UNITED STATES TARIFF COMMISSION

SHEET GLASS
(BLOWN OR DRAWN FLAT GLASS)

Report to the President on
Investigation No. TEA-I-EX-7 Under
Section 351(d)(3) of the
Trade Expansion Act of 1962

TC Publication 449
Washington, D.C.
December 1971

UNITED STATES TARIFF COMMISSION

Address all communications to
United States Tariff Commission
Washington, D.C. 20436

C O N T E N T S

Note.--The whole of the Commission's report to the President may not be made public since it contains certain information that would result in the disclosure of the operations of individual concerns. This published report is the same as the report to the President, except that the above-mentioned information has been omitted. Such omissions are indicated by asterisks.

TABLES

Tables--Continued

Appendix B

REPORT TO THE PRESIDENT

U.S. Tariff Commission
December 30, 1971

To the President:

This report is made pursuant to section 351(d)(3) of the Trade Expansion Act of 1962 (76 Stat. 900), which provides that--

> Upon petition on behalf of the industry concerned, filed with the Tariff Commission not earlier than the date which is 9 months, and not later than the date which is 6 months, before the date any increase or imposition referred to in paragraph (1) or (2) of subsection (c) is to terminate by reason of the expiration of the applicable period prescribed in paragraph (1) or an extension thereof under paragraph (2), the Tariff Commission shall advise the President of its judgment as to the probable economic effect on such industry of such termination.

Introduction

Pursuant to various concessions granted in the General Agreement on Tariffs and Trade (GATT), the United States reduced the rates of duty applicable to sheet glass in 1948, 1951, and 1956-58.

Following an investigation by the Tariff Commission and reports to the President on May 17, 1961 1/ and January 10, 1962 2/ under section 7 of the Trade Agreements Extension Act of 1951, as amended, the President took "escape clause" action on sheet glass, proclaiming increased rates of duty applicable to sheet glass, effective at the close of business on June 17, 1962. 3/ Since June 1962, the Commission

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1/ Cylinder, Crown, and Sheet Glass: Report to the President on Escape-Clause Investigation No. 7-101, TC Publication 17, 1961.

2/ Cylinder, Crown, and Sheet Glass: Report in Response to the President's Request for Information Supplemental to the Report on Escape-Clause Investigation No. 7-101, TC Publication 48, 1962.

3/ Proclamation No. 3455, dated Mar. 19, 1962; and Proclamation No. 3458, dated Mar. 27, 1962.

has maintained a continuing review of developments with respect to sheet glass. 1/

On January 11, 1967, the President, pursuant to the provisions of section 351(c)(1)(A) of the Trade Expansion Act, terminated certain of the increases in the rates that had been imposed pursuant to the escape-clause procedure and reduced the others. The rates of duty on thin and heavy sheet glass returned to the trade agreement concession rates and modified escape-action rates were placed in effect on sheet glass weighing over 16 but not over 28 ounces per square foot (window glass) and measuring not over 100 united inches. 2/ The modified escape action rates were scheduled to terminate at the close of October 11, 1967, but following a report by the Tariff Commission on September 8, 1967 3/ the President extended them until the close of

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1/ Cylinder, Crown, and Sheet Glass: Report to the President (No. TEA-IR-7-63) Under Section 351(d)(1) of the Trade Expansion Act of 1962, TC Publication 110, 1963; Sheet Glass (Blown or Drawn Flat Glass): Report to the President (No. TEA-IR-7-66) Under Section 351(d)(1) of the Trade Expansion Act of 1962, TC Publication 178, 1966; Drawn or Blown Flat Glass (Sheet Glass): Report to the President on Investigation No. TEA-IA-4 Under Section 351(d)(2) of the Trade Expansion Act of 1962, TC Publication 158, 1965; Sheet Glass (Blown or Drawn Flat Glass): Report to the President on Investigation No. TEA-IR-7-68 Under Section 351(d)(1) of the Trade Expansion Act of 1962, TC Publication 262, 1968. Ordinarily, an annual review on sheet glass would have been submitted on Sept. 28, 1964. Inasmuch as a comprehensive investigation under sec. 351(d)(2) was in progress on that date, no annual review report was submitted during 1964. The report submitted pursuant to sec. 351 (d)(2) during 1965 was also submitted as the annual review report for that year.

2/ The measurement in united inches is the sum of the length and the width of a rectangle of glass.

3/ Sheet Glass (Blown or Drawn Flat Glass): Report to the President on Investigation No. TEA-I-EX-4 Under Section 351(d)(3) of the Trade Expansion Act of 1962, TC Publication 215, 1967.

December 31, 1969. That month the Tariff Commission again reported on the probable economic effect of restoration of the concession rates on window glass, 1/ and the President, pursuant to provisions of section 351(d)(3) of the Trade Expansion Act of 1962, continued the modified escape-clause rates until March 31, 1970. After receiving the Commission's report of December 29, 1969, under section 301(b)(1) of the act, in which the Commission split 3-3 as to whether imports of sheet glass were causing injury to the domestic industry, 2/ the President on February 27, 1970, imposed the modified escape-clause rates on window glass, but provided for the return to the trade agreement rates in three annual stages, the first of which is scheduled to become effective on January 31, 1972. The Tariff Commission has conducted one annual review and advised the President of developments in the sheet glass industry that had occurred since the Commission's report of December 1, 1969. 3/

On July 30, 1971, a petition for continuation of the modified escape action rates was filed on behalf of the sheet glass industry under section 351(d)(3) of the Trade Expansion Act. Accordingly, on August 16, 1971 the Commission instituted the instant investigation to determine the probable economic effect on the industry concerned of termination of the modified escape action rates with respect to flat glass of the kinds described in items 923.31-35 and 923.71-75 in part

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1/ Sheet Glass (Blown or Drawn Flat Glass): Report to the President on Investigation No. TEA-I-EX-6 Under Section 351(d)(3) of the Trade Expansion Act of 1962, TC Publication 306, 1969.

2/ Flat Glass and Tempered Glass: Report to the President on Investigation No. TEA-I-15 Under Section 301(b)(1) of the Trade Expansion Act of 1962, TC Publication 310, December 1969.

3/ Certain Window Glass: Report to the President on Investigation No. TEA-IR-7-71 under Section 351(d)(1) of the Trade Expansion Act of 1962, TC Publication 364, February 26, 1971.

2A of the Appendix to the Tariff Schedules of the United States. A public hearing was held on November 9, 11, 12, and 15, 1971.

Probable Economic Effects of Termination of the Escape-Action Rates of Duty 1/

When the President on February 27, 1970, acting pursuant to investigation No. TEA-I-15 under section 301(b) of the Trade Expansion Act of 1962 and section 351(a)(1) thereof, continued the then existing increased rates of duty imposed on window glass as a result of escape action taken under Article XIX of the GATT, he provided for their termination in three annual stages, the first to take place on January 31, 1972. In response to a petition filed under section 351 (d)(3) of the Trade Expansion Act, the Commission instituted the instant investigation to determine the probable economic effect on the industry concerned of termination of the escape-action rates in effect on window glass. In this case, where staged reductions of the escape-action rates are involved, the Commission is required to advise the President of the probable economic effect of the first staged reduction in the escape-action rates, and not the probable economic effect of the complete termination of those rates. The procedures established by section 351(d)(3) of the Trade Expansion Act provide that the industry concerned may file a petition not earlier than 9 months and not later than 6 months before a scheduled expiration of an escape-action rate. In the instant case, the petition was filed within the proper time period preceding the scheduled expiration of the first staged reduction on January 31, 1972. It is only this reduction in the escape-action rates that is at issue in this investigation.

1/ Commissioners Leonard and Young did not participate in this decision.

In the Commission's opinion, the first stage in the termination of the current modified escape-action rates of duty on imported window glass, if allowed to take effect, would impair the efforts of the domestic industry producing sheet glass to achieve viable operations. The glass to which these duties are applicable (window glass measuring not over 100 united inches) is the mainstay of domestic sheet-glass operations; window glass in 1970 accounted for more than two-thirds of the domestic production of sheet glass. More so today than during the 1960's, window glass is the pivotal product that determines the economic health of the industry.

The President initially granted escape-clause relief to the domestic sheet-glass industry in 1962, imposing increased rates of duty on imported sheet glass. The initial action was modified in 1967 so that escape-clause duties are now applicable, as indicated above, to window glass measuring not over 100 united inches, but not to other forms of sheet glass. For the sheet glass industry, the decade since the escape-clause relief was initially provided has been a period of stagnant markets, stiff import competition, and increasing competitive pressure from float glass.

During the last decade the size of the U.S. market for sheet glass has remained within a moderately narrow channel, ranging from 1.7 billion to 2.0 billion pounds annually. Annual consumption has been toward the high side of the channel in periods of high building construction and, to a lesser degree, high automotive output; it has been toward the low side of the channel in periods of low building construction and low automotive output. The industry's market for sheet glass,

thus, has not grown with the economy. Meanwhile, U.S. imports of sheet glass, the bulk consisting of window glass, have supplied a substantial share of domestic consumption. In the years immediately before the escape action, the imports' share of the U.S. market had risen appreciably; imports of sheet glass supplied 24 percent of U.S. consumption in the 3 years immediately preceding the escape action (1959-61), compared with 15 percent in 1955-57. During the period that escape-action rates of duty have been in effect, the share of the market supplied by imports rose slowly and irregularly from 25 percent in 1962 to 32 percent in 1968, but then declined to 24 percent in 1970. Throughout the period, thus, the imports have afforded strong competition to the domestic sheet-glass producers.

Along with the pressures from imports, the sheet glass industry has faced increasingly severe competition from float glass. To date this competition has been limited principally to heavy sheet glass, but improved technology makes the production of float glass in window glass thicknesses economically feasible. Industry sources indicate that only the lack of float glass capacity limits inroads into the window glass and heavy sheet glass markets. This lack of capacity is expected to be shortlived. Six new float glass plants were contructed in 1971, one in the United States and five abroad. Four additional plants are scheduled for completion in 1972 and 1973. The addition of this new float glass capacity will make it increasingly difficult for U.S. sheet glass producers to maintain satisfactory

levels of operation, and will make them increasingly sensitive to the effects of sheet glass imports.

As might be expected under the circumstances outlined briefly above, the domestic sheet glass industry has not prospered over the past decade. Shipments of sheet glass by domestic producers have been stable at best, plants have been closed, employment has declined, and profits have dropped to extremely low levels.

Shipments of sheet glass by domestic producers (including intra-company shipments) in 1968-70 ranged from 1.3 billion to 1.4 billion pounds annually. Early in the decade when escape-action rates had been in effect, i.e., 1962-64, shipments ranged from 1.4 billion to 1.6 billion pounds. Since the action by the President in early 1970, to continue the then existing escape-clause rates for a period of time, two domestic sheet glass plants, which had been devoted mostly to the production of window glass, have been closed, the most recent in September 1971. In addition, another producer in 1970 shut down a sheet-glass line, expanded its float glass facilities, and now relies entirely on float glass for its requirements of automotive glass.

Employment in the sheet-glass industry has declined markedly in the past decade. The number of production and related workers employed in the manufacture of sheet glass in 1970 was nearly 30 percent smaller than in 1962, the year the escape-action rates of duty were first imposed. Man-hours employed in the production of sheet glass declined commensurately; aggregate man-hours in 1970 were only about two-thirds those in 1962. Some of the decline in employment in sheet glass

operations is attributable to increased productivity, but much of the decline is the result of the closing of domestic sheet glass plants.

In recent years price competition between imported and domestic sheet glass in the U.S. market has sharpened. The domestic producers increasingly have had to offer to meet, in whole or in part, lower prices of imported glass in order to try to retain sales. The resultant harmful impact of the sharp price competition on the profits of the domestic producers is evident. The domestic producers' aggregate net operating profits earned on their sheet-glass operations in 1968 and 1969, as well as the ratios of those profits to net sales, averaged only a third of those in 1964; aggregate profits on sheet-glass operations in 1970 were almost nonexistent. In like fashion, the aggregate net profits earned by the domestic producers on sales of window glass, and the ratio of those profits to net sales, declined steadily from 1964 to 1967; they remained at a low level in 1968 and 1969, and the producers sustained an aggregate net operating loss in 1970.

Following the Commission's 1969 escape-clause investigation, the President, besides continuing the existing escape-action duties, authorized the domestic sheet-glass producers to apply for adjustment assistance under the appropriate provisions of the Trade Expansion Act. ASG Industries and Fourco Glass have applied, and both have been certified as eligible by the Department of Commerce. The Department recently authorized Government loans of up to $4 million to assist ASG Industries in financing a new float glass plant. Action on

proposals of the Fourco Glass Co. is still pending. At this point in time it is too early to judge the effects of the governmental assistance.

Economic conditions are more favorable to the domestic sheet-glass industry in 1971 than in other recent years. As a result of a marked increase in housing starts in 1971 (starts are expected to be some 40 percent greater than in 1970), the consumption of sheet glass in the United States will probably approach 2.0 billion pounds--the high side of the channel in which it has remained over the last decade. Imports of sheet glass--at least as evidenced by entries during the first 9 months of 1971--will be about the same or a little smaller in 1971 than in 1970. Consequently, demand for domestic sheet glass has strengthened, domestic production of sheet glass has increased, delivery schedules of the domestic producers have lengthened, and price discounting in the U.S. market has greatly lessened. The temporary import surcharge imposed by the United States in August and the changes in foreign exchange valuation that have occurred in recent months have likely been restrictive of U.S. imports of sheet glass, although the effects of these factors are as yet uncertain and cannot be measured. The announced devaluation of the U.S. dollar in conjunction with changes in currency valuations by other countries may also prove to be restrictive of U.S. imports, even though the temporary surcharge has been terminated.

Despite these circumstances, the economic health of the domestic sheet-glass industry is far from robust, and it remains under heavy

competitive pressure from imports. The attainment of viable operation by the industry is uncertain. Hence, in the Commission's view, the termination of a part of the protection afforded the industry by the existing escape-action duties would adversely affect the competitive position of the U.S. sheet glass industry and could lead to serious impairment of the economic condition of the sheet-glass industry.

Description and Uses

Sheet glass is one of four types of glass, which, when taken together, comprise flat glass. It is a transparent flat glass having a smooth fire polished surface made by machine drawing. 1/ It may be either clear or colored; however, virtually all domestic production and imports consist of the clear. It is commonly divided into three thickness (weight) classifications, thin sheet glass, window glass, and heavy sheet glass.

Thin sheet glass is that weighing over 4 ounces but not over 16 ounces per square foot. The lightest weights are used for making microscope slides, mounting photographic transparencies, and thin picture frame glass. The heavier weights (over 12 ounces per square foot) are used for picture frames, in laminating, and storm windows.

Window glass is that weighing over 16 ounces but not over 28 ounces per square foot. It is by far the most important sheet glass category and accounts for about 68 percent of domestic production of all sheet glass. It is the common glazing material for residential construction and serves, among other uses, in bookcases, and in the fabrication of laminated glass (other than for windshields) and double-glazed insulating units. Window glass is generally either

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1/ Sheet glass is identified in the Tariff Schedules of the United States (TSUS) as "drawn or blown flat glass, in rectangles, weighing over 4 ounces per square foot." All sheet glass today is drawn. Blown glass, which requires hand production methods, is now obsolete.

single strength, weighing 18 or 19 ounces per square foot, or double strength weighing 24 or 26 ounces per square foot; the two weights in each strength are, for the most part, used interchangeably. In thickness, single strength glass is about 3/32 inch, and double strength about 1/8 inch. Single strength glass accounts for about 70 percent of the consumption of window glass.

Nearly all window glass is of the dimensions "100 united inches or less," to which the escape-action rates apply. Beyond these dimensions, window glass does not provide the rigidity generally needed to avoid breakage during handling or from high wind loads.

Heavy sheet glass is that weighing over 28 ounces per square foot. It is commonly used to glaze large openings such as patio doors and for tempering. Its use (after tempering) in automobile side and rear windows, once substantial, has now been largely replaced by float glass. Heavy sheet glass is commonly used in thicknesses of 5/32 inch, 3/16 inch, and 7/32 inch.

The other types of flat glass, not covered by this investigation, are rolled glass, plate glass, and float glass. In recent years direct competition between the various types of flat glass has occurred in several uses. Plate, float, and sheet glass have all beer used in automobile side and rear windows, mirrors, table tops, and desk covers, although, by mid-1971, float glass had largely captured the market for automobile glass. The selection of one type of flat glass over another

is based on both quality and price; price is the predominant factor in many instances, particularly where small surfaces are involved. Thus far, most of the competition of plate and float glass with sheet glass has affected heavy sheet glass, not window glass. Float glass of 1/8 inch thickness, for example, is comparable in weight to double strength window glass, but, this thin float glass is being used in laminated automobile windshields rather than in competition with double strength window glass. Through mid-1971, the substitution of plate or float for double strength window glass had been negligible. Nevertheless, it is technically feasible to produce float glass as thin as single strength window glass, and opinion in the flat glass market is divided as to whether float glass will ultimately displace window glass, as it has largely displaced plate glass, and 1/4 inch heavy sheet glass.

U.S. Customs Treatment and Related Factors

Customs treatment

Sheet glass weighing over 16 ounces but not over 28 ounces per square foot (window glass) and measuring not over 100 united inches is currently dutiable at modified escape-action rates 1/ proclaimed by

1/ These rates are provided in items 923.31-923.75 of part 2A of the appendix to the TSUS.

the President on January 11, 1967. Presidential Proclamation No. 3967, of February 27, 1970, extended the duration of the modified escape-action rates until the close of January 31, 1972, after which the trade agreement rates they replace would be restored in three annual stages, ending in 1974. The rates to be restored were negotiated during 1956 tariff negotiations. Sheet glass, including window glass, was exempted from the Kennedy Round negotiations. The statutory rates, the trade agreement rates, and the escape-action rates provided for on successive dates until their termination on January 31, 1974, are shown below:

Ordinary (clear) window glass measuring not over 100 united inches: Specific rates of duty, by size of sheet

(In cents per pound)

Rate	Measuring not over 40 united inches	Measuring over 40, not over 60 united inches	Measuring over 60, not over 100 united inches
Statutory	1.5	1.9	2.4
Trade agreement	0.7	0.9	1.1
Original escape action	1.3	1.6	1.9
Modified escape action (currently applicable)	1.1	1.5	1.5
Effective on or after:			
Jan. 31, 1972	1.0	1.3	1.4
Jan. 31, 1973	0.9	1.1	1.3
Jan. 31, 1974	0.7	0.9	1.1

Colored or special window glass not over 100 united inches, imports of which are small, is subject to the same specific rate as the corresponding size of ordinary glass plus 2.5 percent ad valorem.

The existing rates on window glass are equivalent to about 20 percent ad valorem as compared with 16 percent on most heavy sheet glass and 9 percent on most thin sheet glass (table 1).

Imports from designated Communist countries are dutiable at the statutory rate. In 1970, they comprised 10 percent of the imports of all sheet glass and 17 percent of the imports of window glass.

Import surcharge

From August 16 until December 20, 1971, the President imposed a temporary surcharge of 10 percent ad valorem, as an emergency balance of payments measure. The surcharge applied to virtually all imports dutiable at trade agreement rates, except those subject to quantitative restrictions. If, however, the surcharge would have caused the total duty on an article to exceed the statutory rate, the statutory rate applied.

Where specific duties were involved, the unit value of the imported article determined whether the full 10 percent, or the statutory rate applied. In general, on ordinary window glass 60 to 100 united inches the full 10 percent additional applied. On ordinary window glass, up to 60 united inches, the aggregate escape-action rate and 10 percent ad valorem was generally more than the statutory rate. Hence, the statutory rate applied, and the effective surcharge

generally amounted to slightly more than 6 percent. On colored window glass, up to 100 united inches, the aggregate escape-action rate and 10 percent ad valorem was also more than the statutory rate The statutory rate, therefore, again was applied and the effective surcharge ranged from about 3 to 6 percent.

Currency revaluation

Concurrently with the imposition of the surcharge, the President suspended gold payments by the United States. The consequent depreciation of the dollar in terms of foreign currencies had the effect, by early December 1971, of increasing the price of articles stated in Japanese yen by 11 percent; those stated in Belgian francs by 9 percent; those in D-marks by 3 percent; 1/ those in pounds sterling by 3 percent; those in Italian lira by 2 percent; and those in French francs (free) by 2 percent. On December 18, 1971, the President proposed that Congress raise the price of gold to $38 an ounce.

Special dumping duties

During 1971, the Tariff Commission found that an industry is being injured, within the meaning of the Antidumping Act of 1921, as amended, by reason of imports at less than fair value of clear sheet

1/ West Germany permitted the D-mark to float against the dollar in May 1971. Since then, the D-mark has been revalued upward by 12 percent.

glass from Japan (April 7, 1971, 3-1) clear sheet glass from Taiwan (July 21, 1971, 2-2), and clear window glass from Italy (Nov. 3, 1971, 3-3). Accordingly, imports of clear window glass from these countries are liable to antidumping duty. In 1970, imports of clear window glass measuring not over 100 united inches from those countries amounted to 30 percent of the total imports dutiable under the modified escape-action rates.

Adjustment assistance

The President, in his proclamation of February 1970 extending the period for increased rates of duty on sheet glass, provided that a firm in the sheet glass industry might request the Secretary of Commerce for certification of eligibility to apply for adjustment assistance under Chapter 2 of Title III of the Trade Expansion Act of 1962 and that its workers might request the Secretary of Labor for certification of eligibility to apply for adjustment assistance under Chapter 3 of Title III of the act.

Two firms, ASG Industries, on September 22, 1970, and Fourco on July 6, 1971, requested the Secretary of Commerce for certification of eligibility for adjustment assistance under the foregoing authority. The Department of Commerce in December 1971 authorized a Government loan of up to $4 million to ASG Industries to help finance the construction

of a float glass plant in Greenland, Tenn., the site of ASG's plate glass facility. Fourco has received a certificate of eligibility to apply for adjustment assistance but has not yet submitted adjustment proposals. 1/

Certification of eligibility to apply for adjustment assistance was issued by the Secretary of Labor to about 1,500 workers. Additional information on the circumstances of this certification is included under Employment.

U.S. Producers

Window glass is produced in conjunction with other sheet glass by 4 firms at 11 establishments, which are listed as follows:

ASG Industries, Inc.
Jeannette, Pa.
Okmulgee, Okla.

Libbey-Owens-Ford Co.
Charleston, W. Va.

PPG Industries, Inc.
Henryetta, Okla.
Mount Vernon, Ohio
Clarksburg, W. Va.
Mount Zion, Ill.
Fresno, Calif.

Fourco Glass Co. 2/
Clarksburg, W. Va.
Adamston Plant
Rolland Plant
Fort Smith, Ark.

1/ * * *

2/ Fourco Glass Company now includes the former Rolland and Harding Glass Companies, which were counted separately in the 1969 report (TC Publication 310).

PPG Industries, Inc., is the major producer and with Libbey-Owens-Ford Co., accounts by far for the bulk of the total. The two firms are integrated and diversified corporations producing a complete line of flat glass, processed glass, fabricated glass products, and a variety of other products. PPG's integration extends to a company owned marketing and distribution system. In 1970, sheet glass accounted for less than * * * percent of net sales by either PPG or Libbey-Owens-Ford.

ASG Industries, Inc., is engaged in the manufacture of plate glass, rolled glass, and fabricated glass as well as that of sheet glass. Sheet glass accounts for about * * * percent of its net sales. The smallest producer, Fourco Glass Co., is engaged almost exclusively in the manufacture and sale of sheet glass.

Since January 1, 1966, U.S. producers have invested $28 million in new equipment and improvement of sheet glass production facilities. The great bulk of this investment, however, is accounted for by the establishment of PPG's Fresno, Calif., plant, which came on stream in 1967. It is the only sheet glass plant built in the U.S. since the mid-1950's. The investment since January 1, 1968, has been about $5 million, most of which has gone for automation and improvement in existing plants of the two smaller firms, ASG and Fourco. By contrast, investment in float facilities since January 1, 1968 has amounted to about $150 million.

Two sheet glass plants, that of ASG at Arnold, Pa., late in 1970, and that of Libbey-Owens-Ford at Shreveport, La., in September 1971, have closed down since 1968, and the sheet glass plant of Ford Motor Co., at Nashville, Tenn., has been rebuilt as a float glass plant. These changes have been only partially offset by the increase in production at other sheet glass plants since 1968.

The Arnold, Pa., plant of ASG was on a stand-by basis for the three-year period preceding its eventual closing in December 1970. The plant operated intermittently, for 2 months in 1968, and for about 5-1/2 months in 1969, before its permanent shutdown in 1970. Since 1967, it has accounted for less than 1 percent of U.S. sheet production. During 1970, activity at this location consisted of liquidation of inventory, and the plant was written off ASG's books with its final closing.

Closing of the Shreveport plant took place at a time when the recovery of residential construction had given rise to a heavy demand for sheet glass and when imports had been reduced. It resulted, at least in part, from differences between management and labor at the Shreveport plant, as well as from a continuing program by Libbey-Owens-Ford, to shift to the production of float glass. This plant had accounted for about * * * percent of the U.S. total and for * * * percent of the production of sheet glass by Libbey-Owens-Ford.

The production facilities at Ford's Nashville, Tenn., plant were converted over a period of about 5 years from sheet glass and plate

glass to float glass. The first float line at Nashville started-up in March 1966, and the last sheet production occurred in 1970. During 1967-69, the Nashville plant produced (largely for use in Ford cars) about * * * percent of the U.S. total of sheet glass.

U.S. Consumption

Sheet glass

U.S. consumption of all sheet glass (including window glass) is influenced by the level of building construction, particularly residential construction; by production of home furnishings, lighting fixtures, and appliances and by the replacement demand. 1/ The automobile industry had been a smaller but significant user of sheet glass, particularly heavy sheet, but by mid-1971, float glass had largely displaced heavy sheet glass in automotive use. Some sheet glass, after laminating, is still used in bus side windows.

During the period 1964-67, the consumption averaged 1,873 million pounds annually (table 2). It amounted to 1,975 million pounds in 1968, when both residential construction and motor vehicle shipments were significantly above the average for the preceding 4 years. Consumption continued at almost the same level in 1969, but declined 10 percent to * * * million pounds in 1970, when there was a general shortage in mortgage money and a drop in building construction.

1/ The replacement demand tends to act as a stabilizing influence as it is based partially on the total stock of dwellings in place rather than on the increment supplied by each year's new construction. Furthermore, additions and alterations to existing structures, and the resultant use of sheet glass tend to increase with the decline in new residential construction and vice versa.

During the first half of 1971, consumption of sheet glass was about 10 percent higher than it was in the corresponding period of 1970. This increase largely reflected an improvement in housing starts.

Window glass

Since 1968, window glass has accounted for nearly two-thirds of total sheet glass consumption. During the period 1964-67, consumption of window glass averaged 1,124 million pounds annually. It increased, by 12 percent, to * * * million pounds in 1968, and amounted to * * * million pounds in 1969. It declined to * * * million pounds in 1970 but it was 21 percent higher during the first 6 months of 1971 than in the corresponding period of 1970 (table 3). The increase reflected the generally buoyant state of housing construction during 1971.

Housing starts are expected to total 2,040 thousand in 1971, an increase of 600 thousand or nearly 40 percent over the number in 1970. Housing starts in 1972 are expected to amount to 2,150 thousand units. Over the longer term, factors influencing residential construction are favorable. The Emergency Home Finance Act of 1970, allows the Federal Home Loan Mortgage Corporation (a part of the Federal Home Loan Bank system) and the Federal National Mortgage Association to buy mortgages from financial institutions thereby increasing the availability of mortgage money. In addition, much of the increase in the U.S. population during the 1970's will occur in the age groups favorable to family formation and the establishment of new households.

U.S. Production, Shipments, Inventories, and Sales to Customers

Sheet glass

Production of all sheet glass increased from 1,278 million pounds in 1967 to * * * million pounds in 1969, but declined to * * * million in 1970. Production in the first 6 months of 1971 was 10 percent larger than in the same period in 1970 (table 4).

PPG Industries accounted for about * * * percent of the production in 1967-70 and for * * * percent of that in January-June 1971. The increase by PPG occurred at the expense of Libbey-Owens-Ford and Fourco which (notwithstanding an increase in the total for all companies) produced * * * percent less sheet glass in January-June 1971 than in the corresponding period of 1970.

Shipments and intra-plant transfers have generally corresponded closely with domestic production (table 5). They increased from 1,248 million pounds in 1967 to * * * million pounds in 1969, at a rate of 7 percent a year. They declined to * * * million pounds or by 7 percent in 1970, but during the first half of 1971, shipments were about 15 percent larger than in the corresponding period of 1970. Window glass accounted for the bulk of production and shipments; heavy sheet for about a third; and thin sheet for about 2 percent of the total.

Year-end inventories increased from 128 million pounds in 1967, when they amounted to 10 percent of shipments, to * * * million pounds in 1969, when they amounted to 12 percent. They were reduced in 1970

although they remained in the same ratio to shipments as in the year before. They were presumably reduced somewhat as shipments and intra-company transfers exceeded production in the first 6 months of 1971. As the year progressed schedules for the delivery of sheet glass lengthened from 4 weeks as at first to 12 to 15 weeks by November when, in view of the extreme situation, PPG imported some glass from its plants in Canada.

Window glass

As shown in table 6, the greater part of U.S. sheet glass shipments and intra-plant transfers has consisted of sheet glass over 16 ounces but not over 28 ounces per square foot (window glass). Shipments of clear window glass have been by far the most important. Shipments of colored window glass have been small.

Shipments of window glass increased slowly from * * * million pounds in 1967 to * * * million pounds in 1970. They increased dramatically in the first half of 1971, when they were nearly 25 percent larger than in the first half of 1970.

The increase has taken place in single strength (19-ounce) window glass. Shipments of double strength (26-ounce) have tended to decline as have those of both heavy sheet and thin sheet (table 7 and 8). Single strength accounts for between 65 and 70 percent of window glass shipments and double strength for most of the remainder. The only other trade category of window glass (22-ounce per square foot used for laminated glass products) "lami", accounts for about 2 to 3 percent.

Sales to customers

The sales to customers increased from * * * million pounds in 1968 to * * * million pounds in 1969. They decreased to * * * million in 1970 then returned in the first 6 months of 1971 to about the same average monthly rate as in 1969 (table 8). As had been noted for shipments and intraplant transfers, a steady increase in window glass accompanied a more-or-less persistent decline in thin sheet, heavy sheet, and (here shown separately) colored sheet glass.

The sales increased in value from * * * million in 1968 to * * * million in 1969, declined to * * * million in 1970, and proceeded at the rate of * * * million a year in the first 6 months of 1971 (table 8). The average unit value was 10-12 cents a pound for clear window glass and heavy sheet and 14 to 24 cents (depending on the thickness) for clear thin sheet.

PPG Industries and Libbey-Owens-Ford account for about 70 percent of the sales of window glass to customers (table 8a) and for 65 percent of those of heavy sheet glass (table 8b). The average unit value of sales to customers by PPG Industries and Libbey-Owens-Ford is appreciably above that by the two smaller firms, whether for window glass or heavy sheet.

U.S. Imports

Sheet glass

Imports of sheet glass amounted to 461 million pounds in 1967. They increased to 629 million in 1968 when they accounted for 32 percent of U.S. consumption--the largest proportion in the two decades

since 1950. Imports declined to 523 million pounds in 1969, and to 415 million pounds in 1970 when they supplied 24 percent of the domestic market, about the same proportion as in years when the full increased rates of duty were in effect. The decline continued into the first half of 1971, when imports amounted to 191 million pounds, as compared with 202 million pounds for the corresponding period of 1970, and the market share dropped to 22 percent.

Imports of sheet glass enter from Belgium, West Germany, Japan, Italy, the Republic of China (Taiwan) and the United Kingdom and some 25 other countries (table 9). About 10 percent enter from Communist dominated countries, and are subject to the full statutory rate of duty.

Window glass

Imports of window glass increased from 252 million pounds in 1967 to 364 million in 1968, when they accounted for 31 percent of the domestic window glass market. They declined to 212 million pounds in 1970 when they accounted for 20 percent of domestic consumption. They continued in the first 6 months of 1971 at about the same rate as in the corresponding period of 1970, but supplied a smaller share of the domestic market owing to the rise in U.S. producers' shipments.

About 85 percent of imported window glass has consisted of single strength glass, and the remainder, double strength glass. Of the

single strength glass, about 78 percent is 18-ounce glass and about 22 percent, 19-ounce glass. Similarly, the bulk of imported double strength glass is believed to have been the lighter weight glass (i.e., 24-ounce, rather than 26-ounce).

Most imports of window glass measure "not over 100 united inches." As noted earlier, rectangles of this size are approaching the practical limits for the utilication of sheet glass weighing not over 28 ounces.

Since 1968, most imports of window glass measuring not over 100 united inches have originated in Belgium, Italy, the United Kingdom, West Germany, Japan, and the Republic of China (Taiwan)(table 10). About 18 percent (by weight) of the total now enters from Communist dominated countries.

Employment

Employment in plants manufacturing sheet glass declined gradually from * * * persons in 1967 to * * * in 1969, then dropped 31 percent to * * * in 1970 (tables 11 and 11a). Most of the drop in 1970 resulted from the withdrawal of the plant of Ford Motor Co., at Nashville. This plant was already predominantly engaged in the manufacture of float glass, and in 1970 it became wholly so, and hence was not counted among the producers of sheet glass. At the other plants, the reduction in the average number of employees from 1969 to 1970 (table 11a) was 8 percent, and the reduction over the entire period from 1967 to 1970 was 13 percent.

Output per man-hour, with the growing use of labor-saving equipment, has increased materially in recent years. The average production of sheet glass per man-hour was 103 pounds in 1967, 112 pounds in 1968, 122 pounds in 1969, and 132 pounds in 1970. An increase in output per man-hour since 1967 has occurred by all 4 producers, however, the average output per man-hour by Libbey-Owens-Ford and PPG Industries is now * * * percent larger than that by either of the other producers (table 12).

A total of 1,480 workers in sheet glass plants have been certified for adjustment assistance by the Secretary of Labor under the Trade Expansion Act of 1962. The date of the earliest certification was May 1970 and that of the most recent October 1971. The date of unemployment for the workers benefitted extends as far back as November 1967, as shown in the following table.

Sheet glass: Estimated number of workers laid off and certified for adjustment assistance under the Trade Expansion Act of 1962, February 1970 to December 1971

Firm and plant	Number of workers	Date of unemployment	Date of certification
ASG Industries:			
Arnold, Penna	350	2-1-68	5-25-70
		11-9-67 1/	1-8-71 1/
Jeannette, Penna	200	4-9-69 to 1-1-70	7-16-70
PPG Industries, Inc:			
Henryetta, Okla	300	11-15-69	10-1-70
Clarksburg, W. Va	220	12-25-69	8-6-71
		5-11-70 1/	10-14-71 1/
Libbey-Ownes-Ford Co:			
Shreveport, La	410	4-22-71 to 9-27-71	10-15-71

1/ Revised.

Source: U.S. Department of Labor.

Marketing Channels

The marketing of window glass in the United States is characterized by the use of multiple distribution channels. Window glass may be sold directly by domestic or foreign producers to manufacturers, fabricators, processors, and glazing contractors; or, through independent glass distributors who, in turn, sell to manufacturers, fabricators, processors, glazing contractors, jobbers, and retailers; or, in the case of PPG Industries, through a company-owned merchandising system, which markets at all distribution levels, from that of the independent glass distributor to that of the retailer.

The U.S. producers of window glass sell it to so-called recognized factory buyers--independent glass distributors, fabricators (such as sash and door manufacturers), processors (such as temperers and laminators), and glazing contractors. The recognized factory buyers are the only concerns that can buy window glass directly from the factory. Other concerns desiring to purchase window glass, even in carload lots, must order their glass, at correspondingly higher prices, from distributors who are recognized factory buyers. PPG Industries, besides selling to recognized factory buyers, distributes some of the window glass it produces through its own merchandising outlets. The outlets comprise a vertically integrated marketing system, with regional centers (warehouses) and service branches located throughout the United States. The outlets serve buyers at all distribution levels from large manufactures to the homeowner who desires a single pane of glass. Although other glass manufacturers franchise dealers, PPG's vertical marketing system is unique in the industry.

Most of the importers of window glass are distributors, jobbers, manufacturers, fabricators, and contractors--predominantly firms that are also recognized factory buyers of domestic glass. The importers place their orders with U.S. sales agents of the foreign glass manufacturers, who in turn forward the orders to the foreign manufacturers; some sales agents also import glass for their own account for resale, thereby acting as distributors. Distributors who import window glass resell it through customary distribution channels, i.e., to jobbers, manufacturers, fabricators, contractors, and retailers. Manufacturers, fabricators, and contractors who import glass use it themselves in glazing or manufacturing.

All sheet glass producers also process glass, at least through tempering, and most are substantially engaged in fabrication as well. Hence, the independent fabricator of multiple glazed insulating units, for example, may rely on domestic manufacturers to supply him with the unprocessed glass. At the same time, he is competing in the end market with multiple glazed insulating units, and other fabricated products produced by the same domestic manufacturer.

Factory sales to customers of unprocessed sheet glass accounte for 87 percent (by weight) of total factory sales and intracompany transfers in 1970. Slightly more than one third was sold directly to sash and door manufacturers (table 13). Twenty-eight percent was sold to distributors, including jobbers and wholesalers, or distributed through PPG's company outlets. About 12 percent went to mirror manufacturers and independent temperers. Another 10 percent went to a variety of other

customers, for fabricating, insulating and laminating and other uses.

Besides these sales of unprocessed sheet, * * * million pounds consisted of intracompany transfers for further processing into advanced products. These intracompany transfers accounted for 13 percent of aggregate factory sales and intracompany transfers.

Prices

U.S. producers' prices

U.S. producers publish prices for window glass in terms of common specifications long used in the industry. The prices vary with the thickness, size, quality, and packaging of the sheets. The pricelists specify as many as 5 quality grades, 9 bracket sizes (united inch categories), and 6 kinds of packaging. If a price were quoted for every combination of quality, size bracket, and packing method, single strength sheet glass alone would be available at 270 different prices. Actually all combinations are not available; nevertheless, LOF, for example, lists 145 basic prices for single strength window glass. Because of the variety of combinations, the price for any particular combination covers only a small percent of the sheet glass sold.

List prices by the three leading producers are the same, and a change in list price by one of them, which happens once or twice a year, is adopted by the other two within a few days. List prices by the fourth producer are maintained at a level slightly below those by the other three.

The list price is quoted freight prepaid to customers' warehouse

Window glass and heavy sheet glass: Published list prices and average delivered price by U.S. producers on shipments in each quarter, 1969-70 and to third quarter 1971

(In cents per square foot)

Period	Window glass (19-ounce)		Heavy sheet glass (3/16 inch)	
	List price	Average price	List price	Average price
1969:				
First quarter	11.1	10.8	30.5	29.9
Second quarter	11.7	10.8	32.0	29.9
Third quarter	11.7	10.9	32.0	31.1
Fourth quarter	11.7	10.8	32.0	30.6
1970:				
First quarter	11.7	10.8	32.0	28.9
Second quarter	11.2	9.9	32.0	29.1
Third quarter	10.9	10.3	30.6	29.8
Fourth quarter	10.9	10.5	30.6	29.0
1971:				
First quarter	10.9	10.3	30.6	29.2
Second quarter	11.8	10.7	33.1	30.8
Third quarter	11.8	11.2	33.1	30.9

Source: Derived from data furnished to the U.S. Tariff Commission by the producers.

As indicated above, the list price has changed repeatedly since 1969, and the changes have been accompanied by more or less equivalent changes in the average price. In general the average price has lagged behind the list price on the increase and has preceded it on the decline, resulting in a difference between them of 2 1/2 to 11 1/2 percent. Both measures of the price for window glass as well as heavy sheet, increased in 1969, and after declining in 1970, increased in 1971 to the highest level of the period.

Importers' Prices

Importers are generally at a disadvantage with domestic producers in promptness and certainty of delivery, terms of payment, recognized and consistent quality, technical assistance to buyers, advertising and promotional activities, and market research and development. On the whole, it is acknowledged in the trade that imported glass requires a price advantage of about 5 percent to obtain competitive comparability.

During 1967-69, as the prices reported by buyers for both domestic and West European window glass (table 16) tended upward the spread between domestic and West European glass generally diminished. When domestic prices were reduced in 1970, the price of West European glass sometimes became higher than that of the domestic glass. The prices reported by buyers of heavy sheet glass (table 17) unlike those just discussed have moved irregularly. Like the prices just discussed, however, they show a reduction or reversal in 1970-71 of the difference formerly existing in the United States between the price of imported and domestic glass.

Profit-and-loss Experience of U.S. Producers

Sheet glass

The data reported in this section represent the financial experience of 4 domestic producers 1/ on sales accounting for over 90 percent of the domestic shipments of sheet glass during 1966-70.

Although each of the 4 producers manufactures other glass products in addition to sheet glass, the profit-and-loss data covers only their establishments which are devoted almost entirely to the production of sheet glass.

Net sales (including intracompany transfers) 2/ of sheet glass by the 4 producers aggregated $131.6 million in 1966, declined to * * * million in 1967, increased to * * * million in 1968 and * * * million in 1969, then declined to * * * million in 1970. The net operating profit of the 4 producers combined declined from $6.8 million in 1966 to * * * million in 1967, increased to * * * million in 1968, and declined to * * * million in 1969. As a group the 4 producers reported a net operating profit aggregating * * * in 1970 (tables 18 and 19).

1/ One of the 4 producers, the Fourco Glass Co., operated 2 separate sheet glass companies, Harding Glass Co. and Rolland Glass Co., during 1966-69. In 1970, Harding and Rolland were merged into Fourco. The profit-and-loss data provided by Fourco covers its combined sheet glass operations for 1966-70.

2/ In 1970 intracompany transfers of sheet glass accounted for about * * * percent of aggregate net sales by PPG Industries, Inc.; for * * * percent of those by Libbey-Owens-Ford Co.; and for * * * percent or less of those by the other two companies.

Data were reported to the Commission by the 4 producers showing their profit-and-loss experience during 1966-70 on window glass operations separately from their total sheet glass operations. Sales of window glass accounted for about three-fourths of the total sales of sheet glass in 1970 by 2 of the producers, and for about three-fifths of total sheet glass sales in 1970 by the other 2 producers. Combined sales of window glass by the 4 producers increased steadily from * * * million in 1966 to * * * million in 1968, then declined to * * * million in 1970. The net operating profit amounted to * * * million for the group in 1966, declined to * * * million in 1967, increased to * * * million in 1968, and declined to * * * million in 1969. As a group, the 4 producers reported a net operating loss of * * * million on their window glass operations in 1970 (tables 18 and 20).

The average unit value of sheet glass sold increased from 10.4 cents per pound in 1966 to 10. 6 cents in 1967, then declined gradually to 9.6 cents in 1970. The decline was accompanied by a large enough reduction in unit costs for profits to be maintained in 1968 and 1969, but not in 1970, when the domestic producers barely escaped a loss in their combined operations on sheet glass. Data for the individual companies are shown in table 21 of the Appendix. Those for all companies combined are summarized in the following table.

Sheet glass: U.S. producers average selling price, cost of sales, administrative and selling expense, and net operating profit, 1966-70

(In cents per pound)

Unit	1966	1967	1968	1969	1970
Net sales	10.4	10.6	10.5	10.2	9.6
Cost of goods sold	8.8	9.1	8.7	8.5	8.6
Administrative and selling expense	1.1	1.2	1.2	1.1	1.0
Net operating profit before taxes	.5	.3	.6	.6	1/

1/ Less than 0.05 cents per pound.

Source: Computed from information submitted to the U.S. Tariff Commission by the U.S. producers.

Total operations

As shown by published reports on their total operations, sales and net income by PPG Industries, Inc., and Libbey-Owens-Ford Co., the two major producers of sheet glass, declined in 1970 but proceeded in the first 9 months of 1971 at a rate that equaled or surpassed that in 1969. Over the same period, sales by the third producer, ASG Industries, Inc., increased and an annual loss, which had been incurred on operations over an extended period before, was replaced by a growing margin of profit.

Although sheet glass presumably contributed to the improvement in sales and earnings in 1971, it would have done less so than other products, including plate and float glass, which accounted for a larger proportion of total sales by the three concerns.

Leading producers of sheet glass: Net sales and net income on all operations, 1969, 1970, January-September 1970, and January-September 1971

(In millions of dollars)

Company	1969	1970	January-September	
			1970	1971
PPG Industries, Inc.:				
Net sales	1,151.7	1,093.8	833.0	921.0
Net income before taxes	100.1	58.0	49.7	76.0
Libbey-Owens-Ford Co.:				
Net sales	448.3	429.7	339.6	402.8
Net income before taxes	73.5	33.6	32.6	66.8
ASG Industries, Inc.:				
Net sales	40.9	43.7	31.9	35.4
Net income or (loss) before taxes	1/ (1.1)	.4	(.5)	2.0

1/ Exclusive of a charge, $15.5 million, for writedown of equipment.

Source: Public reports of the corporations.

Appendix A: Statistical tables

Table 1.--Sheet glass: U.S. rates of duty, imports for consumption, and calculated duty at the modified escape-action rates, 1970.

(Rates in cents per pound and percent ad valorem)

TSUS item	Article	Appendix item 1/	Statutory rate 2/	Trade agreement rate 3/	Escape-action rate: Original 4/	Escape-action rate: Modified 5/	Imports 1970	Calculated duty: Amount	Calculated duty: Ad valorem equivalent
							1,000 dollars	1,000 dollars	Percent
	Glass (including blown or drawn glass, but excluding cast or rolled glass and excluding pressed or molded glass) (whether or not containing wire netting), in rectangles, not ground, not polished and not otherwise processed, weighing over 4 oz. per sq. ft., provided for in TSUS items 542.11-.98, inclusive:								
	Ordinary glass:								
	Weighing over 4 oz. but not over 12 oz. per sq. ft.:								
542.11	Measuring not over 40 united inches		1.5¢	0.7¢	1.3¢	0.7¢	1,064	24	2.3
542.13	Measuring over 40 united inches		1.9¢	.9¢	1.6¢	.9¢	27	1	3.9
	Weighing over 12 oz. but not over 16 oz. per sq. ft.:								
542.21	Measuring not over 40 united inches		2.1¢	1.0¢	1.3¢	1.0¢	1,288	117	9.1
542.23	Measuring over 40 but not over 60 united inches		2.4¢	1.1¢	1.6¢	1.1¢	81	10	12.7
542.25	Measuring over 60 united inches		2.5¢	1.2¢	1.9¢	1.2¢	6	1	11.6
	Weighing over 16 oz. but not over 28 oz. per sq. ft.:								
542.31	Measuring not over 40 united inches	923.31	1.5¢	.7¢	1.3¢	1.1¢	2,745	49	17.9
542.33	Measuring over 40 but not over 60 united inches	923.33	1.9¢	.9¢	1.6¢	1.5¢	4,752	1,106	23.3
542.35	Measuring over 60 but not over 100 united inches	923.35	2.4¢	1.1¢	1.9¢	1.5¢	3,981	803	20.2
542.37	Measuring over 100 united inches		2.8¢	1.4¢	2.4¢	1.4¢	1,694	281	16.6
	Weighing over 28 oz. per sq. ft.:								
542.42	Not over 2-2/3 sq. ft. in area		1.5¢	.7¢	1.3¢	.7¢	1,131	132	11.7
542.44	Over 2-2/3 but not over 7 sq. ft. in area		1.9¢	.9¢	1.6¢	.9¢	1,007	132	13.1
542.46	Over 7 but not over 15 sq. ft. in area		2.4¢	1.1¢	1.9¢	1.1¢	1,259	171	13.6
542.48	Over 15 sq. ft. in area		2.8¢	1.4¢	2.4¢ or 3.5¢ 6/	1.4¢	8,252	1,349	16.4
	Colored or special glass:								
542.57	Weighing over 4 oz. but not over 12 oz. per sq. ft.		4.0¢	1.7¢	2.2¢	1.7¢	392	12	3.2
542.67	Weighing over 12 oz. but not over 16 oz. per sq. ft.		13.0¢	6.0¢	9.0¢	6.0¢	21	4	20.8
	Weighing over 16 oz. but not over 28 oz. per sq. ft.:								
542.71	Measuring not over 40 united inches	923.71	1.5¢ + 5%	0.7¢ + 2.5%	1.3¢ + 2.5%	1.1¢ + 2.5%	395	16	4.0
542.73	Measuring over 40 but not over 60 united inches	923.73	1.9¢ + 5%	0.9¢ + 2.5%	1.6¢ + 2.5%	1.5¢ + 2.5%	85	8	9.0
542.75	Measuring over 60 but not over 100 united inches	923.75	2.4¢ + 5%	1.1¢ + 2.5%	1.9¢ + 2.5%	1.5¢ + 2.5%	109	10	9.6
542.77	Measuring over 100 united inches		2.8¢ + 5%	1.4¢ + 2.5%	2.4¢ + 2.5%	1.4¢ + 2.5%	100	10	9.8
	Weighing over 28 oz. per sq. ft.:								
542.92	Not over 2-2/3 sq. ft. in area		1.5¢ + 5%	0.7¢ + 2.5%	1.3¢ + 2.5%	0.7¢ + 2.5%	274	24	8.8
542.94	Over 2-2/3 but not over 7 sq. ft. in area		1.9¢ + 5%	0.9¢ + 2.5%	1.6¢ + 2.5%	0.9¢ + 2.5%	611	67	10.9
542.96	Over 7 but not over 15 sq. ft. in area		2.4¢ + 5%	1.1¢ + 2.5%	1.9¢ + 2.5%	1.1¢ + 2.5%	523	65	12.5
542.98	Over 15 sq. ft. in area		2.8¢ + 5%	1.4¢ + 2.5%	2.4¢ + 2.5% or 3.5¢ + 2.5% 6/	1.4¢ + 2.5%	747	90	12.1

1/ The rates of duty currently applicable to glass as the result of escape-clause action are set forth in these items of the TSUS appendix.

2/ Rates of duty currently applied to the products of countries or areas designated as Communist dominated or controlled.

3/ The most recent rates of duty placed in effect as a result of concessions granted under the General Agreement on Tariffs and Trade, as modified by proclamation of the TSUS. These rates were temporarily suspended on June 17, 1962.

4/ Rates of duty placed in effect June 17, 1962, by Presidential Proclamation No. 3455 under the escape-clause procedure, as modified by proclamation of the TSUS. These rates were superseded by the rates which were placed in effect by Presidential Proclamation No. 3762 on January 11, 1967.

5/ Rates of duty placed in effect on January 11, 1967 by Presidential Proclamation No. 3762 of that date. The rates of duty applicable to TSUS appendix items 923.31, 923.33, 923.35, 923.71, 923.73, and 923.75 are higher than the trade-agreement rates and are therefore temporary. Presidential proclamation No. 3967, dated February 27, 1970, extended the period for the increased rates of duty to the close of January 31, 1972. The increased rates will then be reduced to the trade-agreement rates in three annual steps.

6/ The escape-action rate on sheet glass weighing over 28 ounces per square foot and measuring over 15 but not over 16-2/3 sq. ft. in area was 2.4¢ per lb. (plus 2.5% ad valorem if colored or special); that on sheet glass weighing over 28 oz. per sq. ft. and measuring over 16-2/3 sq. ft. in area was 3.5¢ per lb. (plus 2.5% ad valorem if colored or special).

Table 9.--Sheet Glass: 1/ U.S. imports for consumption, by principal sources, 1967-70, and January-June 1970 and 1971

Source	1967	1968	1969	1970	January-June 1970	January-June 1971
	Quantity (1,000 pounds)					
Belgium	134,605	170,581	127,246	94,409	44,641	38,451
West Germany	52,845	72,593	70,921	58,349	29,007	17,600
Japan	50,801	56,800	45,365	35,914	22,793	14,254
Italy	26,052	56,915	45,668	40,336	20,819	7,567
Republic of China (Taiwan)	31,930	41,698	29,625	27,763	13,761	10,866
United Kingdom	36,530	48,972	41,685	16,348	9,501	5,970
France	17,131	20,692	14,167	6,837	4,627	889
Finland	9,618	15,585	18,953	12,572	6,299	7,049
Poland	12,527	13,558	13,461	12,823	3,796	11,449
Canada	3,751	3,091	13,758	6,444	130	1,259
All other	40,622	82,002	62,034	62,818	28,189	51,016
Total	416,412	582,487	482,883	374,613	183,563	166,370
Communist dominated countries	44,482	46,227	40,423	40,418	18,412	24,688
Grand total	460,894	628,714	523,306	415,031	201,975	191,058
	Value (1,000 dollars)					
Belgium	9,475	12,706	10,511	8,765	4,199	3,579
West Germany	4,791	6,400	6,498	5,908	2,919	2,030
Japan	4,313	4,844	4,072	3,181	2,017	696
Italy	1,765	4,297	3,523	3,123	1,632	1,170
Republic of China (Taiwan)	1,810	2,301	1,814	1,553	783	666
United Kingdom	2,491	3,599	3,029	1,266	730	451
France	1,818	2,018	1,452	1,045	740	243
Finland	626	1,024	1,332	896	455	479
Poland	433	528	527	601	189	527
Canada	274	282	1,357	576	15	107
All other	2,189	4,476	3,645	3,631	1,737	2,979
Total	29,985	42,475	37,760	30,545	15,416	12,927
Communist dominated countries	1,824	1,869	1,718	1,828	813	932
Grand total	31,809	44,344	39,478	32,373	16,229	13,859

1/ Includes colored glass.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 10.--Sheet glass weighing over 16, but not over 28 ounces per square foot (window glass) and measuring not over 100 united inches: 1/ U.S. imports for consumption, by principal sources, 1967-70 and January-June 1970 and 1971

Source	1967	1968	1969	1970	January-June 1970	January-June 1971
	Quantity (1,000 pounds)					
Italy	20,525	38,565	32,154	28,158	12,953	11,179
West Germany	23,004	36,736	34,434	22,147	10,039	7,449
Japan	22,079	28,074	21,106	20,245	12,296	5,865
Belgium	42,709	62,158	34,705	19,179	9,302	10,190
Republic of China (Taiwan)	16,023	21,758	13,494	15,574	8,397	5,722
Finland	8,566	14,222	16,567	9,280	4,498	4,988
United Kingdom	26,474	31,793	26,602	6,833	3,976	3,011
Israel	10,735	14,536	9,757	9,308	4,866	5,014
France	8,702	11,869	6,053	849	655	320
All other	34,567	63,967	51,671	41,742	17,755	32,588
Total	213,384	323,678	246,543	173,315	84,737	86,326
Communist dominated countries	38,447	40,070	36,426	38,256	17,227	23,974
Grand total	251,831	363,748	282,969	211,571	101,964	110,300
	Value (1,000 dollars)					
Italy	1,332	2,644	2,360	2,050	942	892
West Germany	1,813	2,785	2,613	1,910	881	729
Japan	1,816	2,215	1,975	1,619	982	507
Belgium	2,647	3,854	2,353	1,614	855	766
Republic of China (Taiwan)	905	1,163	805	814	437	336
Finland	548	934	1,157	613	305	305
United Kingdom	1,570	2,206	1,838	509	289	221
Israel	501	745	517	476	251	252
France	721	901	552	217	116	178
All other	1,900	3,365	2,688	2,245	921	1,750
Total	13,753	20,812	16,858	12,067	5,979	5,936
Communist dominated countries	1,610	1,666	1,591	1,716	757	907
Grand total	15,363	22,478	18,449	13,783	6,736	6,843

1/ Dutiable in accordance with escape-clause provisions under TSUS appendix items 923.31, 923,33, 923.35, 923.71, 923.73, and 923.75. Such imports are reported statistically in TSUSA items 542.3120-542.3570 and 542.7100-542.7500, inclusive.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 16.--Window glass, 19 ounces, 50-60 united inches: Net delivered prices of domestic and of West German, Italian and Belgian glass, 1968-71

(In cents per square foot)

Period	Domestic	West German	Italian	Belgian
1968:				
January-June	11.4	10.8	9.4	10.1
July-December	11.1	10.6	9.6	10.2
1969:				
January-June	11.5	10.6	9.7	-
July-December	11.6	11.4	9.8	11.3
1970:				
January-June	10.9	10.3	9.5	-
July-December	10.8	10.6	9.9	11.3
1971:				
January-June	11.1	10.8	10.2	12.5
July-September	11.6	12.0	10.8	11.4

Source: Compiled by U.S. Tariff Commission from data supplied by direct-factory buyers of glass.

Table 17.--Heavy sheet glass, 3/16-inch thickness, 10 to 25 square feet: Net delivered prices of domestic and of West German, Italian, and Belgian glass, 1968-71

(In cents per square foot)

Period	Domestic	West German	Italian	Belgian
1968:				
January-June	29.6	25.0	26.7	26.7
July-December	29.8	25.1	-	-
1969:				
January-June	28.4	29.8	24.9	23.3
July-December	28.7	25.8	25.0	28.3
1970:				
January-June	31.6	25.1	29.5	31.5
July-December	26.5	27.4	29.5	33.5
1971:				
January-June	24.8	32.7	30.8	30.8
July-September	25.8	-	30.4	-

Source: Compiled by U.S. Tariff Commission from data supplied by direct-factory buyers of glass.

Table 18.--Sheet Glass: Profit-and-loss experience of U.S. producers on their sheet glass and window glass operations, 1966-70 1/

Year	Net sales and intracompany transfers	Net operating profit or (loss) before income taxes	Ratio of net operating profit or (loss) to net sales
	1,000 dollars	1,000 dollars	Percent
	Sheet Glass		
1966	131,595	6,755	5.1
1967	* * *	* * *	* * *
1968	* * *	* * *	* * *
1969	* * *	* * *	* * *
1970	* * *	* * *	* * *
	Window Glass		
1966	* * *	* * *	* * *
1967	* * *	* * *	* * *
1968	* * *	* * *	* * *
1969	* * *	* * *	* * *
1970	* * *	* * *	* * *

1/ Includes data on all companies that produce significant quantities of sheet glass: the reporting establishments in which sheet glass is produced are devoted almost wholly to the production of sheet glass. The data shown, therefore, are representative of the total operations of the establishments as well as sheet-glass operations alone.

* * *

Source: Compiled from information submitted to the U.S. Tariff Commission by the U.S. producers.

Appendix B

Appendix B: Supplementary Statistics

Note.--One producer has indicated that any data obtained by the Commission may not be published since even industrywide totals could, by subtraction, disclose his operations. For this reason three supplementary tables showing production, shipments, and consumption derived from Bureau of the Census data, which contain public information, are provided.

Table A.--Sheet glass: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1967-70 and January-September 1970-71

(In millions of pounds)

Item	1967	1968	1969	1970	January-September 1970	January-September 1971
Production	1,302	1,375	1,500	1,369	993	1,043
U.S. exports 1/	11	7	4	4	3	2
U.S. imports for consumption at MFN rates of duty	416	582	483	375	279	269
At full rates	45	46	40	40	28	44
Total imports	461	628	523	415	308	313
Apparent consumption	1,752	1,996	2,019	1,780	1,298	1,354

1/ Official statistics reported in square feet converted to pounds at the ratio 1 sq. ft. = 1.16 pounds.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table B.--Window glass: U.S. production, exports of domestic merchandise, imports for consumption, and apparent consumption, 1967-70 and January-September 1970-71

(In millions of pounds)

Item	1967	1968	1969	1970	January-September	
					1970	1971
Production	839	891	963	943	675	762
U.S. exports 1/	7	7	4	4	3	2
U.S. imports at MFN rates of duty	230	349	270	194	145	159
At full rates	39	40	36	39	27	42
Total imports	269	389	306	233	171	201
Apparent consumption	1,101	1,273	1,265	1,172	843	961

1/ Official statistics reported in square feet converted to pounds at the ratio 1 sq. ft. = 1.16 pounds.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table C.--Sheet glass: U.S. producers' shipments, 1967-70 and January-September 1970-71

Description	1967	1968	1969	1970	January-September 1970	January-September 1971
	Quantity (Millions of pounds)					
Window glass	833	886	915	926	645	810
Single strength	585	622	638	658	455	588
Double strength	249	264	277	268	190	223
Heavy sheet glass	360	363	419	312	239	205
Thin, or colored sheet glass	73	56	44	32	25	22
Total, all sheet glass	1,267	1,305	1,379	1,270	910	1,036
	Value (Millions of dollars)					
Window glass	83.5	92.4	97.5	93.5	64.9	83.9
Single strength	56.7	63.0	66.1	64.7	44.5	58.9
Double strength	26.8	29.4	31.4	28.7	20.4	24.8
Heavy sheet glass	37.5	39.0	45.6	32.6	25.0	22.2
Thin, or colored sheet glass	10.5	8.1	7.0	5.5	4.4	3.6
Total, all sheet glass	131.6	139.6	150.1	131.6	94.2	109.4
	Unit value (cents per pound)					
Window glass	10.0	10.4	10.7	10.1	10.1	10.4
Single strength	9.7	10.1	10.4	9.8	9.8	10.0
Double strength	10.8	11.1	11.3	10.7	10.7	11.1
Heavy sheet glass	10.4	10.7	10.9	10.4	10.5	10.8
Thin, or colored sheet glass	14.4	14.5	15.9	17.2	17.6	16.4
Total, all sheet glass	10.4	10.7	10.9	10.4	10.4	10.6

Source: Derived from data reported by the U.S. Bureau of the Census.