UNITED STATES TARIFF COMMISSION

ELECTRONIC RECEIVING TUBES AND MOUNTS: WORKERS OF THE WOODBRIDGE, N. J., PLANT OF RCA CORP.

Report to the President
on Investigation No. TEA-W-234
Under Section 301(c)(2) of the Trade Expansion Act of 1962

TC Publication 679
Washington, D. C.
July 1974

UNITED STATES TARIFF COMMISSION

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CONTENTS

Tables

CONTENTS

CONTENTS

REPORT TO THE PRESIDENT

U. S. Tariff Commission,
July 1, 1974.

To the President:

In accordance with sections 301 (f)(1) and (f)(3) of the Trade Expansion Act of 1962 (TEA) (19 U. S. C. 1901), the U. S. Tariff Commission herein reports the results of investigation No. TEA-W-234 made under section 301(c)(2) of the act to determine whether, as a result in major part of concessions granted under trade agreements, articles like or directly competitive with electronic receiving tubes and components thereof known as mounts (of the types provided for in item 687.60 of the Tariff Schedules of the United States (TSUS)) produced by the Woodbridge, N. J., plant of the RCA Corp., New York, N. Y., are being imported into the United States in such increased quantities as to cause, or threaten to cause, the unemployment or underemployment of a significant number or proportion of the workers of such firm or an appropriate subdivision thereof.

The investigation was instituted on May 8, 1974, on the basis of a petition for adjustment assistance filed under section 301(a)(2) of the act on behalf of the workers and former workers of the Woodbridge, N. J., plant of the RCA Corp. The petition was received on May 2, 1974.

Notice of the investigation was published in the Federal Register (39 F. R. 17147) on May 13, 1974. No public hearing was requested, and none was held.

The information in this report was obtained from RCA Corp., from other domestic producers, importers, users of the aforementioned articles, trade associations, and the petitioners, and from the Commission's files.

Finding of the Commission

On the basis of its investigation, the Commission finds (Vice Chairman Parker and Commissioner Young dissenting and Commissioner Leonard not participating) that articles like or directly competitive with electronic receiving tubes and components thereof known as mounts (of the types provided for in item 687.60 of the Tariff Schedules of the United States) produced by the Woodbridge, N. J., plant of the RCA Corp. New York, N. Y., are, as a result in major part of concessions granted under trade agreements, being imported into the United States in such increased quantities as to cause unemployment or underemployment of a significant number or proportion of the workers of such firm or an appropriate subdivision thereof.

Views of Chairman Bedell, Commissioner Moore, and Commissioner Ablondi

This investigation relates to a petition filed on behalf of the workers and former workers of the Woodbridge, N. J., plant of the RCA Corp. (RCA) for a determination under section 301 of the Trade Expansion Act of 1962 of their eligibility to apply for adjustment assistance.

The petitioning workers have been engaged in the manufacture of electronic receiving tubes and electronic receiving tube mounts. The petitioners contend as a result in major part of concessions granted under trade agreements, an article like or directly competitive with the articles produced by the workers' firm is being imported into the United States in such increased quantities as to cause, or threaten to cause, unemployment or underemployment of a significant number or proportion of the workers of the firm.

Under the Trade Expansion Act of 1962, four criteria must be met in order for an affirmative decision to be made. These criteria are as follows:

(1) imports of an article like or directly competitive with an article produced by the petitioning workers must be increasing;

(2) The increase in imports must be a result in major part of trade-agreement concessions;

(3) A significant number or proportion of the workers concerned are unemployed or underemployed, or threatened with unemployment or underemployment; and

(4) The concession-generated increased imports must be the major factor in causing or threatening to cause the unemployment or underemployment.

In this instance, it is our judgment that each of the four criteria outlined above has been met.

The facts developed during this investigation are almost identical with those in an earlier case, Workers of the Owensboro, Ky., Plant of General Electric Co.: . . . Investigation No. TEA-W-217 . . . , TC Publication 637, 1974. A discussion of the facts developed during the investigation of the instant RCA case with reference to each of the four criteria follows:

Increased imports

Total imports of electronic receiving tubes, including those imported as components of television receivers, and of tube mounts which are further processed into receiving tubes in the United States, have increased from * * * million units in 1968 to * * * million units in 1973--a * * * percent increase.

Imports of receiving tubes and tube mounts as separate articles have increased from * * * million units in 1968 to * * * million units in 1973--a * * * percent increase.

In major part

The second requirement of the act is that increased imports have resulted in major part from trade-agreement concessions. The rate of duty on electronic receiving tubes and mounts has been reduced from 35 percent ad valorem in 1930 to 6 percent in 1972 as the result of trade-agreement concessions.

The duty reduction represented by trade-agreement concessions were sufficiently large so as to provide an incentive for increased imports. These concessions from 1930 duty rate increased the average unit profit of foreign production over domestic production by an estimated * ** percent.

Unemployment and threat thereof

This criterion has also been met. The average annual number of production and related workers engaged in the production of electronic receiving tubes and mounts during 1969-73 in the Woodbridge plant decreased each year from * * * in 1969 to * * * in 1973. This decrease continued in 1974 and in March the average number of such workers was * * *. RCA plans to close the Woodbridge facility in the first quarter of 1975. In view of the foregoing, it is clear that a significant number of workers have been unemployed or underemployed, or threatened with unemployment or underemployment, within the meaning of the statute.

Major factor

The fourth criterion is that concession-generated increased imports are the major factor causing or threatening to cause the unemployment or underemployment of the workers at the Woodbridge plant. A direct relationship exists between the increased imports of receiving tubes and mounts and the unemployment of such workers. Domestic production of tubes and mounts is controlled by three highly

competitive producers. Electronic tubes and mounts are interchangeable, and are sold on the basis of price. As RCA's competitors increased their concession-generated imports, the company was forced to meet its competition by changing its production plans, and increasing its own foreign manufacturing, adversely affecting domestic employment and causing or threatening to cause increased unemployment. In order to meet the competition of foreign imports, RCA was forced to curtail domestic production of tubes and tube mounts and increase its imports. Accordingly, we conclude that the concession-generated increased imports have been the major factor in causing the unemployment of the workers concerned.

Conclusion

Since we find that all the statutory requirements are met, we conclude that the electronic receiving tube and mount workers at the Woodbridge, N. J., plant of RCA Corp. who are unemployed or underemployed are eligible to apply for adjustment assistance.

Views of Vice Chairman Parker

My determination in the instant investigation is in the negative because increased imports resulting from trade agreement concessions of articles like or directly competitive with receiving tubes and mounts produced at the Woodbridge, N.J., plant of RCA are not the major factor causing the unemployment or underemployment of the workers of that plant.

The RCA Corp. commenced its Brazilian and Mexican operations in 1957 and 1959, respectively, the products of the two plants initially being shipped to Latin American and South American markets. Electronic receiving tube mounts were not imported by RCA until May of 1969 (Brazil) and February of 1971 (Mexico). Major duty reductions on receiving tubes and mounts, however, occurred during the period 1930 to 1948 when the duty was reduced from 35 percent ad valorem to 12.5 percent ad valorem. Beginning in 1968 the duty rates were further staged down over a 5-year period to the present rate of 6 percent ad valorem. These reductions had little effect, if any, on RCA's decision to import receiving tubes and mounts from foreign operations as noted by the import activity from Brazil and Mexico over this 17-year period.

In recent years, RCA and two other major manufacturers have faced an ever decreasing demand for electronic receiving tubes and mounts. Total domestic demand for tubes has decreased from a peak of 443 million tubes in 1966 to just 159 million tubes in 1973, while imports of tubes have decreased steadily from 52.7 million in 1967,

prior to the implementation of the staged Kennedy Round duty reductions, to 35.4 million in 1973. This decrease in demand for, and use of, receiving tubes and mounts is largely due to the technological advances in solid state transistors and diodes and in integrated circuits. This new and improved technology has provided better performance and permitted new functions and uses not heretofore possible with receiving tubes. At present, the principal market for receiving tubes and mounts is for replacement uses in television receivers. The decline in the market demand for receiving tubes and mounts brought about the need for RCA to reduce its production and to consolidate its remaining production of these articles in its other existing facilities, domestic and foreign. Parts of the production formerly carried out at the Woodbridge plant are being consolidated in RCA's Harrison, N.J., plant.

Further, all mounts imported by RCA to its domestic facilities are entered under the provisions of TSUS items 806.30 or 807.00. These items provide that imported articles advanced in value in foreign countries and incorporating fabricated components that have been manufactured in the U.S. are subject to duty on the full value of the imported article less the value of those U.S. components contained therein. On the average, 50 percent of the value of RCA's imported mounts consist of U.S. materials and thus is duty exempt; only the remaining value is dutiable. These provisions, which are not the result of trade concessions, were a further incentive to RCA's decision to import electronic receiving tubes and mounts from its Brazilian and Mexican plants.

For the reasons referred to above I have made a negative determination.

Views of Commissioner Young

My determination in the instant case is negative because one of the statutory criteria has not been met, i.e., that the increase in imports of electronic receiving tubes and mounts like or directly competitive with those produced by the RCA Corp., Woodbridge, N.J., is the result in major part of concessions granted under trade agreements. My reasoning in support of this determination is set forth in my statement in an earlier Commission investigation under the Trade Expansion Act. 1/

1/ Electronic Receiving Tubes and Tube Mounts: Workers of the Owensboro, Ky., Plant of General Electric Co., ..., Investigation no. TEA-W-217..., TC Publication 637, January 1974, pp. 7-9.

INFORMATION OBTAINED IN THE INVESTIGATION

Description and Uses

The only products of the Woodbridge, N. J., plant of RCA Corp., are electronic receiving tubes and mounts.

RCA Corp. has in the past imported some electronic receiving tubes from its plants in Mexico and Brazil. RCA does import electronic receiving tube mounts from its plants in Mexico and Brazil. These mounts are used in the company's tube manufacturing operations in Harrison, N. J.

Electronic receiving tube mounts are consumed in electronic receiving tubes, which in turn, are utilized primarily in television receivers. The basic components of an electronic receiving tube are the mount, a glass or metal envelope, and for some types, a phenolic base. The mount is a round, flat glass disc to which the functioning elements of the tube have been attached. These elements are the cathode(s), plate(s), grid(s), and filament(s), as well as such accessory parts as getters, metal heat dissipating shields, and contacts for external connections. The tube is completed by placing a glass or metal envelope over the mounts, sealing the envelope to the base, exhausting the air from the interior to create a vacuum, and, if required, attaching the base to the glass disc previously described. These finishing operations are highly automated.

The manufacture of the mount components requires a number of machine operations, such as stamping mica spacers and metal

parts and winding fine coils to form grids. Assembling the components requires numerous meticulous operations such as welding fine wire connections. For those mounts produced in large volume, a high degree of mechanization is possible. However, setting up automatic machinery for long production runs is both time consuming and costly and is often accompanied by a high rejection rate during initial assembly. Some operations are extremely difficult to automate and mounts made in limited quantities are usually assembled more economically by hand. In general, mounts assembled in domestic facilities, such as RCA's Woodbridge plant, require the least amount of labor. Mounts which are highly labor intensive are typically assembled in foreign facilities operated by U. S. producers, an example of which is RCA's plants in Mexico and Brazil.

In recent years, technological advances in solid-state semiconductor components, beginning with diodes and transistors and followed by integrated circuits, have permitted these devices to replace electronic receiving tubes in an ever-increasing number of applications. These articles are not made in RCA's Woodbridge and Harrison plants.

Diodes include most semiconductors having two terminals; i. e., rectifiers, signal diodes, and switches. 1/ A transistor is most

1/ Rectifiers convert an alternating current signal to a direct current signal. Some rectifiers, such as thyristors, have three or more terminals. Signal diodes perform many functions depending upon their voltage-current characteristics; e. g., tunnel diodes may be used as detectors, amplifiers, or switches in electronic circuits. Switches are used to permit or inhibit the movement of an electronic signal; they may have two or more terminals, and one switch may provide many switching functions.

often a three-terminal device which performs most functions of a diode but is frequently used for signal amplification. Integrated circuits, which include small-, medium-, and large-scale integration arrays, may consist of both active and passive components integrated on a single substrate. Integrated circuits may function as, or include the functions of, thousands of diodes, transistors, resistors, capacitors, and inductors.

Semiconductor diodes, transistors, and integrated circuits have already displaced receiving tubes and other electronic components in many applications such as most consumer electronic products, computers, communications equipment, industrial controls, and military electronic equipment. However, receiving tubes continue to be used, largely in high-voltage or high-current circuits and as replacements in equipment previously produced which utilize receiving tubes. The largest market for receiving tubes at present is for replacement use in television receivers and as original equipment in new television sets.

U. S. Tariff Treatment

Electronic receiving tubes and mounts, the articles produced at the Woodbridge, N. J., plant of RCA Corp., are classified under item 687.60 of the TSUS, which also provides for transistors, certain other electronic tubes, semiconductors, and related parts. Under the original schedules of the Tariff Act of 1930, these articles were classifiable in a group of electrical articles under paragraph 353 at the rate of 35 percent ad valorem. Television receivers,

the end product for most receiving tubes, as well as diodes, transistors, and integrated circuits, were also classifiable under paragraph 353 of the Tariff Act of 1930. The 35-percent rate remained unchanged from June 18, 1930, through December 31, 1938.

Pursuant to successive trade-agreement concessions beginning in 1939, the applicable rates of duty have been substantially reduced. The rates of duty currently (1974) in effect on these articles range from 5 percent ad valorem to 6 percent, reflecting the final stage, effective January 1, 1972, of the five-stage concessions granted in the Kennedy Round negotiations under the General Agreement on Tariffs and Trade (GATT).

The effective dates of the various rates of duty applicable to the aforementioned articles under the Tariff Act of 1930, as modified by trade-agreement concessions and the Tariff Classification Act of 1962, are given in the following table.

Certain electronic components and television receivers: U.S. rates of duty, 1930-72

(In percent ad valorem)

Effective date	Authority	Receiving tubes, transistors, diodes, and integrated circuits (TSUS item 687.60)	Television receivers (TSUS item 685.20)
June 18, 1930	Tariff Act of 1930	35.0	35.0
Jan. 1, 1939	Trade agreement with the United Kingdom.	25.0	25.0
Jan. 1, 1948	GATT concession	15.0	15.0
Jan. 6, 1951	do	12.5	12.5
June 30, 1956	do	12.5	11.5
June 30, 1957	do	12.5	11.0
June 30, 1958	do	12.5	10.5
July 1, 1962	do	12.5	10.0
Aug. 31, 1963	1/	12.5	10.0
Jan. 1, 1968	GATT concession	11.0	9.0
Jan. 1, 1969	do	10.0	8.0
Jan. 1, 1970	do	8.5	7.0
Jan. 1, 1971 2/	do	7.0	6.0
Jan. 1, 1972	do	6.0	5.0

1/ Tariff Classification Act of 1962.

2/ An additional 10-percent import duty was imposed from Aug. 16, 1971, to Dec. 19, 1971 (Presidential Proclamations 4074 and 4098).

U.S. Producers

Three large producers of electronic receiving tubes in the United States account for nearly all of the domestic production--RCA Corp., General Electric Co., and GTE Sylvania. All of these firms produce some of the electronic receiving tube mounts which they consume in their production of receiving tubes. All three companies also import some of their mounts from foreign affiliates located in Brazil, Mexico, and Singapore. * * * utilizes two domestic service organizations to assemble mounts out of parts supplied by this producer.

U.S. Consumption, Shipments, and Imports

Electronic receiving tube mounts 1/

* * * * * * *

1/ The data in this section are based on information obtained by the Tariff Commission from the three largest domestic manufacturers of electronic receiving tubes. These firms are believed to have accounted for over 95 percent of U.S. production of electronic receiving tubes, and consequently, of the consumption, shipments, and imports of tube mounts.

* * * * * * *

Electronic receiving tubes

Consumption of receiving tubes has declined steadily in recent years as semiconductors have been utilized increasingly in consumer electronic products. The expanding use of improved semiconductors in these products has limited, in large part, the use of receiving tubes to television receivers and the replacement market.

Apparent U.S. consumption of receiving tubes declined steadily from 269 million units, valued at $230 million, in 1969 to 159

million units, valued at $158.5 million, in 1973 (table 2). For the January-March 1974 period, tube consumption amounted to 29 million units, valued at $29.3 million, as compared with 40 million units, valued at $39.6 million, for the corresponding period in 1973.

Shipments of receiving tubes by U.S. producers generally followed the same trend as U.S. consumption of such tubes, declining steadily throughout recent years. Annual shipments declined from 232 million units, valued at $225 million, in 1969 to 133 million units, valued at $152 million, in 1973. These shipments amounted to 25 million units, valued at $29 million, in January-March 1974, compared with 33 million units, valued at $38 million, for the corresponding period in 1973.

U.S. imports of receiving tubes (based on quantity) declined steadily from 49 million units in 1969 to 35 million units in 1973. However, the value of the imports, after declining from $18.4 million in 1969 to $17.6 million in 1970 increased steadily to $18.8 million in 1973. For January-March 1974 imports amounted to 6.2 million units, valued at $3.6 million, as compared with 9.5 million units, valued at $4.9 million in the like period 1973. In terms of quantity, the share of annual domestic consumption of receiving tubes supplied by imports increased from 18.1 percent in 1969 to 21.6 percent in 1971 and then declined slightly in 1972 to 20.8 percent. In 1973 imports as a percent of consumption amounted to 22.3 percent. The share accounted for by imports in January-March 1974 amounted to 21.6 percent as compared with 23.8 percent

in the corresponding period in 1973. Table 3 shows the U.S. rates of duty and the value of U.S. imports of electronic receiving tubes during the period 1964-73; data on imports for earlier years are not available.

In addition to imports of electronic receiving tubes per se, substantial quantities are imported as parts of imported television receivers, the principal consumer electronic products in which receiving tubes have been used in recent years. The following table, based partially on estimates, shows that imports of tubes, as components of imported television receivers, increased from 53.9 million tubes in 1969 to 62.4 million in 1972 and then declined to 46.9 million in 1973.

Total number of electronic receiving tubes contained in imported television receivers, based on average tube complement and imports of television receivers, 1969-1973

Year	Imports		Average tube complement 1/		Total number of tubes contained in imported television receivers 1/
	Color receivers	Black and white receivers	Color receivers	Black and white receivers	
	1,000 units	1,000 units	Units per set	Units per set	Million units
1969----	912	3,121	18	12	53.9
1970----	914	3,596	16	11	54.2
1971----	1,281	4,166	12	11	61.2
1972----	1,318	5,056	9	10	62.4
1973----	1,399	4,987	5	8	46.9

1/ Estimated.

Source: Compiled from data provided by a domestic producer in combination with official statistics of the U.S. Department of Commerce.

As indicated in the table below, imports of receiving tubes entered under TSUS item 807.00 (primarily units assembled by foreign subsidiaries of U.S. firms in Taiwan) increased in 1972 from the previous year's level and then declined substantially in 1973. There were no imports reported under this classification in 1969 and 1970. Imports entered under item 807.00 (based on value) accounted for a very small portion of total imports in 1973. The share of the total value of the imports under item 807.00 accounted for by U.S. components increased from 16 percent in 1971 to 31 percent in 1973. However, this share is expected to decline in the future as U.S.- and foreign-owned firms increase production of parts for electronic receiving tubes in the Far East.

Electronic receiving tubes: U.S. imports entered under item 807.00, 1969-73

Item	1969	1970	1971	1972	1973
Quantity----------units--	-	-	40,000	761,855	41,853
Total value---------dollars--	-	-	9,281	219,586	32,888
Value of U.S. components, duty exempt----------dollars--	-	-	1,486	45,114	10,215
Foreign value added----------dollars--	-	-	7,795	174,472	22,673

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

Television receivers

Apparent U.S. consumption of television receivers (monochrome and color) increased from 12.6 million units, valued at

$2.1 billion, in 1969 to 16.5 million units, valued at $2.7 billion, in 1973 (table 4). Imports as a percent of consumption (based on quantity) increased from 32 percent in 1969 to 39 percent in 1971 and has since remained at that level. Based on value, imports as a percent of consumption generally followed the same trend as units, increasing from 14 percent in 1969 to 19 percent in 1972 and 1973.

U.S. producer's shipments of domestically produced television receivers (monochrome and color) declined slightly from 8.7 million units, valued at $1.9 billion, in 1969 to 8.3 million units, valued at $1.7 billion in, 1970 and then increased annually to 10.4 million units, valued at $2.3 billion, in 1973.

During 1969-73, annual U.S. imports of television receivers (monochrome and color) increased each year--rising from 4.0 million units, valued at $296 million, in 1968 to 6.4 million units, valued at $531 million, in 1973 (table 4). The rates of duty and the value of imports of television receivers during 1964-73 are shown in table 5; data on imports in earlier years are not available.

As indicated in the table below, imports of television receivers entered under tariff item 807.00 (primarily units assembled by foreign subsidiaries of U.S. firms in Taiwan and Mexico) increased during 1969-73. Imports entered under item 807.00 accounted for 26 percent of total imports in 1973, compared with 16 percent in 1969 (based on value).

Television receivers: U.S. imports entered under item 807.00, 1969-73

Item	1969	1970	1971	1972	1973
Quantity----------1,000 units--	940	1,197	1,423	2,765	2,703
Total value-------million dollars--	47.0	56.1	71.9	144.5	139.3
Value of U.S. components, duty exempt----------million dollars--	17.7	19.7	22.4	30.5	25.0
Foreign value added, dutiable----------million dollars--	29.3	36.4	49.5	114.0	114.3

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

Semiconductors

There are three major types of semiconductors--transistors, diodes, and integrated circuits. None of these devices contain mounts of the type covered in this investigation. Substitution of semiconductors for tubes has become increasingly important due to the introduction of new products utilizing these components and technological improvements in existing products. In recent years, integrated circuits have been used widely in place of transistors, diodes, and electronic receiving tubes. Thousands of transistors and diodes, as well as large quantities of passive components, such as resistors, capacitors, and inductors, may be displaced by a single integrated circuit array.

U. S. consumption of semiconductors increased by 38 percent in quantity during 1969-72 (U. S. shipment data for 1973 is not available from the U. S. Department of Commerce). Apparent consumption of semiconductors declined from 4. 3 billion units, valued $1. 0

billion in 1969 to about 3.9 billion units, valued at $1.1 billion, in both 1970 and 1971, and then rose markedly to 5.9 billion units valued at $1.4 billion, in 1972 (table 6). The growth, both absolute and relative, in the importance of integrated circuits is shown in the following table.

Share of apparent U.S. consumption of semiconductors, by types, 1969-72 1/

Type	1969	1970	1971	1972
	Percent of total quantity			
Integrated circuits	2/	13	17	20
Transistors	38	36	36	42
Diodes	2/	51	47	38
Total	100	100	100	100
	Percent of total value			
Integrated circuits	2/	42	50	61
Transistors	42	38	34	28
Diodes	2/	20	16	11
Total	100	100	100	100

1/ U.S. shipment data for 1973 from the U.S. Department of Commerce is not available.

2/ Not separately available.

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

U.S. producers' shipments of semiconductors decreased from 3.2 billion units, valued at $1.2 billion, in 1969 to 2.7 billion units, valued at $1.1 billion, in 1971. In 1972 both quantity and value increased to 3.4 billion units, valued at $1.3 billion.

Imports generally increased from 1.5 billion units, valued at $104 million, in 1969 to 4.7 billion units, valued at $586 million, in 1973. The ratio of imports to consumption rose steadily during 1969-72; it increased from 36 percent in 1969 to 51 percent in 1972 in terms of volume, and from 10 percent in 1969 to 22 percent in 1972 in terms of value. Table 7 shows the rates of duty and the value of imports of semiconductors during 1964-73; data on imports for earlier years are unavailable.

The great bulk of U.S. imports of semiconductors in recent years has been classified under TSUS items 806.30 and 807.00 and was entered by a few U.S. firms, principally * * *, * * *, and * * *. As shown in table 8, these imports accounted for 89 percent, in terms of quantity, and 84 percent, in terms of value, of total imports of semiconductors in 1969 (1.5 billion units, valued at $104.3 million, table 6). This compares with 73 percent and 70 percent, respectively, of total imports of semiconductors in 1973 (4.7 billion units, valued at $586 million, table 6). However, such imports increased irregularly from 1.4 billion units, valued at $87 million, in 1969 to 3.5 billion units, valued at $408 million, in 1973 (table 9).

Shipment, import, export, and consumption statistics for transistors, diodes, and integrated circuits are shown in tables 10, 11, and 12, respectively.

A-15 through A-28

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STATISTICAL APPENDIX

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Table 2.--Electronic receiving tubes: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, 1969-73, January-March 1973, and January-March 1974

(Quantity in millions of units; value in millions of dollars)

Period	Producers' shipments 1/	Imports 2/	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1969	232.2	48.7	11.9	269.0	18.1
1970	184.7	46.7	12.7	218.7	21.4
1971	177.4	46.0	10.7	212.7	21.6
1972	159.9	39.4	9.8	189.5	20.8
1973	133.4	35.4	9.9	158.9	22.3
January-March--					
1973	33.2	9.5	2.7	40.0	23.8
1974	25.3	6.2	2.8	28.7	21.6
	Value				
1969	225.0	18.4	13.2	230.2	8.0
1970	200.2	17.6	13.3	204.5	8.6
1971	197.4	18.0	12.7	201.2	8.9
1972	178.4	18.7	12.9	184.2	10.2
1973	3/ 152.1	18.8	12.4	158.5	11.9
January-March--					
1973	3/ 37.8	4.9	3.1	39.6	12.4
1974	3/ 29.1	3.6	3.4	29.3	12.3

1/ Compiled from sales data supplied by the Electronic Industries Association and average prices derived from U.S. Department of Commerce estimates.

2/ Total imports adjusted by U.S. Tariff Commission to delete imports of mounts entered under TSUSA item 687.6010 (estimated). See C.I.E. N-95/73 dated Mar. 6, 1973.

3/ Estimated by the U.S. Tariff Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 3.--Electronic receiving tube mounts and tubes: U.S. rates of duty and imports for consumption, 1964-73

Year	Rate of duty	Imports	
		Mounts	Tubes
	Percent ad valorem	Million dollars	Million dollars
1964	12.5	1/	15.2
1965	12.5	1/	25.7
1966	12.5	1/	33.3
1967	12.5	1/	21.3
1968	11.0	0.3	18.9
1969	10.0	.3	18.4
1970	8.5	.6	17.6
1971	7.0	4.9	18.0
1972	6.0	9.0	18.7
1973	6.0	10.3	18.8

1/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce and from data supplied to the U.S. Tariff Commission by importers of electronic receiving tube mounts in response to the Commission's questionnaire.

Table 4.--Television receivers: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, 1969-73

(Quantity in thousands of units; value in millions of dollars)

Year	Shipments	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1969	8,721	4,033	157	12,597	32
1970	8,308	4,510	126	12,692	36
1971	8,740	5,447	162	14,025	39
1972	10,219	6,374	224	16,369	39
1973	1/ 10,400	6,386	314	16,472	39
	Value				
1969	1,852	296	33	2,115	14
1970	1,714	315	26	2,003	16
1971	1,976	413	37	2,352	18
1972	2,248	497	59	2,686	19
1973	1/ 2,300	531	84	2,747	19

1/ Estimated by the U.S. Tariff Commission.

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

Table 5.--Television receivers: U.S. rates of duty and imports for consumption, 1964-73

Year	Rate of duty	Imports		
		Monochrome	Color	Total
	Percent ad valorem	Million dollars	Million dollars	Million dollars
1964	10	1/	1/	39
1965	10	1/	1/	60
1966	10	1/	1/	115
1967	10	1/	1/	124
1968	9	97	106	204
1969	8	152	143	296
1970	7	174	142	316
1971	6	208	205	413
1972	5	262	235	497
1973	5	269	262	531

1/ U.S. imports of monochrome and color television receivers were not separately reported in official statistics prior to 1967.

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

Note.--Because of rounding, figures may not add to the totals shown.

Table 6.--Semiconductors: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption 1969-73

(Quantity in millions of units; value in millions of dollars)

Year	U.S. producers' shipments	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1969	3,233.3	1,534.4	497.1	4,270.6	35.9
1970	2,977.9	1,464.8	544.7	3,898.0	37.6
1971	2,655.7	1,516.3	331.3	3,840.7	39.5
1972	1/ 3,393.7	2,979.4	468.6	5,904.6	50.5
1973	2/	4,713.7	779.6	2/	2/
	Value				
1969	1,154.0	104.3	211.0	1,047.3	10.0
1970	1,141.1	157.2	246.0	1,052.3	14.9
1971	1,140.7	179.1	191.2	1,128.6	15.9
1972	1,342.4	316.4	229.6	1,427.3	22.2
1973	2/	585.9	417.2	2/	2/

1/ Estimated by the U.S. Tariff Commission.
2/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Table 7.--Semiconductors, by type: U.S. rates of duty and imports for consumption, 1964-73

Year	Rate of duty	Imports			
		Transistors	Diodes	Integrated circuits	Total
	Percent ad valorem	Million dollars	Million dollars	Million dollars	Million dollars
1964	12.5	5.6	1/	1/	8.4
1965	12.5	15.1	1/	1/	24.3
1966	12.5	28.7	1/	1/	42.2
1967	12.5	26.7	1/	1/	43.4
1968	11.0	44.7	1/	1/	71.5
1969	10.0	59.0	1/	1/	104.3
1970	8.5	59.8	27.9	69.4	157.2
1971	7.0	60.4	24.5	94.2	179.1
1972	6.0	100.1	35.9	180.5	316.4
1973	6.0	159.8	69.2	356.9	585.9

1/ Not separately available.

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

Note.--Because of rounding, figures may not add to the totals shown.

Table 8.--Semiconductors: Share of total U.S. imports represented by imports under TSUS items 806.30 and 807.00, by types, 1969-73

Type	1969	1970	1971	1972	1973
	Percent of total quantity				
Integrated circuits	1/ 2/ 86	97	85	80	64
Transistors	92	91	86	87	75
Diodes	2/	)		(81	81
Rectifiers	2/	3/ 86	)3/ 82	(88	72
Other	2/	)		(81	68
Average	89	90	84	84	73
	Percent of total value				
Integrated circuits	1/ 2/ 81	95	87	79	70
Transistors	86	89	87	82	73
Diodes	2/	)		(61	57
Rectifiers	2/	3/ 72	)3/ 69	(88	77
Other	2/	)		(66	56
Average	84	88	85	79	70

1/ Data do not include integrated circuits imported under TSUS item 806.30.

2/ Data on diodes, rectifiers, and other semiconductors are included with those on integrated circuits.

3/ Data on diodes, rectifiers, and other semiconductors are aggregated.

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

Table 9.--Semiconductors: Total U.S. imports under TSUS items 806.30 and 807.00, by types, 1969-73

Type	1969	1970	1971	1972	1973
	Quantity (million units)				
Integrated circuits	1/ 2/ 718.2	240.5	275.0	538.7	697.2
Transistors	646.3	548.1	481.7	1,223.3	1,529.1
Diodes	2/	3/ 529.9	3/ 517.7	577.1	970.8
Rectifiers	2/			72.2	164.6
Other	2/			86.9	102.0
Total	1,364.5	1,318.5	1,274.5	2,498.2	3,463.7
	Value (million dollars)				
Integrated circuits	1/ 2/ 36.6	65.8	82.6	143.0	249.3
Transistors	50.7	53.1	52.8	81.8	116.1
Diodes	2/	3/ 20.2	3/ 16.8	12.6	23.0
Rectifiers	2/			7.5	11.0
Other	2/			4.4	8.2
Total	87.3	139.1	152.2	249.4	407.6

1/ Data do not include integrated circuits imported under TSUS item 806.30. In 1969 the value was about $20.3 million.

2/ Data on diodes, rectifiers, and other semiconductors are included with those on integrated circuits.

3/ Data on diodes, rectifiers, and other semiconductors are aggregated.

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

Note.--Because of rounding, figures may not add to the totals shown.

Table 10.--Transistors: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, 1969-73

(Quantity in millions of units; value in millions of dollars)

Year	Shipments	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1969	1,192.3	701.4	280.2	1,613.5	43.5
1970	1,064.4	602.3	249.5	1,417.2	42.5
1971	969.2	559.7	139.6	1,389.3	40.3
1972	1,259.0	1,408.3	212.3	2,455.0	57.4
1973	1/	2,038.3	351.2	1/	1/
	Value				
1969	460.5	59.0	83.1	436.4	13.5
1970	435.8	59.8	88.9	406.7	14.7
1971	372.0	60.4	50.3	382.1	15.8
1972	406.1	100.1	61.3	444.9	22.5
1973	1/	159.8	94.6	1/	1/

1/ Not available.

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

Table 11.--Diodes: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, 1969-73

(Quantity in millions of units; value in millions of dollars)

Year	Shipments	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1969	1,762.4	1/	162.0	1/	1/
1970	1,621.8	613.8	229.2	2,006.4	30.6
1971	1,299.0	633.1	137.5	1,794.6	35.3
1972	1,529.7	901.2	163.8	2,267.1	39.8
1973	2/	1,579.1	254.0	2/	2/
	Value				
1969	234.8	1/	55.5	1/	1/
1970	240.7	27.9	57.3	211.3	13.2
1971	200.8	24.5	49.6	175.7	13.9
1972	237.0	35.9	64.7	208.2	12.7
1973	2/	69.2	104.9	2/	2/

1/ Not separately available.
2/ Not available.

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

Table 12.--Integrated circuits: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, 1970-73

(Quantity in thousands of units; value in thousands of dollars)

Year	Shipments	Imports	Exports	Apparent consumption	Ratio (percent) of imports to consumption
	Quantity				
1970	291,701	248,710	66,004	474,407	52.4
1971	387,495	323,458	54,211	656,742	49.3
1972	1/ 605,000	669,974	92,483	1,182,491	56.7
1973	2/	1,096,354	174,389	2/	2/
	Value				
1970	464,607	69,444	99,768	434,283	16.0
1971	567,925	94,248	91,243	570,930	16.5
1972	699,296	180,459	105,541	774,214	23.3
1973	2/	356,851	217,723	2/	2/

1/ Estimated by the U.S. Tariff Commission.
2/ Not available.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Note.--Data for integrated circuits are not differentiated from other semiconductors in 1969 and, thus, are not available.

A-42 through 51

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