cost & profit	180	180	170
Value oil stock	-30	-30	-30
Cost	870	796	670`
Avg. kernel cost $/lb[d]	.659	.603	.507

a.   Based on data contained in Abel, Daft, and Earley.

b.   Approximately 5% of support price.

c.   Approximately 1% of support price.

d.   Based on 1320 lbs edible kernels per farmers' stock ton.

Table 10. Estimated Cost of Farmers' Stock Peanuts in 18 oz Jar of Peanut Butter, Price of Peanut Butter and Estimated Change in Sales

Item	Support price per ton		
	$678	$610	$500
Farmer's stock peanuts[a]($)	.616	.552	.453
Manufacturers shelled peanut cost[b]($)	.740	.672	.569
Change in shelled peanut price(%)	-	-9.20	-23.1
Estimated change in peanut butter sales[c](%)		2.00	5.01
Retail price of peanut butter($)	2.14[d]	2.07[e]	1.97[e]
Retail price of peanut butter($)	2.14	2.10[f]	2.04[f]

a. Cost of 1.71 lbs FSP in 18 oz jar of peanut butter.
b. Estimated purchase cost of cleaned shelled peanuts.
c. Based on a price elasticity of -.217 at the manufacturers price level (Fletcher, Zhang, and Carley 1994).
d. Based on $1.90/lb as reported by Bureau of Labor Statistics in Abel, Daft, and Earley.
e. Estimated price if all the cost decrease of FSP was passed on to consumers.
f. Based on a price transmission coefficient of .598, the estimated proportion of the cost decrease that is passed on to consumers (Zhang, Fletcher, and Carley 1995).

Appendix

Appendix Table 1. Nominal and Real Support Prices and Prices Received by Peanut Farmers, United States, Marketing Years 1978 to 1994

Year beginning Aug. 1	Nominal support price		Real support price[a]		Average price received by farmers	
	Quota	Additionals	Quota	Additionals	Nominal	Real[a]
	dollars/ton					
1978[b]	420.00	250.00	608.61	362.27	422.00	611.51
1979	420.00	300.00	559.40	399.57	412.00	548.75
1980	455.00	250.00	553.86	304.32	502.00	611.08
1981	455.00	250.00	503.65	276.73	538.00	595.53
1982	550.00	200.00	573.39	208.51	502.00	523.35
1983	550.00	186.00	551.16	186.39	494.00	495.04
1984	550.00	186.00	527.43	178.37	558.00	535.10
1985	559.00	148.00	517.31	136.96	488.00	451.60
1986	607.40	150.00	547.16	135.12	584.00	526.08
1987	607.40	150.00	530.57	131.03	554.00	483.93
1988	615.20	150.00	517.32	126.14	560.00	470.90
1989	615.80	149.80	495.29	120.49	560.00	450.41
1990	631.40	149.80	486.78	115.49	698.00	538.12
1991	642.80	149.80	477.24	111.22	566.00	420.22
1992	675.00	131.00	487.47	94.61	580.00	433.40
1993	675.00	131.00	477.10	92.59	608.00	429.80
1994	678.40	132.00	477.75	92.96	580.00	408.40

a. Estimated by deflating nominal price with the GDP implicit price deflator: 1982–84 = 100.
b. Beginning of two-tier price supports.

Appendix Table 2. Cost and Returns Per Planted Acre and Per Ton of Peanuts, United States, Marketing Years 1981 to 1993

Marketing year begin-ning Aug. 1	Yield per acre	Gross value per acre[a]	Cash expenses per acre[c]	Total expenses per acre[c]	Total expenses per ton[c]	Residual returns[d]	
						Per acre	Per ton
	lbs	dollars					
1981	2647	710	354	568	429	142	107
1982	2642	656	426	536	406	120	91
1983	2350	563	428	521	443	42	36
1984	2828	708	424	542	383	166	117
1985	2771	621	396	499	360	122	88
1986	2355	681	387	498	423	183	155
1987	2305	645	391	508	440	137	119
1988	2427	682	391	517	426	165	136
1989	2432	668	397	529	435	139	114
1990	1955	684	409	545	557	139	142
1991	2467	691	465	611	495	80	65
1992	2576	747	420	581	451	166	129
1993[e]	1940	563	403	565	581	-2	-1
CV[f] (%)	10.7	7.9	6.3	6.0	13.5	41.6	42.9

Source: U.S. Dept. of Agr. 1994. Economic Indicators of the Farm Sector. Costs of Production Major Field Crops and Livestock & Dairy, ERS, ECIFS, 11–3, ECIFS 12–3, and estimates for 1993 by ERS.

a.   Does not include value for peanut hay.
b.   Includes variable cash expenses, farm overhead, taxes, insurance, and interest paid on operating and real estate loans.
c.   Includes cash expenses, capital replacement, unpaid labor, and land minus interest on real estate loans.
d.   Returns to peanut quota, risk, and management.
e.   Estimated.
f.   The coefficient of variation is a standardized measure of variability calculated by dividing the standard deviation by the average.