THE UNITED STATES WALNUT INDUSTRY AND ITS RELATION TO WORLD TRADE

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Purpose

Commercial walnut production in the United States is centered in the western states of Washington, Oregon, and California. In the five-year period 1969-1973, California production accounted for 97.6 percent of total U.S. walnut production. Walnut production has been increasing steadily over the past several years and exports have increased even more rapidly. Imports remain a very small proportion of total U.S. consumption.

The purpose of this report is to describe the current situation of the U.S. walnut industry and certain economic relationships which might have a bearing on tariff considerations. It is believed that a better understanding of the economic complexity surrounding the production and distribution of walnuts is necessary if an intelligent analysis of tariff policy is to be made.

The Current Situation and Trends

Recent increases in world walnut production have lifted total output to levels significantly above their level of the 1950s. Production in the years 1973 and 1974 averaged 239,000 tons, an increase of about 95,000 tons from 1952-1961 annual production levels. A major share of this increase took place in the United States. U.S. production today is more than double its level during the 1950s.

Foreign production is generally reported for the countries of France, India, Iran, Italy, and Turkey. The People's Republic of China export about 20,000 short tons per year, but their production is not evident in readily available statistical publications. As indicated in Table 2, total foreign production has increased very little, if at all, in the past 20 years.

Production in Turkey appears to be consistently above the earlier levels. As production in other countries remained somewhat stable, the relative importance of production in the United States increased from about one-half of total production in earlier years to two-thirds of total production during the past three years.

Imports of walnuts to the United States have declined sharply in the face of a rapidly developing U.S. commercial walnut industry. Imports of in-shell walnuts, which averaged nearly 25,000,000 pounds per year fifty years ago, and about one-tenth that amount in the mid-1930s, have ceased almost entirely since then. They accounted for less than one-quarter of one percent of walnut imports from 1966-1973. Imports of shelled walnuts averaged 17,000,000 pounds fifty years ago, and about half that during the mid-1930s. As shown in Table 2, recent imports of shelled walnuts have declined from a 1967 level of 10.8 million pounds to less than one million pounds in 1973. In the eight-year period, 1966-1973, imports amounted to 1.57 percent of domestic production. This share declined to 0.6 percent during the years 1971-1973.

Prior to the Second World War, U.S. production amounted to less than one-half of total world production. After 1945 imports sagged as American production and marketing capabilities increased and improved quality standards were developed. The major impact of this displacement was felt in the imports of in-shell walnuts. The importation of shelled walnuts remained a relatively significant proportion of total shelled production until the 1960s.

The most important market development of recent years has been the rapid expansion of export markets. The ability of the domestic industry to sell in export markets has permitted the disposition of increased supplies

at prices which could not be sustained in the domestic market alone. Export movement for the years 1966-1973 is shown in Table 2. Exports are primarily in the in-shell class. In recent years they have ranged from 4.2 million pounds in 1967 to 39.9 million pounds in 1973. Shelled walnut exports ranged from 1.5 million pounds in 1967 to 12.8 million pounds in 1973. Exports during the years 1971-1973 amounted to 14.5 percent of total domestic production. This is a significant increase from the only 2-3 percent of annual United States walnut production represented by exports 15 years ago. The domestic walnut industry is less dependent upon the American market than it once was. However, production and acreage have increased to meet foreign needs as well as increased domestic demand. Consequently, a viable American market is still essential to the effective operation of the U.S. walnut industry. For example, a 10 percent reduction in domestic shipments would far exceed the gain in exports realized in any one year and even exceeds the total change of the past three years.

All of the other commercial walnut-producing nations for which data are available are more dependent upon export markets for the disposition of their supplies than is the United States. In recent years France has exported about 44 percent of production, India almost 55 percent, Italy about 43 percent, and Turkey in excess of 55 percent. Consequently, annual production levels have an important bearing on total export volume. In the United States, by contrast, exports have not been as dependent on total production levels.

Europe is the primary export market for U.S. in-shell walnuts. Exports to the European countries accounted for three-quarters of all U.S. in-shell exports during the 1973 marketing year. Exports of shelled walnuts are more evenly dispersed with about one-third going to Asia, one-quarter to Canada, and 20 percent to Europe.

Sources of imports have varied over recent years. Forty years ago, France and China supplied most of the shelled walnuts imported into the United States. Chinese imports were cut off by embargo and have not been significant since the resumption of trade relations. The French have concentrated their export efforts within the European Common Market and have exported very little to the United States in recent years. Turkey, Iran, and India supplied 28 percent of annual shelled walnut imports during the period 1948-1952; their share of imports during the period 1966-1972 jumped to 90 percent of total imports.

United States tariffs are 5 cents per pound in-shell and 15 cents per shelled pound. These rates were established in the Tariff Act of 1930 and with one temporary exception have remained at that level. On an ad-valorem basis the tariffs have declined as prices for walnuts have appreciated. In the early 1930s, the tariff was approximately three-quarters of the import value. Thirty years later, it had declined to about one-quarter of import value. The tariff level ranged from 40 percent of import value to 18 percent of import value during the market years 1969-1973.

Implications for Tariff Policy

The foregoing description suggests the complexities of the U.S. walnut industry. Certain factors within this industry are important for determining the impact of tariff change. One factor is the shift in market preference toward shelled walnuts. The volume of domestic shelled walnuts marketed has increased from an annual average of less than 12 million pounds 50 years ago to an annual average of 178 million pounds during the 1971-73 marketing years. During the latter three years shelled walnut shipments amounted to 70 percent of total domestic shipments. The sales volume of shelled walnuts exceeded that of in-shell walnuts for the first time in 1957. Because imports have shifted entirely to shelled walnuts, the impact of a tariff change would be

felt entirely in the shelled walnut segment of the industry.

The second significant factor is that household consumption of shelled walnuts has become increasingly important and may range between 40 and 60 percent currently. The proportion shipped to bakers, but particularly to confectioners, has declined accordingly. Walnuts compete with other domestically shelled tree nuts, particularly pecans, in both household and commercial use. Commercial users are the principal buyers of imported walnuts. Therefore the price impact of tariff changes is most likely to be noted in the commercial sector of walnut users.

A third factor of importance is the re-emergence of China in world markets. Chinese walnuts have competed for export markets with U.S. walnuts. At one time China was a major source of supply for U.S. imports. U.S. producers have competed with relative success against Chinese exports to Canada and the European Common Market. Information concerning the Chinese production and price-making procedures is lacking. The world market for walnuts tends to be uncertain in the face of this information gap. Should American walnuts be foreclosed from certain markets because of political considerations concerning China, then some of the displaced production would find its way to domestic markets. A tariff policy change which encouraged additional supplies into the U.S. market would intensify the damage to U.S. producers if such a displacement should occur.

Based on past production trends and current nonbearing walnut acreage, it appears the U.S. walnut industry has sufficient capacity to serve likely domestic requirements.

A comprehensive statistical analysis of the walnut industry is beyond the scope of this report. Such an analysis may be found in the following publication: World Trade and the Implications of Tariff Reduction for the United States Walnut Industry, by Kenneth R. Farrell, Giannini Foundation of

Agricultural Economics, University of California, Berkeley, April 1964. In his analysis, Farrell found that the changes in demand for shelled walnuts in the United States was associated with changes in deflated prices of walnuts, the consumption of in-shell walnuts, the per capita supply of other tree nuts, real per capita disposable personal income, and a trend variable. He found these factors were able to explain about 86 percent of the variation in U.S. per capita acquisition of all shelled walnuts. The model appears to make economic sense.

Farrell also estimated an equation to explain the changes in U.S. annual per capita imports of shelled walnuts. The explanatory power of this equation was lower than that of the domestic model. At the time of his study, Farrell showed that the direct independent effects of a 1.5 cents per pound tariff reduction would be to increase United States imports of shelled walnuts by 222,000 pounds, lower the f.o.b. price for Pacific Coast shelled walnuts by 3.2 cents per pound, and decrease handlers gross income by about $1 million in the first year following the tariff reduction. His impact estimates assume that the entire tariff reduction would be reflected to foreign suppliers and that the domestic industry would not change its supply response from pre-tariff conditions. Farrell recognized that the actual price and income effects would be determined by the net total of all those simultaneously-operating variables of which the tariff reduction is but one variable.

Farrell also noted that imports might be suppressed if the domestic industry reduced prices to meet expected competition. Whether this would occur would depend, in part, upon the adjustment procedures of both domestic and foreign suppliers. Over a five-year period of tariff reductions, Farrell believed, subjectively, that the total income losses attributable independently to tariff reduction might range between $4 and $5 million in the shelled

walnut sector of the industry.

Little information is available which permits firm conclusions about the price elasticity of demand for walnuts. At the retail level, published elasticities range between -.60 and -1.307. At the wholesale level, one study shows a price elasticity of -.49. At the farm level, elasticities between -.20 and -.35 have been shown. The findings are consistent with economic theory which hypothesizes that prices become more inelastic as they move from the retail to the production level. Elasticities in this range suggest that additional imports encouraged by tariff reduction could have a substantially greater impact on farm level prices than on retail prices. This would be particularly true for walnuts used in confection and baking products. In these cases it is doubtful that the consumer would notice any price effect of a reduced charge for walnuts. As a result, it might be reasonable to expect that the major impact of tariff changes would be felt at the farm level with negligible impact at the retail level.

Based on Farrell's earlier analysis, and upon a review of the current situation, it is obvious that the domestic walnut industry would not gain from unilateral reduction in the United States tariff on shelled walnuts. It also appears that the likelihood of significant benefits to individual consumers is slight unless imports should become an important factor in the consumer market. Tariff changes which resulted in income reductions to producers, with little or no gain to consumers, would seem "unjust" or "inequitable."

Questions of equity and compensatory income transfers have not been studied in this report. They are important considerations however and are relevant to both industry and government in conducting trade negotiations. Based on events of the last 15 years, it is apparent that variables other than tariff have been more important factors in walnut production, trade, and

and consumption. The policies of government and private individuals and groups over the coming years will undoubtedly influence price levels much more than will the future volume of shelled walnut imports. The price levels shown in Table 3 indicate that long-run real prices per ton have remained relatively low. Over the next decade, it appears reasonable to expect continuation of the type of economic policies which have resulted in this relatively low price level.

Table 1

Walnuts, In-Shell Basis: Commercial Production in Specified Countries

(in thousands of short tons)

Year	France	India	Iran	Italy	Turkey	Total foreign	United States	Total	United States as percent of total
Average									
1935-39	38.3	--	--	16.5	8.0	62.8	56.7	119.5	47.4
1952-56	28.3	8.9	6.3	23.2	5.3	72.0	73.5	145.5	50.5
1957-61	21.7	12.9	6.7	21.3	7.4	70.0	71.7	141.7	50.6
1962-66	29.2	14.6	4.0	24.8	7.4	80.0	85.9	165.9	51.8
1967-71	26.0	13.2	4.5	21.6	9.8	75.1	105.3	180.4	58.4
Annual									
1972	26.0	15.0	4.0	17.0	10.0	72.0	115.9	187.9	61.7
1973	32.3	14.9	3.5	22.0	11.0	83.8	175.0	258.8	67.6
1974	20.9	11.0	3.3	16.5	12.1	63.9	155.9	219.8	70.9

Source: United States Department of Agriculture, Foreign Agricultural Service, Tree Nuts; 1973 and following years and Walnut Marketing Board, Production of United States Walnuts, February 19, 1975.

Table 2

Walnuts, In-Shell Basis:[1/] Additions to and Shipments from U.S. Supply, 1966-1973
(million pounds)

Marketing Year	Additions to Supply From			Shipments from Supply To			
	Domestic Production		Imports[2/]	Domestic Markets		Export Markets	
	In-Shell	Shelled	Shelled	In-Shell	Shelled	In-Shell	Shelled
1966	60.0	130.1	6.5	50.6	127.0	7.6	2.7
1967	45.6	105.5	10.8	48.9	119.4	4.2	1.5
1968	55.5	134.5	8.0	48.6	115.4	4.4	2.0
1969	61.4	147.0	0.8	51.5	126.3	6.4	8.3
1970	67.0	154.6	1.3	50.5	149.3	14.2	7.1
1971	75.8	195.2	1.3	50.9	176.1	26.5	11.7
1972	66.1	166.7	3.5	47.0	174.8	31.1	11.2
1973	177.8	236.8	0.5	50.4	184.1	39.9	12.8
1974*	110.0	198.8					

1/ Conversion of shelled weights to in-shell basis according to Walnut Marketing Board recommendation. Average for 9-year period is .376 lbs. shelled per pound in-shell.

2/ In-shell imports accounted for less than 1/4 of 1% of all walnut imports during this period.

* Preliminary.

Sources: United States Department of Agriculture, Foreign Agricultural Service, Tree Nuts, 1973; and Walnut Marketing Board, Monthly Management Reports, various dates.

Table 3

Walnuts: California Production and Grower Returns; Domestic Shipments; 1966-1973

	California Production (1000 tons)	Percent Change from Previous Year	California Grower Returns per ton	Percent Change from Previous Year	Domestic Shipments (million lbs)	Percent Change from Previous Year
1966	92	+ 16.4	310	+ 6.5	177.6	-
1967	74	- 19.6	301	- 2.9	168.3	- 4.2
1968	92	+ 24.3	428	+ 42.2	164.0	- 2.6
1969	103	+ 12.0	302	- 29.4	177.8	+ 8.4
1970	108	+ 4.9	301	0	199.8	+ 12.4
1971	135	+ 25.0	370	+ 22.9	227.0	+ 13.6
1972	116	- 14.1	417	+ 12.7	179.5	- 20.9
1973	168	+ 44.8	603	+ 44.6	234.5	+ 30.6
1974	155	- 7.7	400	- 33.7	-	-

Source: University of California, Cooperative Extension, Economic Briefs, 1974.