

BOLTS, NUTS, AND LARGE SCREWS OF IRON OR STEEL

**Report to the President on
Investigation No. TA-201-37
Under Section 201 of the Trade Act
of 1974**



**USITC PUBLICATION 924
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UNITED STATES INTERNATIONAL TRADE COMMISSION

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NEWS

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USITC FINDS U.S. INDUSTRY INJURED BY IMPORTS OF BOLTS, NUTS, AND LARGE SCREWS OF IRON OR STEEL

Higher Import Duties Recommended

The United States International Trade Commission today reported to the President its determination, by a 2-to-1 vote, that imports of bolts, nuts, and large screws of iron or steel are a substantial cause of serious injury, or the threat thereof, to the domestic industry.

Commissioners George M. Moore and Catherine Bedell determined in the affirmative, with Commissioner Moore finding the domestic industry threatened with serious injury and Commissioner Bedell finding serious injury already present. Vice Chairman Bill Alberger voted in the negative. Commissioner Paula Stern not having participated in the case abstained. Chairman Joseph O. Parker did not participate.

The Commission also recommended that ad valorem rates of duty be imposed on all the articles at a level of about 20 percent during the first 2 years of import relief and 15, 10, and 10 percent, respectively for the subsequent 3 years. Commissioner Alberger recommended no remedy, and Commissioners Parker and Stern did not participate.

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OF IRON OR STEEL

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Imports of the articles to the United States have increased, and their value this year will total approximately \$325 million. Japan is the major source, accounting for about 70 percent of annual imports.

Domestic shipments from about 180 establishments during 1978 will approach \$1.2 billion in value. Primary production facilities are concentrated in the Midwest, with Ohio, Illinois, Michigan, and Pennsylvania responsible for more than 50 percent of domestic manufactures. There are more than 13,000 workers involved in the domestic industry.

The Commission's investigation began August 3, 1978, following receipt of a resolution of the House Committee on Ways and Means requesting a reinvestigation. The resolution requested that pursuant to the Trade Act of 1974, the Commission make an investigation to determine whether bolts, nuts, and large screws of iron or steel are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article.

The Commission instituted the present investigation after determining that good cause exists, within the meaning of section 201(e) of the Trade Act of 1974, for a reinvestigation on the articles less than 1 year from the date the Commission reported to the President the results of its previous investigation (No. TA-201-27) on the same subject.

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OF IRON OR STEEL

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The Commission's report, Bolts, Nuts, and Large Screws of Iron or Steel (USITC Publication 924), contains the views of the Commissioners and information developed in the investigation (No. TA-201-37). Copies may be obtained by calling (202) 523-5178 or from the Office of the Secretary, 701 E Street NW., Washington, D.C. 20436.

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REPORT TO THE PRESIDENT

United States International Trade Commission
November 3, 1978.

TO THE PRESIDENT:

In accordance with section 201(d)(1) of the Trade Act of 1974 (88 Stat. 1978), the United States International Trade Commission herein reports the results of an investigation relating to bolts, nuts, and large screws of iron or steel.

The investigation to which this report relates (investigation No. TA-201-37) was undertaken to determine whether--

lag screws or bolts, bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, nuts, and screws having shanks or threads over 0.24 inch in diameter, all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, 646.63, and 646.79 of the Tariff Schedules of the United States (TSUS),

are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article.

The Commission instituted the investigation under the authority of section 201(b)(1) of the Trade Act on August 3, 1978, following receipt on June 9, 1978, of a resolution of the Committee on Ways and Means of the House of Representatives and after determining that there was "good cause" within the meaning of section 201(e) of the Trade Act to investigate the same subject matter as a previous investigation within 1 year of a

report to the President on the results of such previous investigation. The report on the previous investigation was transmitted to the President on December 12, 1977. 1/

The Commission held a public hearing in connection with the investigation on September 11 and 12, 1978, in Euclid, Ohio. All interested parties were afforded an opportunity to be present, to present evidence, and to be heard at the hearing.

The Commission published a notice advising of receipt of the Ways and Means Committee resolution and giving interested persons an opportunity to comment on the "good cause" question in the Federal Register of June 28, 1978 (43 F.R. 28057). Interested persons were given until July 19, 1978, to comment. Notice of the institution of the investigation and of the scheduling of a public hearing was duly given by publishing notice thereof in the Federal Register of August 15, 1978 (43 F.R. 36145). Notice of the change in time and place of public hearing from September 6, 1978, to September 11, 1978, was published in the Federal Register of August 24, 1978 (43 F.R. 37772).

The information in this report was obtained from fieldwork and interviews by members of the Commission's staff, from other Federal agencies, from responses to the Commission's questionnaires, from information presented at the public hearing, from briefs submitted by interested parties, and from the Commission's files.

1/ See Bolts, Nuts, and Large Screws of Iron or Steel: Report to the President on Investigation No. TA-201 27 . . . , USITC Publication 847, December 1977.

A transcript of the hearing and copies of briefs submitted by interested parties in connection with the investigation are attached. 1/

There were no significant imports of bolts, nuts, and large screws from countries whose imports are presently subject to the rates of duty set forth in column 2 of the TSUS. The import relief recommended herein, therefore, is not addressed to imports from such countries. Certain recommended relief measures would involve the imposition of rates of duty on imports from countries whose imports are currently subject to rates of duty in column 1 which are higher than the rates set forth in column 2. Should such recommended, or any other, rates of duty higher than the column 2 rates be proclaimed by the President, it would be necessary for him to conform column 2 by proclaiming rates therefor that are the same as those proclaimed for column 1 in order to avoid being in violation of our international obligations. 2/

1/ Attached to the original report sent to the President, and available for inspection at the U.S. International Trade Commission, except for material submitted in confidence.

2/ See art. I, General Agreement on Tariffs and Trade (Basic Instruments and Selected Documents, vol. IV, March 1969).

DETERMINATION, FINDINGS, AND RECOMMENDATION
OF THE COMMISSION

Determination

On the basis of the investigation, the Commission determines (Vice Chairman Alberger dissenting, Chairman Parker and Commissioner Stern 1/ not participating) that--

lag screws or bolts, bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, nuts, and screws having shanks or threads over 0.24 inch in diameter, all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, and 646.63 of the Tariff Schedules of the United States (TSUS),

are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, 2/ or the threat thereof, 3/ to the domestic industry producing articles like or directly competitive with the imported articles. The Commission makes no determination with respect to imports of the subject articles from Canada admitted free of duty as original equipment for motor vehicles under item 646.79 of the TSUS. 4/

1/ Commissioner Stern assumed her duties as a Commissioner on Oct. 16, 1978, and was not a Commissioner at the time of the public hearing or during most of the investigative period.

2/ Commissioner Bedell finds serious injury with respect to imports of such articles.

3/ Commissioner Moore finds threat of serious injury with respect to imports of such articles.

4/ Vice Chairman Alberger's negative determination was with respect to all the imported articles under investigation, including these Canadian articles.

Findings and recommendation

The Commission finds and recommends (Vice Chairman Alberger dissenting, 1/ Chairman Parker and Commissioner Stern not participating) that to prevent 2/ or remedy 3/ such injury it is necessary to impose rates of duty (a) in lieu of the present rates of duty with respect to lag screws or bolts and screws having shanks or threads over 0.24 inch in diameter, of iron or steel, provided for in items 646.49 and 646.63 of the TSUS, and (b) in addition to the present rates with respect to bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, and nuts, of iron or steel, provided for in items 646.54 and 646.56 of the TSUS, as follows--

<u>1st</u> <u>year</u>	<u>2d</u> <u>year</u>	<u>3d</u> <u>year</u>	<u>4th</u> <u>year</u> <u>4/</u>	<u>5th</u> <u>year</u> <u>4/</u>
20% ad val.	20% ad val.	15% ad val.	10% ad val.	10% ad val.

1/ Vice Chairman Alberger recommends no remedy.

2/ Commissioner Moore, having found a threat of serious injury, finds and recommends relief necessary to prevent such threatened injury.

3/ Commissioner Bedell, having found serious injury, finds and recommends relief necessary to remedy such injury.

4/ In view of the fact that the rate of duty set forth in col. 1 of the TSUS on lag screws or bolts provided for in item 646.49 of the TSUS is 12.5 percent ad valorem, import relief with respect to such articles provided in accord with this proposal would terminate at the end of the third year.

VIEWS OF COMMISSIONER GEORGE M. MOORE

In the previous Commission investigation (TA-201-27) relating to imports of bolts, nuts, and large screws of iron or steel, I determined that the articles under investigation were being imported into the United States in such increased quantities as to be a substantial cause of the threat of serious injury to the domestic industry. 1/

In my opinion economic conditions affecting the domestic industry (U.S. producers of bolts, nuts, and large screws of iron or steel) have improved somewhat since the last investigation, but not to such an extent as to change my earlier determination.

Since December 1977 imports of the articles which are the subject of this investigation have continued to increase and the ratio of such imports to consumption as well as to domestic production has increased.

Comparing the first six months of 1978 with the corresponding period in 1977, there is little change. Domestic producers' shipments have declined from 631 million pounds to 619 million pounds. Importers' unsold inventories remain high and are growing. Employment and net operating profits of the domestic industry are virtually unchanged. While the price spread between the imported and domestically produced articles has narrowed, imports still undersell the domestic articles by nearly 20 percent.

Since December 1977 the domestic industry has remained depressed and in my opinion is still threatened with serious injury. It is my view that at the present time the effect of the increased imports is the most important cause of such threatened serious injury.

1/ See Bolts, Nuts, and Large Screws of Iron or Steel, Report to the President on Investigation No. TA-201-27, U.S.I.T.C. Publication 847 (December 1977).

Therefore, I have determined that the articles subject to this investigation are being imported into the United States in such increased quantities as to be a substantial cause of the threat of serious injury to the domestic industry producing articles like or directly competitive with such imported articles.

VIEWS OF COMMISSIONER CATHERINE BEDELL

The present investigation, conducted under section 201 of the Trade Act of 1974 (19 U.S.C. 2251), was instituted by the United States International Trade Commission on August 3, 1978, after the Commission determined that there was "good cause" within the meaning of section 201(e) of the Trade Act to reinvestigate the same subject matter within 1 year of reporting to the President the results of the prior investigation. 1/

In the present investigation, as in the prior investigation, the Commission is required to determine whether lag screws or bolts, bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, nuts, and screws having shanks or threads over 0.24 inch in diameter, all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, 646.63, and 646.79 of the Tariff Schedules of the United States (TSUS), are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article.

1/ As a result of the prior investigation, No. TA-201-27, on bolts, nuts, and large screws of iron or steel, I made an affirmative determination. (Bolts, Nuts, and Large Screws of Iron or Steel: Report to the President on Investigation No. TA-201-27. . . USITC Publication 847, December 1977.) A more detailed account of the procedural history of the present investigation, including the "good cause" determination, and of prior investigations is set forth in the introduction section of this report, which follows the views of the Commission.

The Trade Act of 1974 requires that each of the following conditions be met before an affirmative determination can be made:

- (1) There are increased imports (either actual or relative to domestic production) of an article into the United States;
- (2) A domestic industry producing an article like or directly competitive with the imported article is seriously injured, or threatened with serious injury; and
- (3) Such increased imports of an article are a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article.

Determination

After considering all the information before me in this investigation, I have again determined, as in the prior investigation, that lag screws or bolts, bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, nuts, and screws having shanks or threads over 0.24 inch in diameter, all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, and 646.63 of the TSUS, are being imported into the United States in such increased quantities as to be a substantial cause of serious injury to the domestic industry producing articles like or directly competitive with the imported articles.

I have made no determination with respect to the bolts, nuts, and large screws imported duty-free from Canada as original motor-vehicle equipment and provided for in item 646.79 of the TSUS. There is insufficient information at this time, in my opinion, for me to make a determination with respect to these Canadian articles. These Canadian articles will not be further discussed in these views.

The domestic industry

It is my view that the domestic industry producing articles like or directly competitive with the imported articles consists of the facilities in the United States devoted to the production of bolts, nuts, and large screws of iron or steel.

Increased imports

The first of the three criteria requires a finding that there are increased imports. The Trade Act provides, in section 201(b)(2)(C), that an increase in imports has occurred when the increase is "either actual or relative to domestic production." Thus, the requirement is satisfied when the increase is in actual or absolute terms or when the level of imports is declining in actual terms but is increasing relative to domestic production.

Imports have increased in actual terms in every year since 1969 except during 1971 and 1975, when strong cyclical contractions occurred in U.S. production of durable manufactured goods. U.S. imports increased from 372 million pounds in 1969 to 776 million pounds in 1974, declined to 535 million pounds in 1975, and then increased to 704 million pounds in 1976 and 717 million pounds in 1977. U.S. imports in January-June 1978 totaled 421 million pounds, 13 percent higher than in the corresponding period of 1977. The ratio of imports to production has increased rapidly since 1969, rising from 25 percent in 1969 to 63 percent in 1977. The ratio was 69 percent during January-June 1978. Thus, imports, which I found to be increasing at the time that I made my December 1977 determination, have continued to increase at a fairly rapid rate as measured in both actual and relative terms. The information clearly shows that this first criterion is satisfied.

Serious injury

The second criterion concerns the question of whether the domestic industry is suffering "serious injury, or the threat thereof." The Trade Act does not define the term "serious injury" but instead provides guidelines in the form of economic factors which the Commission is to take into account. Section 201(b)(2) of the Trade Act provides that the Commission, in determining whether there is serious injury, is to take into account "all economic factors which it considers relevant, including (but not limited to). . .the significant idling of productive facilities in the industry, the inability of a significant number of firms to operate at a reasonable level of profit, and significant unemployment or underemployment within the industry. . . ."

The information before me clearly shows that the domestic industry is seriously injured. A significant portion of domestic productive facilities within the domestic industry are presently idle. Capacity utilization and domestic production have registered pronounced declines in recent years. Capacity utilization for firms producing bolts, nuts, and large screws declined precipitously from 77 percent in 1974 to 52 percent in 1975 and 51 percent in 1976. Although the utilization rate rose slightly to 53 percent in 1977 and to 57 percent in January-June 1978, a significant portion of domestic productive facilities have continued to be idle, despite several good years recently for the automotive industry, which is the largest U.S. market for these products. At least five sizable producing establishments were closed during the past year.

Profit levels in the industry have declined sharply in recent years. In the most recent 6-month period for which data are available -- January-June

1978 -- 6 of the 37 responding producers indicated that they incurred losses in their fastener operations and 9 indicated that their profit ratios (ratio of net operating profit to net sales) were between 0 and 6 percent. In 1974, only 1 of 44 responding domestic producers operated at a loss, and in the years 1975, 1976, and 1977, 4 responding producers operated at a loss. In 1974 and 1975, 5 responding firms indicated having profit ratios in the 0 to 6 percent range, and in 1976 and 1977, 7 and 11 firms, respectively, indicated having profit ratios in the 0 to 6 percent range. Thus, it continues to be clear -- as it was in December 1977 when the last determination was made -- that a significant number of firms in the industry are unable to operate at a reasonable level of profit.

The overall profit ratio for the industry was 7.9 percent in the period January-June 1978, slightly above the 7.6 overall ratio for calendar year 1977, but well below the ratios of 17.1, 14.7, and 11.4 percent recorded in the years 1974, 1975, and 1976. It is my concern, for two reasons, that these ratios, especially the most recent, do not accurately portray conditions in the industry but rather make the industry appear to be healthier than it may actually be. First, imports have made their biggest inroads into the market for the more popular types and sizes of fasteners, the so-called "standard" fasteners, the high volume, low profit (per sales dollar) end of the market. As a result, many traditional producers of "standard" fasteners either have been forced out of the fastener market altogether or have been forced into the lower volume, higher profit "special" fastener (i.e., made to order) end of the market. With more and more of domestic production concentrated in the higher profit "special" end of the market, one would

expect overall industry profit ratios to be rising rather than falling. Second, the industry is relatively capital intensive and there are strong indications that firms in the industry are not investing to a sufficient extent in new capital equipment. It appears that much of the industry's capital equipment -- and how much is hard to quantify -- is not being replaced. Because of this, it could be that the industry is, to a degree, liquidating its capital and such capital liquidation is being reflected in the present profit ratios.

Employment has declined sharply from 20,345 production workers in 1969 to 13,450 in 1977. This decline in employment has been most pronounced in recent years; over 4,200 jobs have been lost since 1974. The pattern in man-hours worked is similar.

It is also noted that during the past 3 years 36 petitions for adjustment assistance have been filed with the U.S. Department of Labor from groups of workers who had produced bolts, nuts and large screws. The Secretary of Labor made an affirmative determination on 21 of the 36 petitions. These affirmative findings certified 3,500 workers for adjustment assistance.

Thus, it appears that there is a significant idling of production facilities in the industry, that a significant number of firms in the industry are unable to operate at a reasonable level of profit, and there is significant unemployment among workers in the industry. Therefore, I find the second criterion to be satisfied.

Substantial cause

Section 201(b)(4) of the Trade Act defines the term "substantial cause" to mean "a cause which is important and not less than any other

cause." Thus, increased imports must be both an "important" cause of injury and "not less than any other cause." Section 201(b)(2) further provides that in determining "substantial cause" the Commission "shall take into account all economic factors which it considers relevant, including (but not limited to). . .an increase in imports (either actual or relative to domestic production) and a decline in the proportion of the domestic market supplied by domestic producers."

The information before the Commission clearly shows increased imports to be a substantial cause of serious injury to the domestic industry. As noted above, imports have increased both actually and relative to domestic production. Furthermore, the proportion of the domestic market supplied by imports increased from 22 percent in 1969 to 36 percent in 1974, 43 percent in 1976 and 1977, and 45 percent in January-June 1978.

Persons opposed to the granting of import relief have alleged that factors other than imports are a more important cause of injury to the domestic industry. Such factors include the past recession, domestic producers' emphasis on the original-equipment-manufacturer market rather than the distributor market, and certain production inefficiencies. I have considered those factors and have concluded that, even though they may have contributed in part, imports have been a "substantial" cause of injury within the meaning of the statute.

Both the ratio of imports to domestic production and the ratio of imports to apparent consumption have risen continuously since 1969. Imports have acquired an increasing market share in both good and bad economic years. A Commission survey indicates that price, rather than shortcomings in or a

shortage of the domestic articles, has been the major factor contributing to this increasing market share by imports.

In view of the above, I conclude that imports are a substantial cause of serious injury and that the third criterion is satisfied.

Conclusion

After considering all of the information developed during this investigation, I conclude that all three of the statutory criteria are satisfied and therefore make an affirmative injury determination.

VIEWS OF COMMISSIONERS GEORGE M. MOORE
AND CATHERINE BEDELL ON REMEDY .

Section 201(d)(1) of the Trade Act requires that if the Commission makes an affirmative determination under section 201(b), it is to find the amount of import relief necessary to prevent or remedy such injury or, if it finds that adjustment assistance can effectively remedy the injury, it is to recommend the provision of such assistance. Thus, the relief which the Commission may recommend is (1) an increase in or imposition of a duty or import restriction or (2) adjustment assistance. The purpose of such relief, as stated by the Senate Finance Committee in its report on the bill which became the Trade Act, is to give the domestic industry "sufficient time to adjust to the freer international competition." 1/

In the last investigation we found that, because of the widespread and persistent underselling of the domestic articles by imports -- underselling which averaged about 30 percent -- a sizable tariff increase was necessary to prevent or remedy the serious injury. Specifically, we found and recommended that the rates of duty on the subject bolts, nuts, and large screws should be increased to or by 30 percent ad valorem, as the case may be, during the first 2 years of the relief, with such relief to be phased down over the next 3 years and terminated after the fifth year.

1/ Trade Reform Act of 1974: Report of the Committee on Finance. . . , S. Rept. No. 93-1298 (93d Cong., 2d sess.), 1974, p. 119.

Since making our determination in the last investigation, we find that the price differences between imported and domestically produced articles has narrowed to about 20 percent. Increasing prices of Japanese- and Taiwanese-made fasteners account primarily for the decreased level of underselling in the U.S. market. Furthermore, these rising prices appear to result from the appreciation of the yen and a tightened steel market in Japan. Using a cost-equalization approach, a smaller tariff increase is now necessary to prevent or remedy serious injury to the domestic industry.

Consequently, we find and recommend that to prevent or remedy such injury it is necessary to impose rates of duty (a) in lieu of the present rates of duty with respect to lag screws or bolts and screws having shanks or threads over 0.24 inch in diameter, of iron or steel, provided for in items 646.49 and 646.63 of the TSUS, and (b) in addition to the present rates with respect to bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, and nuts, of iron or steel, provided for in items 646.54 and 646.56 of the TSUS, as follows --

<u>1st</u> <u>year</u>	<u>2d</u> <u>year</u>	<u>3d</u> <u>year</u>	<u>4th</u> <u>year</u>	<u>5th</u> <u>year</u>
20% ad val.	20% ad val.	15% ad val.	10% ad val. <u>1/</u>	10% ad val. <u>1/</u>

The table below presents, by TSUS item, the details of our remedy finding.

1/ Import relief with respect to the lag screws or bolts provided for in item 646.49 of the TSUS would terminate after the third year and the rate of duty on such articles would revert to the present 12.5 percent ad valorem.

Bolts, nuts, and large screws of iron or steel: Proposed rates of duty necessary to prevent or remedy serious injury

(Rate in percent ad valorem, except where otherwise noted)

TSUS item No.	Present rate	Proposed full in- cremental rate increase	Proposed rate in effect--				
			1st	2d	3d	4th	5th
			year	year	year	year	Year
			:	:	:	:	:
646.49 1/	12.5	7.5	20	20	15	2/ 12.5	2/ 12.5
646.54 3/	0.2¢/lb	20	4/ 20	4/ 20	4/ 15	4/ 10	4/ 10
646.56 5/	0.1¢/lb	20	6/ 20	6/ 20	6/ 15	6/ 10	6/ 10
646.63 7/	9.5	10.5	20	20	15	10	10

1/ Lag screws or bolts only.

2/ Import relief with respect to the lag screws or bolts provided for in item 646.49 of the TSUS would terminate after the third year, and the rate of duty on such articles would revert to the present 12.5 percent ad valorem.

3/ Bolts and bolts and their nuts imported in the same shipment.

4/ Plus 0.2¢/lb. The ad valorem equivalent of the present specific rate of duty is less than 1 percent.

5/ Nuts.

6/ Plus 0.1¢/lb. The ad valorem equivalent of the present specific rate of duty is less than 1 percent.

7/ Screws having shanks or threads over 0.24 inch in diameter.

REASONS FOR THE NEGATIVE DETERMINATION
OF COMMISSIONER BILL ALBERGER

On the basis of information obtained in this investigation, I determine that bolts, nuts, and large screws of the types described in the notice are not being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing the like or directly competitive products.

The Trade Act of 1974 requires that each of the following conditions be met before an affirmative determination can be made:

- (1) There are increased imports (either actual or relative to domestic production) of an article into the United States;
- (2) A domestic industry producing an article like or directly competitive with the imported article is seriously injured, or threatened with serious injury; and
- (3) Such increased imports of an article are a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article.

Specifically, I find that the second criterion under Section 201(b)(1), as set forth above, has not been met -- the domestic industry defined below is not seriously injured nor is it threatened with serious injury.

The Domestic Industry

It is my view that the domestic industry producing articles like or directly competitive with the imported articles consists of the facilities

in the United States devoted to the production of bolts, nuts, and large screws of iron or steel.

Increased Imports

It is conceded that imports have increased within the meaning of the Trade Act. U.S. imports for the period of January-June 1978 are 13 percent higher than the corresponding period of 1977. In fact, since 1975 imports have increased steadily, although imports have not yet surpassed the peak of 776 million pounds recorded in 1974. While imports in recent months have declined (perhaps because the President decided not to grant import relief and thereby reduced the speculative activity in anticipation of higher tariffs), the long term trend has unquestionably been toward increased imports.

The U.S. Market

In recent years we have witnessed a reallocation of U.S. producers' capacity from the broadline, standard products to specialty fasteners. It is estimated that in the past 3 years 300 million pounds of capacity has been redirected from standard to specialty items. These specialty products are low volume, high profit-per-unit goods, as opposed to the high volume, low per-unit-profit characteristic of broadline fastener production.

This transformation to the production of specialty goods has resulted in additional expenses to the domestic industry. The expenses incurred in plant cutbacks, product line changes, improved quality controls, more complex production scheduling, and other costly changes, are all an inevitable

consequence of the shift in productive emphasis. The firms which have undergone this transformation have become important suppliers of the U.S. specialty market, including the automotive industry, the largest single consumer of specialty fasteners.

While many domestic manufacturers still gear their operations to standard products, it is obvious that the economic factors we consider under Section 201 have been affected by a shift in domestic production. In discussing these factors, I shall make reference to the significance of changing U.S. production wherever I feel it is relevant to the determination of serious injury.

Serious Injury

The Trade Act does not define the term "serious injury" but does provide guidelines in the form of economic factors. Under Section 201(b)(2) the Commission is to take into account "all economic factors which it considers relevant, including (but not limited to) -- . . . the significant idling of productive facilities in the industry, the inability of a significant number of firms to operate at a reasonable level of profit, and significant unemployment or underemployment within the industry. . . ."

I have also considered and analyzed other economic developments in the industry to determine whether serious injury exists. These include: (1) production, shipments and consumption; (2) productivity; (3) inventories; (4) exports; (5) market share; and (6) prices.

Capacity Utilization -- Producers' capacity has decreased slightly during the past year, primarily because a number of U.S. producers temporarily closed

down facilities. In 1977 the closure of Lamson and Session's Cleveland facility caused a decline in capacity, but in the four years prior to 1977 producers' capacity expanded by 9 percent.

Capacity utilization fluctuated greatly from 1972 to 1977. In the period 1972 to 1974 it increased 71 percent to 77 percent. Raw material shortages affected utilization in 1973-1974, but it remained above 70 percent. In 1975 it dropped sharply to 52 percent. Since 1975, capacity utilization has increased slowly to 57 percent. Further, firms which primarily supply the automotive industry with specialty fasteners have been operating at high levels of capacity utilization during the past three years.

The Commission's data indicates that maximum utilization may be less than 100 percent. In fact, the upper practical limit appears to be closer to 75 percent, because beyond that ratio substantial delivery lead times develop. On this basis, current utilization is about 71 percent of capacity. In any event, it is improving steadily.

Profits -- As the statute directs, I have investigated "the inability of a significant number of firms to operate at a reasonable level of profit". Not only are a significant number of firms operating at or above a reasonable level of profit, but the industry average ratio of net operating profit to net sales has been about equal to or above the averages for all fabricated metal products and all manufacturing corporations for the past 5 years. Specifically, the profit rates for the fastener industry were 9.4 percent in 1973, 17.1 percent in 1974, 14.7 percent in 1975, 11.4 percent in 1976, 7.6 percent in 1977 and 7.9 percent for the first half of 1978. From 1973-77,

the net profit ratios for fasteners averaged 12 percent, while the net profit ratios for fabricated metal products averaged 7.8 percent, and for all manufacturing corporations averaged 8.3 percent.

Some firms in the industry are not currently profitable. Most of these make primarily standard, broadline fasteners. The more successful firms have concentrated in the special fasteners segment, primarily for the original equipment manufacturers. As more firms have entered the special fastener market, competition among domestic firms has increased, and profit levels have declined from what certainly could be considered excessive levels to more normal but still profitable levels.

Employment -- Since 1975 the level of employment has remained constant. In fact, it appears that many firms have experienced difficulties in hiring skilled labor. While employment and man-hours-worked remain well below their peak levels of 1974, recent figures indicate that some of the layoffs have occurred in firms which have made the decision to redirect production into specialty fasteners. In fact, three companies -- Bethlehem Steel Corp., Lamson & Session Co., and R.B. & W., Inc., have accounted for about 70 percent of those establishments which have received worker adjustment assistance.

Production, Shipments, and Consumption -- From 1974 to 1975, there was a sharp decline in production, shipments and consumption of these fasteners. From 1975 through 1977, all three factors show a steady increase, but levels

in 1977 are still well below the 1974 peak levels. The first half of 1978 shows basically steady patterns with very slight downturns in production and shipments and a slight upturn in consumption. Since imports increased significantly in 1978, this is an adverse development, but the declines in production and shipments are really very slight.

Productivity -- Output per man hour has increased steadily since 1969. This increase in productivity is the result of the closing of old facilities and the infusion of capital over the past 9 years. This suggests that the domestic industry is better able to compete with foreign competition than previously.

Inventories -- Since 1975 domestic producers' inventories have dropped while importers' inventories have increased. The ratio of inventories to shipments within the domestic industry is currently between 16 percent and 18 percent. These levels are within an acceptable range, and are considerably below those which prevailed through 1975.

Exports -- U.S. exports have increased every year since 1971, and have risen by 230 percent in the past 9 years. In 1977 they accounted for 18 percent of domestic shipments. These exports consist mostly of special-purpose fasteners sold directly to major Canadian durable goods manufacturers. We have found nothing to indicate that this trend will change. Exports appear to be a growing opportunity to the domestic producers.

Market Share -- Since 1973, the share of the domestic fastener market held by imports has increased from 28 percent to 45 percent. Most of this increase came from 1973 to 1976, with only a small increase since then.

Imports from Japan represented about 74 percent of the total imports and 31 percent of the domestic market in 1977.

Prices -- Our investigation indicates that prices of imported fasteners are generally below domestic prices. This was not true in 1973 and 1974 when serious supply shortages led to very high prices, particularly for imported fasteners. In 1975 and 1976, the price spread was quite large, with certain imported nuts selling at only 26 percent of comparable domestic products. Our most recent price data (April-June 1978) shows the imported products selling between 60 percent and 97 percent of the domestic product. Significant price increases for imported nuts, bolts and large screws have occurred in 1978, and they continue to occur, in part due to appreciation of foreign currencies and a tightened steel market. These factors have been particularly significant in Japan, the major exporter of these fasteners to the United States. The gap in prices is closing and domestic firms should be realizing some of the benefits of this competitive opportunity.

Threat of Serious Injury

Several factors indicate that increased imports do not present a threat of serious injury. Imports are increasing, but at a declining rate. Profits are relatively steady and many firms are increasing their overall profits. The domestic industry has modernized and increased its productivity. Capacity utilization is improving, employment is steady, and consumption appears to be up. Most important, the price spread between domestic and imported fasteners is narrowing greatly. This trend is continuing as foreign currencies appreciate. On the basis of all these factors, I must conclude that no threat of serious injury has been shown.

It is unlikely, given the current international monetary situation and the difficulty of penetrating the OEM market, that the Japanese, or any other exporting nation, will attempt to switch to production of special fasteners for export to the United States. The domestic industry appears to have control and leverage in the specialty area, and should not be threatened with serious injury in this higher profit submarket.

Conclusion

Most economic factors analyzed show conditions in the domestic industry to be improving or remaining at the same levels. For example, production, shipments, capacity utilization and employment show fairly constant levels, but have increased slightly since sharp declines occurred from 1974 to 1975. The price advantage for imported products has narrowed considerably in the last year, and overall profits are at high levels. The domestic industry has lost market share, but a large portion of that occurred during a period of sharply increased demand and near windfall profits. When demand dropped sharply in the recession year of 1975, the domestic industry suffered reduced sales, employment cutbacks and much lower utilization of capacity, but still retained a high profits to sales ratio.

In summation, it is clear from the above analysis that the domestic industry is not suffering "serious injury" as that term is defined in the Trade Act. There are some indications of injury, but those factors are more than balanced by other indications of good health, and thus I find no serious injury or threat thereof.

SUMMARY

Following receipt of a resolution of the House Committee on Ways and Means and after having found good cause to exist for a reinvestigation within 1 year, the Commission instituted investigation No. TA-201-37. The purpose of this investigation is to determine whether bolts, nuts, and large screws of iron or steel are being imported in such increased quantities as to be substantial cause of serious injury, or threat thereof, to the domestic industry producing like or directly competitive articles.

In 1977 the Commission completed investigation No. TA-201-27 on the same imported articles. The Commission made an affirmative determination and recommended import relief in the form of higher tariffs. In February 1978, the President determined that import relief was not in the national economic interest and so advised Congress. An attempt to override the President's decision through use of the congressional veto did not succeed.

In 1975 the Commission conducted investigation No. TA-201-2 on bolts, nuts, and screws of iron or steel. The scope of the 1975 investigation, as defined in the Commission's Notice of Investigation, covered small screws and mine-roof bolts in addition to the bolts, nuts, and large crews covered in the instant investigation, No. TA-201-27.

In the previous investigation, the Commission made a negative determination (Commissioners Minchew and Bedell dissenting in part, Commissioner Parker abstaining). Commissioners Minchew and Bedell voted in the affirmative with respect to bolts (except mine-roof bolts), nuts, and large screws of iron or steel.

U.S. imports rose from 372 million pounds in 1969 to a peak of 776 million pounds in 1974, a year characterized by frenzied demand and an apparent fastener shortage. U.S. imports declined in 1975 to 535 million pounds and then rebounded sharply to 704 million pounds in 1976 and 717 million pounds in 1977. U.S. imports in January-June 1978 totaled 421 million pounds, 13 percent higher than in the corresponding period of 1977. Since 1969 the ratio of U.S. imports to domestic production has never declined.

During 1972-74, U.S. producers experienced increasing capacity utilization (from 71 percent to 77 percent), producers' shipments (from 1.4 billion pounds to 1.6 billion pounds), employment (from 37 million man-hours to 39 million mna-hours), and profit (from \$27 million to \$146 million). The situation changed rapidly in 1975 and for 1975-77 U.S. producers realized decreased capacity utilization (52 percent in 1975 and 53 percent in 1977), producers' shipments (1.1 billion pounds in 1975 and 1.2 billion pounds in 1977), employment (27 million man-hours in 1975 and 28 million man-hours in 1977), and profit (\$100 million, \$79 million, and \$53 million in 1975 through 1977, respectively). The economic performance of the U.S. producers improved moderately during January-June 1978, compared with their performance in the corresponding period of 1977.

During the last 4 years, a wide variance has characterized the specific performance of different U.S. producers. Generally speaking, U.S. producers specializing in the production of low-volume or limited-purpose fasteners have outperformed the broadline manufacturers, which had produced substantial quantities of high-volume, commodity-type fasteners.

During the fastener shortage of 1973 and 1974, imported articles sold at a substantial premium over U.S.-made fasteners. By late 1974, import prices had fallen sharply, and the price inversion had disappeared. By mid-1975 the imported article was priced about 35 to 45 percent lower than domestic articles. These very large price differences did not change fundamentally during 1976 or 1977. Current prices of Japanese- and Taiwanese-made fasteners offered by U.S. importers increased significantly during January-June 1978. Such increases, ranging from 40 to 60 percent on nuts and from 15 to 20 percent on bolts and large screws, appear to emanate from the appreciation of the yen and a tightened steel market in Japan. The average price difference between imported and domestic articles stood at about 15 to 20 percent during April-June 1978.

Apparent consumption increased from 1.8 billion pounds in 1972 to 2.2 billion pounds in 1974 despite slackening activity in many fastener-consuming markets. The result of this paradoxical situation was the large inventories held by producers, importers, and distributors during 1975. Apparent consumption declined sharply in 1975 to 1.4 million pounds and then rebounded to 1.6 million pounds in 1976 and 1.7 million pounds in 1977. Apparent consumption amounted to 928 million pounds during January-June 1978, 4 percent higher than in the corresponding period of 1977. The ratio of imports to consumption never declined during the period, rising from 21 percent in 1969 to 43 percent in 1977.

Those in opposition to the granting of import relief argue that the average ratio of net operating profit to net sales proves the absence of serious injury. They also assert that should the Commission find serious injury to exist, imports would not be a substantial cause of such injury. They suggest two other causes (each more important than imports) for the industry's problems. First, the industry is still suffering from the past recession and particularly from the lack of capital spending within the U.S. economy. Second, U.S. producers have abandoned the distributor market so as to emphasize the more profitable original-equipment manufacturer market. Counsel for the United States Fastener Manufacturing Groups replies that (1) whereas the U.S. economy has staged a strong recovery since 1975, U.S. producers report stagnant production, employment, and profits and (2) U.S. producers were driven out of the distributor market by lower priced imports.

INFORMATION OBTAINED IN THE INVESTIGATION

Introduction

Following receipt on June 9, 1978, of a resolution of the House Committee on Ways and Means, and after soliciting and receiving public comment on the "good cause" issue, the United States International Trade Commission on August 3, 1978, determined good cause to exist within the meaning of section 201(e) of the Trade Act for a reinvestigation within 1 year of the subject merchandise. Accordingly, the Commission instituted an investigation under section 201(b) of the Trade Act of 1974 to determine whether lag screws or bolts, bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, nuts, and screws having shanks or threads over 0.24 inch in diameter, all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, 646.63, and 646.79 of the Tariff Schedules of the United States (TSUS), are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing an article like or directly competitive with the imported article.

A public hearing in connection with the investigation was conducted on September 11 and 12, 1978, in Euclid, Ohio. All interested parties were afforded an opportunity to be present, to present evidence, and to be heard at the hearing.

Public notice of the investigation and hearing was duly given by publishing the original notice in the Federal Register of August 15, 1978 (43 F.R. 36145). On August 21, 1978, the Commission issued a public notice changing the time and place of the hearing from September 6, 1978, to September 11, 1978, and from Cleveland, Ohio to Euclid, Ohio, respectively. Notice of the change of time and place of the hearing was published in the Federal Register of August 24, 1978 (43 F.R. 37772). Copies of the notices were also posted at the U.S. International Trade Commission's offices in Washington, D.C., and New York City.

In 1977, the Commission conducted investigation No. TA-201-27 on bolts, nuts, and large screws of iron or steel. In this investigation, the Commission determined (Commissioner Ablondi dissenting, Vice Chairman Parker and Commissioner Alberger not participating) that lag screws or bolts, bolts (except mine-roof bolts) and bolts and their nuts imported in the same shipment, nuts, and screws having shanks or threads over 0.24 inch in diameter, all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, and 646.63 of the TSUS, are being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or the threat thereof, to the domestic industry producing articles like or directly competitive with the imported articles. The Commission made no determination with respect to imports of Canadian articles admitted free of duty as original equipment for motor vehicles under item 646.79 of the TSUS. The Commission recommended import relief in the form of higher tariffs.

In February 1978, the President determined that import relief was not in the national economic interest and so advised Congress. Concurrent resolutions to disapprove the President's action and, in effect, to direct the President to proclaim the relief recommended by the Commission were introduced in both the House and the Senate. The Subcommittee on International Trade of the Committee on Ways and Means favorably reported H. Con. Res. 485 to such effect to the full Committee in March 1978, but the full Committee on April 27, 1978, rejected the recommendation of the Subcommittee to report out the resolution. No further action was taken regarding the resolutions.

In 1975, the Commission conducted investigation No. TA-201-2 on bolts, nuts, and screws of iron or steel. The 1975 investigation covered small screws and mine-roof bolts in addition to the bolts, nuts, and large screws covered in investigation No. TA-201-27.

In the 1975 investigation, the Commission determined (Commissioners Minchew and Bedell dissenting in part, Commissioner Parker not participating) that wood screws and bolts, nuts, and screws (including bolts and their nuts imported in the same shipment), all the foregoing of iron or steel, provided for in items 646.49, 646.54, 646.56, 646.58, 646.60, 646.63, and 646.79 of the TSUS, were not being imported into the United States in such increased quantities as to be a substantial cause of serious injury, or threat thereof, to the domestic industry producing articles like or directly competitive with the imported articles.

Commissioners Minchew and Bedell determined that the bolts, nuts, and large screws classified under Tariff Schedules of the United States Annotated (TSUSA) item 646.4920 and TSUS items 646.54, 646.56, and 646.63 (except mine-roof bolts classified under item 646.54) were being imported into the United States in such increased quantities as to be a substantial cause of serious injury to the domestic industry producing articles like or directly competitive with the imported articles.

The information contained in this report was obtained from fieldwork, from questionnaires sent to U.S. producers, importers, and distributors, from the Commission's files, from other Government agencies, from information received at the hearing, and from briefs filed by interested parties.

Description and Uses

Bolts, nuts, and large screws, commonly called industrial fasteners, are mechanical devices designed specifically to hold, join, couple, or assemble multiple components. Industrial fasteners have an almost infinite variety of applications. Nearly all U.S. industries require them, whether as maintenance items or as parts for original equipment.

Bolts, nuts, and large screws have historically been classified by major product families for purposes of customs treatment, standardization, and convenience. The one feature common to all these fasteners is the presence of

external threads on the bolts and large screws and internal threads in the nuts. Within each family, subgroupings are made according to head style, thread form, application, and other characteristics. Despite their wide use, the nomenclature applicable to these articles is not universally agreed upon. Certain problems respecting nomenclature and units of quantity are discussed in appendix A.

Bolts and large screws

Bolts and large screws are generally headed at one end and threaded at the other. They are often tightened or released by turning a nut. Lag screws are an exception in that they are tightened or released by torquing their heads. Some common bolt and large screw subgroupings are hex and square bolts, round head bolts, high-strength structural bolts, bent bolts, cap screws, and lag screws.

Nuts

Nuts are perforated metal blocks with internal, or female, threads; they are used with bolts and some screws. Common nut subgroupings are hex and square nuts and locknuts.

Manufacturing Process

Bolts and large screws

Nearly all bolts and large screws less than 1 inch in diameter are cold-forged; cold-forging is a process that conserves energy. Hot-forging is usually required in the manufacture of bolts and screws 1 inch or more in diameter. Today, nearly all screw threads are rolled rather than cut, by squeezing a bolt or screw between reciprocating or rotating dies. Screw machines were replaced by cold-forging equipment in the 1920's and 1930's for the mass production of externally threaded fasteners.

Nuts

Nearly all nut blanks are produced in one of the following ways: cold forming, hot forming, and cold punching. The common method is cold forming, in which the machinery cuts round wire to proper length, shapes the wire into a hexagon nut, and punches the hole. The hot-forming method is similar to cold forming except that the raw material is heated to forging temperature before being fed into the machine. In cold punching, rectangular bar stock is fed into the machine, and in successive steps a hole is punched and countersunk, and the bar is sheared, chamfered, and trimmed.

Regardless of the method employed to produce the nut blank, the tapping operation to produce the thread is generally the same. Nuts three-fourths of an inch in diameter and smaller are tapped in automatic machines, while larger nuts are tapped in hand-fed machines.

Machinery

The machinery (cold headers, trimmers, threaders, boltmakers, nut formers, nut tappers, and so forth) employed by the U.S. fastener manufacturers is highly specialized and can be used only in the production of fasteners and certain components. Only two U.S. firms, National Machinery Co., Tiffin, Ohio, and Waterbury Farrel, a Textron company, Cheshire, Conn., manufacture the highly specialized forging equipment that is the heart of the fastener business.

Secondary operations

Fastener manufacturers perform a variety of secondary operations necessary to meet special user requirements concerning dimensional accuracy and surface finish. Some secondary operations are drilling, slotting, trimming, grinding, turning, pointing, polishing, and plating.

Heat treatment

Manufacturers employ a number of heating and cooling processes to insure the appropriate physical properties in the finished fastener. Some heat-treating processes include quenching, tempering, full annealing, process annealing, carburizing, and dry cyaniding.

Products That Compete With Ferrous Bolts, Nuts, and Large Screws

Many joining techniques compete with ferrous bolts, nuts, and large screws in the product-design marketplace. Despite this competition, no major changes appear to have occurred during the last decade in the relative importance of ferrous bolts, nuts, and large screws vis-a-vis all other fastening techniques. This static condition suggests that most joining applications have one "least cost" solution and that the relative number of different joining applications has remained about the same. A summary of competing joining techniques follows.

Nonferrous threaded fasteners

Fasteners are produced from nonferrous metals when specified functional requirements of the fasteners go beyond the capabilities of the low-cost

ferrous product. Nonferrous fasteners are generally priced three to four times as high as ferrous bolts, nuts, and large screws.

Copper alloy fasteners are strong, resilient, immune to rust, and easily formed. Nickel alloy fasteners are immune to discoloration and corrosion and retain their strength even at high temperatures. Aluminum alloy fasteners have a high strength-to-weight ratio, are easily machined, and resist both atmospheric and chemical corrosion.

Rivets

A rivet is a one-piece device used for permanently fastening a joint. In contrast to threaded fasteners, rivets are destroyed if removed after fastening. Although rivets are usually less expensive per piece than threaded fasteners, the tensile strength of rivets is also lower than that of threaded fasteners, and total cost must be evaluated on a joint-by-joint basis.

Other mechanical fasteners

There are literally thousands of mechanical fasteners that join, couple, or assemble multiple components. A representative sample of these products might include cotter pins, cotters, plastic fasteners, self-clinching fasteners, retaining rings, spring clips, quick-operating fasteners, tapping screws, machine screws, and wood screws.

Fusion joining

The three categories of fusion joining are welding, brazing, and soldering, all of which require the presence of heat during the fastening process. These joining techniques usually require a large input of highly skilled labor, expensive capital equipment, and energy.

U.S. Producers

Approximately 180 establishments specialize in the production of bolts (except mine-roof bolts), nuts, and large screws. These establishments produce a wide variety of fastener products, ranging from high-volume, commodity-type fasteners such as hex and square nuts, anchor bolts, round head bolts, and cap screws to low-volume or limited-purpose fasteners. Since 1968 the number of U.S. producers has increased somewhat, although some long-established, large firms, such as the Bolt and Nut Division of Republic Steel Corp. and National Machine Products of Standard Pressed Steel, have ceased operations. The new entrants, usually small in size, have generally specialized in the production of low-volume or limited-purpose fasteners. For

the purpose of this report, all further references to bolts, nuts, and large screws will exclude nonferrous articles and mine-roof bolts, and "U.S. producers," unless otherwise noted, refers to U.S. producers of bolts, nuts, and large screws.

U.S. producers located in the East North Central region account for the majority of shipments of bolts, nuts, and large screws. The following tabulation indicates the approximate percentage distribution of the value of shipments of these articles, by geographic regions, in 1977:

<u>Region</u>	<u>Percent</u>
New England-----	10.9
Middle Atlantic-----	16.9
East North Central-----	58.1
West North Central-----	1.0
South Atlantic-----	3.5
East South Central-----	4.1
West South Central-----	1.2
Mountain-----	.3
Pacific-----	4.0
Total-----	100.0

Other threaded fastener products manufactured in the United States are mine-roof bolts, aerospace fasteners, and small screws. Each of these product areas require labor skills, productive facilities, and technologies different from those used in the manufacture of bolts, nuts, and large screws.

Eleven domestic firms produce mine-roof bolts, which are very long bolts (generally 4 to 12 feet in length) made on specialized equipment from bar stock (rather than from wire, from which most bolts are made). Four of the firms are integrated steel producers making mine-roof bolts for their captive coal mines. Of the 11 firms, only Bethlehem Steel Corp. and Armco Steel Corp. fabricate other fastener products.

About 35 domestic establishments, primarily in California, produce aerospace fasteners. The U.S. aerospace and defense industries use lightweight fasteners in the assembly of commercial and military aircraft, missiles, space vehicles, and so forth. Most aerospace fasteners are either made from or alloyed with titanium, a very expensive, lightweight metal. On the basis of responses to Commission questionnaires, most aerospace fasteners appear to be nonferrous and therefore not "like" the imported articles covered in this investigation. Those aerospace fasteners which were reported by U.S. producers as being ferrous are estimated to account for no more than 2 percent of the quantity of total domestic shipments of all ferrous fasteners in any given year.

About 100 domestic establishments specialize in the production of small screws, including wood screws, machine screws, tapping and "other" screws less

than one-fourth of an inch in diameter. These manufacturers produce both high-volume, commodity-type fasteners and low-volume or limited-purpose fasteners.

Raw materials

U.S. producers are major consumers of hot-rolled carbon steel wire rod, the staple raw material used in the production of ferrous fasteners. U.S. producers also use stainless steel and other alloy steel wire rod, but to a lesser extent. The cost of steel often constitutes up to 50 percent of the total production cost of ferrous fasteners. U.S. producers obtain about 20 to 25 percent of their steel requirements from foreign sources, primarily from Japan.

Concentration

From 1969 to 1977, concentration in U.S. production of nuts declined, whereas for bolts and large screws it increased from 1969 to 1974 but then declined. The following tabulation summarizes the share of U.S. producers' shipments of these articles accounted for by the four and eight largest U.S. producers for the years 1969, 1974, and 1977 (in percent):

Product and year	:4 largest: :producers:	8 largest :producers:
Bolts and large screws:	:	:
1969-----	27 :	41
1974-----	34 :	51
1977-----	27 :	44
Nuts:	:	:
1969-----	55 :	72
1974-----	39 :	54
1977-----	38 :	54
	:	:

The closing of the National Machine Products plant in Utica, Mich., is a major reason for the sharp decline in the concentration ratios for nuts. This plant had been the largest U.S. producer of nuts prior to its closing in 1971.

Channels of distribution

In 1977, U.S. producers sold about 20 percent of total domestic shipments to distributors for resale and about 80 percent directly to original-equipment

manufacturers (OEM's) such as auto, machinery, and farm equipment manufacturers. Sales to OEM's consist of both high-volume, commodity-type fasteners and low-volume or limited-purpose fasteners. Many U.S. producers also market their products through distributors, which number about 4,000 nationwide. Distributors are often classified according to their product mix and types of customers. The four types of distributors are the fastener specialist, the auto supply wholesaler, the industrial (or mill) supply wholesaler, and the hardware wholesaler. Most distributors are independent, localized business establishments, although some are wholly owned subsidiaries of U.S. producers.

Foreign affiliates

The largest U.S. producers have foreign affiliates primarily in Western Europe and Canada and to a lesser extent in Mexico, Brazil, Argentina, Japan, Australia, the Republic of China (Taiwan), and the Republic of Korea (Korea). At least one major U.S. producer derives 30 percent of net income from foreign operations. However, total sales of foreign affiliates and imports from affiliates by U.S. producers are very small when compared to total U.S. net sales and imports, respectively.

Importers

Approximately 80 firms presently import bolts, nuts, and large screws into the United States. These importers tend to handle the high-volume, commodity-type products often called standard fasteners. However, in recent years importers have upgraded their product line with higher tensile strength fasteners and off-standard products. Importers generally fall into one of the following categories.

Importer-trading companies

Importer-trading companies account for about 15 percent of all fasteners imported into the United States. They sell to U.S. producers and large distributors. This type of importer rarely sells directly to OEM's. The typical importer-trading company has no warehouse facilities and deals only in high-volume transactions that require long lead times. The importer-trading company normally offers the lowest price available on imported fasteners.

Many importer-trading companies are U.S. branches of the large Japanese general trading companies, such as Mitsui & Co., Inc.; C. Itoh & Co., Inc.; Irimaru Co., Inc.; and Okura & Co., Inc. A U.S.-owned importer-trading company is Allied International, Rye, N.Y.

Importer-warehouses

Importer-warehouses handle about 45 percent of all fasteners imported into the United States. Their customers are U.S. producers, large distributors,

and smaller jobbers, such as industrial and automotive supply companies. As a general rule this type of importer does not sell directly to OEM's. Because these firms stock merchandise, in contrast to trading companies, they provide faster delivery and fill smaller customers' orders. The largest importer-warehouses are Heads & Threads Co., Chicago, Ill., and Reynolds Fastener, Greenvale, N.Y.

Importer-distributors

With a current share of about 20 percent of all fasteners imported into the United States, these distributors have significantly increased their role during the past 3 years. The importer-distributor differs only slightly from other fastener distributors that obtain their merchandise from U.S. producers, importer-trading companies, and importer-warehouses. The importer-distributor, like any fastener distributor, is a localized, sales-oriented middleman, usually serving a large number of accounts.

Importer-end users

Importer-end users are responsible for about 10 percent of all fasteners imported into the United States. The largest importer-end users are the auto makers, which imported during January-June 1978 about 35 million pounds of bolts, nuts, and screws entered duty free from Canada as original motor-vehicle equipment.

Importer-producers

Importer-producers directly import about 10 percent of all fasteners entering the United States. In addition, many U.S. producers purchase foreign-made fasteners from other importers. In 1977 about 25 percent of all shipments of imported fasteners were sold to or imported by U.S. fastener producers or their wholly owned distributors. U.S. producers have testified that importing, as opposed to domestic manufacturing, offers very attractive gross profit (transcript of the hearing in investigation No. TA-201-27, p. 84). Witnesses in opposition to the granting of import relief assert that U.S. producers should not complain about imports to the extent that they themselves are responsible for them (transcript of the hearing in investigation No. TA-201-27, p. 257).

U.S. Tariff Treatment

The imported bolts, nuts, and large screws covered by the notice of this investigation are classified under TSUS items 646.49, 646.54, 646.56, 646.63, and 646.79. The present rates of duty range from free (Canadian articles for use as original motor-vehicle equipment) to 12.5 percent ad valorem (lag

screws or bolts). The rates of duty applicable to TSUS items 646.54, 646.56, and 646.63 were reduced during the Kennedy round of trade negotiations held in Geneva during 1964-67. The following table summarizes recent most-favored-nation tariff treatment of articles covered by the notice of this investigation.

Bolts, nuts, and large screws: U.S. col. 1 rates of duty,
Dec. 31, 1967, and July 1, 1977

(Cents per pound; percent ad valorem)

TSUS item No.:	Commodity description	Col. 1 rates applicable on--	
		Dec. 31, 1967	July 1, 1977
646.49	Wood screws (including lag screws or bolts).	12.5%	12.5%
646.54	Bolts and bolts and their nuts imported in the same shipment.	0.5¢	0.2¢
646.56	Nuts-----	0.3¢	0.1¢
646.63	Screws (not including machine screws 0.375 inch or more in length and 0.125 inch or more in diameter) having shanks or threads over 0.24 inch in diameter.	19%	9.5%
646.79	Canadian article for use as original motor-vehicle equipment.	Free	Free

On October 30, 1968, the Commissioner of Customs announced that information had been received pursuant to section 16.24(b) of the Customs Regulations which indicated that certain rebates or refunds granted by the Government of Italy on the exportation of certain steel products constitute the payment of a bounty or grant, directly or indirectly, within the meaning of section 303 of the Tariff Act of 1930, as amended. After consideration of all the information received in the investigation pursuant to section 16.24(d), the Customs Bureau imposed countervailing duties of 13.55 lire per kilo (about 0.6 cent per pound in 1976) on bolts and nuts of iron or steel, and 12.73 lire per kilo (also about 0.6 cent per pound) on galvanized nuts from Italy. Acting on a separate complaint filed on August 7, 1975, by RB&W, Inc., the U.S. Treasury Department instituted an investigation to determine whether similar rebates or refunds were granted by the Government of Italy on the exportation of cap screws. On August 13, 1976, the U.S. Treasury announced that such rebates and refunds were, in fact, bounties or grants and, therefore, imposed a countervailing duty of 15 lire per kilo (about 0.7 cent in 1976) on screws of iron or steel.

In response to a complaint filed on April 19, 1976, by the Industrial Fastener Institute, the U.S. Treasury Department, after a 1-year investigation, imposed countervailing duties on imports of bolts and nuts of iron or

steel from Japan. Effective May 6, 1977, imports of these products were assessed an additional duty of 0.2 percent ad valorem.

Title V of the Trade Act of 1974 authorizes the establishment of a Generalized System of Preferences (GSP) for eligible articles imported from beneficiary developing countries. Effective January 1, 1976, imports of bolts and nuts of iron or steel provided for in TSUS items 646.54 and 646.56 from all designated beneficiary developing countries became eligible for duty-free treatment under the provisions of the GSP. Such duty-free treatment was not extended to imports of large screws, provided for in TSUS items 646.49 and 646.63.

On June 22, 1976, GKN International, Inc., a sizable importer of industrial fasteners, petitioned the Office of the Special Representative for Trade Negotiations for, among other things, the addition of large cap screws, provided for in TSUSA item 646.6320, to the list of eligible articles under the GSP. On February 28, 1977, the Office of the Special Representative for Trade Negotiations announced its denial of the above petition.

The Question of Increased Imports

U.S. imports of bolts, nuts, and large screws of iron or steel cover a very broad range of fastener products and enter primarily from Japan and Canada. The U.S. Department of Commerce currently reports import data on these commodities in terms of pounds and dollars, although prior to January 1, 1978, only dollar statistics were collected for TSUS item 646.79. Prior to January 1, 1975, import data on TSUS items 646.49 and 646.63 were collected in terms of pieces rather than pounds. In 1975 the Commission converted the historical import data from pieces to pounds after conducting a study on the relationship between these alternative units of quantity.

Since 1969, U.S. imports of bolts, nuts, and large screws have increased every year except 1971 and 1975, when strong cyclical contractions occurred in U.S. production of durable manufactured goods (table 1, app. B). U.S. imports rose from 372 million pounds in 1969 to a peak of 776 million pounds in 1974, a year characterized by frenzied demand, an inventory boom, and an apparent fastener shortage. U.S. imports declined in 1975 to 535 million pounds and then rebounded sharply to 704 million pounds in 1976 and 717 million pounds in 1977. U.S. imports in January-June 1978 totaled 421 million pounds, 13 percent higher than in the corresponding period of 1977. The average annual growth rate of U.S. imports for 1969-77 registered 8.5 percent.

U.S. imports for January-February 1978 amounted to 166 million pounds, 36 percent higher than the corresponding period of 1977. Some of this increase was the result of speculative activity in anticipation of higher tariff rates on these articles. On December 8, 1977, the Commission recommended increased rates of duty to the President in connection with investigation No. TA-201-27, bolts, nuts, and large screws of iron or steel. Many importers reacted to

this announcement by accelerating deliveries into the United States so as to avoid possible trade restrictions. U.S. imports declined on a monthly basis after the Presidential decision of February 1978 not to grant import relief to the domestic industry. However, U.S. imports for March-June 1978 were still 2 percent higher than U.S. imports for the corresponding period of 1977.

The value of imports has generally moved in a pattern similar to that of the quantity of imports. However, in 1976 the quantity of imports recovered much more substantially than did the value. The following table summarizes data on U.S. imports since 1969. The ratio of U.S. imports to domestic production has increased rapidly since 1969, as shown in the table on the following page.

Bolts, nuts, and large screws: U.S. imports for consumption, 1969-77,
January-June 1977, and January-June 1978

Period	Quantity	Value	Unit
	: 1,000	: 1,000	: Cents per
	: pounds	: dollars	: pound
1969-----	372,024	69,198	.186
1970-----	400,691	85,900	.214
1971-----	379,248	82,339	.217
1972-----	474,194	113,446	.239
1973-----	776,442	116,348	.214
1974-----	776,442	388,222	.500
1975-----	534,796	227,128	.425
1976-----	704,474	259,790	.369
1977-----	716,916	257,139	.359
January-June--	:	:	:
1977-----	371,859	150,434	.405
1978-----	431,251	181,193	.430
	:	:	:

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

The vast majority of U.S. imports are fabricated from carbon steel. Imports of carbon, alloy, and stainless steel fasteners in 1974 accounted for 97, 2, and 1 percent, respectively, in terms of weight, and for 91, 5, and 4 percent, respectively, in terms of value, of all such imports.

Imported fasteners are distributed throughout the United States. The Ports of New York, Los Angeles, Baltimore, Chicago, New Orleans, and Houston handle the bulk of all U.S. imports. Canadian fasteners, used primarily in the automotive industry, enter the United States through the Port of Detroit.

Bolts, nuts, and large screws: Ratios of U.S. imports for consumption to production, by items, 1969-77, January-June 1977, and January-June 1978

(In percent)

Period	Bolts and large screws	Nuts	Total
1969-----	18	49	25
1970-----	20	56	28
1971-----	22	63	31
1972-----	25	63	33
1973-----	29	77	38
1974-----	38	95	50
1975-----	38	100	50
1976-----	52	107	63
1977-----	53	109	63
January-June--			
1977-----	52	92	60
1978-----	59	94	69

Source: Computed from shipment and inventory data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

In terms of value, Japan has accounted for 60 to 70 percent of all U.S. imports since 1970 (table 2), Canada has accounted for 12 to 22 percent, and West Germany, the United Kingdom, Spain, Taiwan, Italy, India, and the Netherlands have each accounted for 1 to 4 percent.

All industrial and most developing nations have established a fastener industry. As noted above, Japan is the dominant supplier of U.S. imports, with as many as 300 firms producing exclusively for the U.S. market. For January-June 1978, the U.S. Department of Commerce collected data on the foreign trade flow of bolts, nuts, and large screws between the United States and Canada. This data suggest a very balanced trade flow in fasteners between the two countries. In terms of quantity, U.S. exports to Canada totaled 99 million pounds, whereas U.S. imports from Canada amounted to 86 million pounds. In terms of value, Canada enjoyed a slight trade surplus with \$43 million in exports and \$41 million in imports.

To investigate whether new sources of supply are developing for imported fasteners, the Commission compiled import data for the periods January-June 1977 and January-June 1978 from official statistics of the U.S. Department of Commerce. As seen in table 2, U.S. imports from Japan increased from 274 million pounds during the specified period of 1977 to 278 million pounds in the corresponding period of 1978. With this negligible increase in imports, Japan lost appreciable market share, principally to Canada, Taiwan, and India. Whereas Canada has supplied fasteners to the United States for many years, Taiwan and India are relatively new participants in the U.S. market.

Consisting mostly of nuts, U.S. imports from Taiwan jumped from 15 million pounds in January-June 1977 to nearly 32 million pounds during the corresponding period of 1978. U.S. imports from India, most of which are anchor bolts, increased from about 12 million pounds in January-June 1977 to 18 million pounds in the corresponding period of 1978. Despite rapid growth, U.S. imports from Taiwan and India only accounted for about 12 percent of all U.S. imports during January-June 1978.

The Question of Serious Injury to the Domestic Industry

The petitioners allege, among other things, that the domestic industry is being seriously injured or threatened with serious injury. In determining whether the domestic industry is suffering the requisite injury or threat thereof, the Commission considers all relevant economic factors, including capacity utilization, profitability, employment, shipments, inventories, exports, prices, costs, unfilled orders, capital expenditures, and industry efforts to compete with imports.

Utilization of productive facilities

To evaluate the extent of the idling of productive facilities, the Commission asked the U.S. producers to report their annual capacity to produce bolts, nuts, and large screws, in pounds, for 1972-77 and January-June 1978. Further, the Commission defined practical rated capacity as the normal sustained production that can be achieved on an annual basis, assuming the firm's average product mix during 1974-77 and making allowances for anticipated maintenance downtime.

Before the results are discussed, the shortcoming of this method of determining capacity should be noted. First, labor strikes reduce the measured rate of capacity utilization of the U.S. producers for reasons unrelated to actual production needs. Second, some firms manufacture cold-headed parts other than fasteners on their bolt-making machinery; in such cases, the allocation of capacity to any one product line is somewhat arbitrary. Third, the important assumption is made that adequate supplies of raw materials and labor are available for utilization of the existing plant and equipment. Clearly, the wire rod shortage in 1973 and 1974 held down U.S. production despite enormous demand for bolts, nuts, and large screws. Fourth, the changing product mix of U.S. producers from high-volume, standard products to lower-volume special fasteners appears to induce an upward bias in the capacity statistics. This occurs because the manufacture of special fasteners requires a greater percentage of set-up time vis-a-vis the manufacture of high-volume standard fasteners.

The following tabulation shows U.S. producers' capacity to produce bolts, nuts, and large screws in 1972-77 and January-June 1978 (in millions of pounds):

Item	: 1972	: 1973	: 1974	: 1975	: 1976	: 1977	: January-June 1978
Bolts and large screws-----	: 1,569	: 1,481	: 1,545	: 1,553	: 1,651	: 1,598	: 1,597
Nuts-----	: 442	: 429	: 475	: 513	: 538	: 533	: 523
Total-----	: 2,011	: 1,910	: 2,020	: 2,066	: 2,187	: 2,131	: 2,120

The decline in producers' capacity from 1972 to 1973 was due in major part to the closing of Republic Steel's Bolt and Nut Division in December 1972. Rising sales in 1973 and 1974 encouraged U.S. producers to increase capital expenditures for plant and equipment. These expenditures resulted in a 9-percent capacity expansion during 1972-76. During 1977, producers' capacity declined primarily as a result of the closing of Lamson & Session's Tiedeman Road facility in Cleveland, Ohio. During the last year a number of U.S. producers have temporarily shut down facilities in Illinois, Ohio, and Pennsylvania.

There were major fluctuations in capacity utilization during 1972-77 (table 3). The ratio of U.S. production to capacity increased from 71 percent in 1972 to 77 percent in 1974. Acute shortages of raw materials during 1973 and 1974 prevented U.S. producers from more fully utilizing their productive facilities. Capacity utilization dropped sharply in 1975 to 52 percent; since then it has recovered slowly, reaching 57 percent during January-June 1978. It is estimated that labor strikes affected less than 5 percent of total capacity in any year during 1969-77. The following tabulation shows ratios of U.S. production to capacity in 1972-77 and January-June 1978 (in percent):

Item	: 1972	: 1973	: 1974	: 1975	: 1976	: 1977	: January-June 1978
Bolts and large screws-----	: 71	: 77	: 80	: 56	: 55	: 58	: 61
Nuts-----	: 71	: 66	: 67	: 40	: 40	: 39	: 46
Total-----	: 71	: 75	: 77	: 52	: 51	: 53	: 57

In light of the fastener shortage of 1973 and 1974, capacity utilization statistics must be viewed with caution when assessing the ability of the U.S. industry to expand production rapidly. Recent experience suggests that substantial delivery lead times will probably develop when the ratio of production to capacity reaches 75 percent, with the implication that such a ratio represents, roughly, the approach towards an upper practical limit to

capacity use. If, for analytical purposes, a reported ratio of 80 percent is viewed as 100 percent of practical capacity, then reported utilization rates for 1976, 1977, and January-June 1978 would represent use of 64.2 percent of practical capacity in 1976, 66.8 percent in 1977, and 71.8 percent in January-June 1978.

Profit-and-loss experience

The Commission sent detailed financial questionnaires to U.S. producers and asked them to report their financial data with respect to their bolt, nut, and large screw operations. The respondents to this questionnaire accounted for about 70 percent of all noncaptive producers' shipments during 1972-77.

Owing to rising prices and increased quantities of producers' shipments, net sales increased from \$500 million in 1972 to \$853 million in 1974 (table 4). Significant reductions in producers' shipments lowered net sales to \$680 million and \$693 million in 1975 and 1976, respectively. Net sales registered \$694 million during 1977 and \$423 million during January-June 1978, as shown in the table below.

Aggregate profit-and-loss experience of 41 U.S. producers ^{1/} on their bolt, nut, and large screw operations, 1972-77 and January-June 1978

Period	Net sales	Net operating profit before income taxes	Ratio of net operating profit to net sales
	<u>1,000 dollars</u>	<u>1,000 dollars</u>	<u>Percent</u>
1972-----	499,674	27,108	5.4
1973-----	634,653	59,369	9.4
1974-----	852,613	146,184	17.1
1975-----	680,151	100,154	14.7
1976-----	692,694	78,660	11.4
1977-----	694,280	52,853	7.6
1978 (January-June)-----	423,316	33,469	7.9

^{1/} Statistics for 1977 and January-June 1978 are based on a sample of 35 and 37 respondents, respectively.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Net operating profit increased from \$27 million in 1972 to \$59 million in 1973 and then surged to \$146 million in 1974. Greatly improved profit margins caused by excess demand accounted for the large profit generated in 1974. A sharp reduction in the volume of sales lowered net operating profit to \$100 million in 1975; continued low levels of sales and decreasing profit margins reduced net operating profit to \$79 million in 1976 and to \$53 million during 1977.

The average ratio of net operating profit to net sales was 5.4 percent in 1972, rose to 9.4 percent in 1973 and reached a peak of 17.1 percent in 1974. The ratio declined to 14.7 percent, 11.4 percent, and 7.6 percent in 1975, 1976, and 1977, respectively. The average ratio of net operating profit to net sales amounted to 7.9 percent during January-June 1978.

The changing product mix of U.S. producers has tended to bias upward the ratio of net operating profit to net sales as an indicator of profitability for the industry. Five years ago U.S. producers made in substantial quantities both high-volume, commodity-type fasteners and low-volume, limited-purpose fasteners. The high-volume business had lower profit margins but owing to the high volume could generate sizable profits and provide operating funds over which fixed costs were spread. As shown in table 1, U.S. imports have taken a sizable share of the U.S. market. This market penetration occurred in the high-volume, commodity-type fasteners. As a result, many U.S. producers now manufacture only lower volume special fasteners. These items have a higher ratio of operating profit to net sales, but, almost by definition, are sold in smaller quantities. This product mix change can increase the industry's net operating profit to net sales ratio even when return on capital remains the same or falls.

The Commission could not compile return on capital statistics for this industry because many companies produce different products in other establishments and therefore cannot reasonably allocate their investors' capital to any given product line. For 1975, 1976, and January-June 1978 the Commission compiled the return on replacement cost of assets--a possible substitute for the return on capital. For these three periods the domestic industry's return on replacement cost of assets (before taxes) was 11.0 percent, 7.6 percent, and 4.5 percent, respectively. The after tax rates would be considerably lower. On balance, therefore, it would appear that current rates of return, by this measure, are not sufficient to induce substantial new investment in this industry because capital funds can be placed elsewhere at higher yields.

A comparison of the trends in net operating profit ratio for U.S. producers of bolts, nuts, and large screws with those of corresponding ratios for producers of all fabricated metal products and all manufacturing corporations shows a similarity with respect to direction but a divergence with respect to magnitude. As shown in the following table, all three profit ratios improved from 1972 through 1974 and declined in 1975, but the latter two recovered in 1976. However, the fluctuations in the profit ratio for U.S. producers of bolts, nuts, and large screws were more extreme than those of the other ratios. The average ratio of net operating profit to net sales for U.S.

producers of bolts, nuts, and large screws was below the ratios for producers of all fabricated metal products and all manufacturing corporations in 1972 and 1977, but higher than those ratios from 1973 through 1976. During January-June 1978 the two ratios were about equal.

Ratios of net operating profit to net sales for U.S. producers on their bolt, nut, and large screw operations, for producers of fabricated metal products, and for all manufacturing corporations, by products, 1972-77 and January-June 1978

(In percent)							
Product	: 1972	: 1973	: 1974	: 1975	: 1976	: 1977	: January-June 1978
Bolts, nuts, and large screws-----	: 5.4	: 9.4	: 17.1	: 14.7	: 11.4	: 7.6	: 7.9
Fabricated metal products-----	: 6.5	: 7.3	: 7.9	: 7.4	: 8.3	: 8.2	: 7.9
All manufacturing--	: 7.5	: 8.0	: 8.7	: 7.5	: 8.7	: 8.7	: 8.8

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from the Federal Trade Commission's quarterly financial report for manufacturing operations.

The table following shows the distribution of the number of U.S. producers, by ratios of net operating profit or loss to net sales. The number of firms registering net operating losses in the years 1972-77 was five, two, one, four, four, and four, respectively. Six firms reported a net loss during January-June 1978. The number of firms reporting either a loss or a profit ratio of 5 percent or less declined from 21 in 1972 to 6 in 1974 and then increased to 9 in 1975 and 11 in 1976 and 15 in 1977. Fifteen firms reported either a loss or a profit ratio of 5 percent or less during January-June 1978. The firms registering the higher profit rates in recent years have specialized in the production of made-to-order fasteners for sales to the auto makers and other OEM's.

Bolts, nuts, and large screws: Distribution of the number of U.S. producers, by ratios of net operating profit or loss to net sales, 1972-77 and January-June 1978

Item	1972	1973	1974	1975	1976	1977	January-June 1978
Loss-----	5	2	1	4	4	4	6
Profit:							
0 to 5 percent-----	16	11	5	5	7	11	9
6 to 10 percent-----	11	8	7	4	14	8	9
11 to 15 percent-----	5	14	12	15	8	6	6
16 to 20 percent-----	3	3	8	5	4	4	3
21 to 25 percent-----	0	3	8	7	5	2	3
26 percent or more-----	1	1	3	3	1	0	1
Total-----	40	42	44	43	43	35	37

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Unemployment or underemployment of the domestic work force

Employment trends.--The Commission collected employment data from the U.S. producers; a summary of this information can be found in the following table and in tables 5 and 6. The average number of production and related workers producing bolts, nuts, and large screws increased slightly from 1972 to 1973, remained about the same in 1974, and then declined precipitously in 1975; there was little change after 1975. The pattern for man-hours worked is similar.

Average number of employees in U.S. establishments producing bolts, nuts, and large screws, total and production and related workers producing bolts, nuts, and large screws, and man-hours worked by them, 1972-77 and January-June 1978

Item	1972	1973	1974	1975	1976	1977	January-June 1978
Average number of all employees							
1,000 workers--	40.1	42.1	42.3	35.1	34.3	35.1	36.2
Average number of production and related workers:							
1,000 workers--	16.9	17.8	17.6	13.8	13.5	13.5	13.7
Man-hours worked by production and related workers							
million man-hours--	37.4	39.1	39.3	27.3	27.4	27.5	1/ 28.4

1/ Annualized and estimated.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Characteristics of the work force.--In December 1975, the U.S. Department of Labor issued a report pursuant to section 224 of the Trade Act of 1974 concerning workers employed in the production of bolts, nuts, and screws. The report identifies the following occupations as being the most common in the production of these articles: Upsetter, inspector, production packager, production machinist, heat treater, plater, and foreman. The report concluded that a significant proportion of these workers would be designated as skilled rather than semiskilled or unskilled. The report shows that more than 48 percent of all production workers are 45 years of age or older; in all manufacturing industries, only 34 percent of the workers are that old. The report reveals that 78 percent of all fastener employees have a high school education or less, more than 29 percent have less than 12 years of education, and more than 6 percent have less than 8 years of education. Finally, the report shows that more than 88 percent of all employees are male and that most female employees are in secretarial or clerical positions.

Trade adjustment assistance.--Title II, chapter 2, of the Trade Act of 1974 provides for adjustment assistance to workers, firms, and communities when increased imports have contributed importantly to their economic difficulties. During the past 3 years no petitions for adjustment assistance were filed with the U.S. Department of Commerce by firms or communities affected by increased fastener imports. However, during the same period 36 petitions for adjustment assistance were filed with the U.S. Department of Labor by groups who had produced bolts, nuts, and large screws. The Secretary of Labor made affirmative determinations on 21 of the 36 petitions, and as a result 3,448 workers were certified as eligible to receive adjustment assistance. Such assistance can take the form of special monetary allowances, retraining, and job search and relocation allowances. Three companies--Bethlehem Steel Corp., Lamson & Session Co., and RB&W, Inc.--own 14 of the 21 establishments whose workers were certified. In 1976, these companies accounted for about 20 percent and 30 percent of U.S. producers' shipments and capacity, respectively. During the past 3 years the Secretary of Labor denied 15 petitions for adjustment assistance; the negative findings denied eligibility to 1,688 workers.

Productivity.--Productivity, for the purpose of this discussion, is defined as the ratio of total volume of physical output to the number of man-hours worked to produce that output. This is a gross measure of labor productivity and does not identify the specific contributions of labor or capital or other factors of production.

Indexes of domestic production (output measured in pounds) per production worker man-hour for all U.S. producers during 1969-77 were as follows (1969=100):

	<u>Productivity</u>
1969-----	100
1970-----	112
1971-----	106
1972-----	118
1973-----	114
1974-----	122
1975-----	121
1976-----	127
1977-----	129

It can readily be seen that output per man-hour increased significantly during the period. Three major factors appear to explain the increase. First, the closing of certain old productive facilities appears to have had a favorable influence on aggregate productivity. Second, a shift in product mix away from bolts and nuts of middle-range diameters (one-fourth to one-half of an inch) toward similar fasteners of larger diameters had a positive effect on output per man-hour. Third, newer and more efficient capital equipment was put into production during the last 9 years.

Producers' shipments

For the purpose of this report, U.S. producers' shipments include U.S.-made bolts, nuts, and large screws that are shipped to domestic customers, exported, or transferred within the company for use in the manufacture of other products. Producers' shipments declined during 1969-71, increased substantially during 1972-74, and dropped sharply in 1975. As shown in the following table, producers' shipments recovered modestly in 1976 and 1977, but still remained considerably lower than the level reached in 1974. Producers' shipments amounted to 619 million pounds in January-June 1978, representing a 2 percent decline over the corresponding period of 1977. Approximately 1.8 percent of the producers' shipments described above consisted of imported fasteners further processed in domestic establishments. Owing to increased unit values, the values of producers' shipments have shown a somewhat stronger performance. For example, the value of producers' shipments increased nearly 17 percent between 1975 and 1977.

Bolts, nuts, and large screws: U.S. producers' shipments, by categories,
1969-77, January-June 1977, and January-June 1978

(In millions of pounds)

Period	: Domestic : : shipments :	U.S. : : exports :	:Intracompany: : shipments :	Total
1969-----	1,281 :	95 :	114 :	1,490
1970-----	1,177 :	89 :	107 :	1,373
1971-----	1,058 :	84 :	105 :	1,247
1972-----	1,192 :	102 :	128 :	1,442
1973-----	1,250 :	125 :	131 :	1,506
1974-----	1,260 :	159 :	135 :	1,554
1975-----	775 :	172 :	103 :	1,050
1976-----	831 :	197 :	106 :	1,134
1977-----	829 :	218 :	129 :	1,176
January-June--	:	:	:	:
1977-----	469 :	106 :	56 :	631
1978-----	437 :	112 :	70 :	619
	:	:	:	:

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Domestic shipments.--Producers' shipments to domestic customers reached their highest level in 1969. Moving with general economic conditions, domestic shipments declined during 1970 and 1971 and then increased during 1972-74. Domestic shipments dropped precipitously in 1975, by about 32 percent from the 1974 level. Strong demand by the automotive industry for fastener products has allowed domestic shipments to stage a modest recovery since then.

U.S. exports.--U.S. exports increased every year after 1971, rising 230 percent, in terms of quantity, during 1969-77. U.S. exports accounted for 6 percent and 18 percent of U.S. producer's shipments in 1969 and 1977, respectively. Canada is by far the largest market for U.S. exports, accounting for over 85 percent of all U.S. exports in 1977. Exported articles consist in major part of special-purpose fasteners sold directly to major Canadian durable goods manufacturers.

Throughout 1969-77, the United States has shown a deficit in its fastener trade for the products covered by this investigation. The shortfall rose from \$22.7 million in 1969 to \$142.8 million in 1977, with the ratio of exports to imports, in terms of value, falling from 67 percent to 44 percent during the same period. The ratio of exports to total trade (exports plus imports) dropped from 40 percent in 1969 to 31 percent in 1977. During a more recent period the trade shortfall increased from \$125.9 million in 1975 to \$142.8 million in 1977, but the ratios of exports to imports and to total trade remained about the same.

Intracompany shipments.--Intracompany shipments remained relatively stable during 1969-71, increased in 1972 and 1973, and then declined to the same level in both 1975 and 1976. Seven firms which account for the bulk of intracompany shipments, use these articles in the manufacture of automobiles, farm equipment, and other durable goods. These captive shipments generally account for about 7 to 8 percent of total U.S. producers' shipments.

Inventories

U.S. producers and importers provided information regarding their inventories on certain dates during the period December 1972-June 1978; a summary of this information is found in the following table. The data are not particularly revealing, since inventories held by U.S. producers exhibit no real trend and inventories held by importers appear to have moved irregularly upward.

Bolts, nuts, and large screws: Inventories held by U.S. producers and importers, by specified dates, Dec. 31, 1972-June 30, 1978

(In millions of pounds)

Date	: Producers' : :inventories:	Importers' : :inventories:	1/
Dec. 31, 1972-----	307	173	
Dec. 31, 1973-----	230	179	
June 30, 1974-----	240	154	
Dec. 31, 1974-----	236	224	
June 30, 1975-----	308	291	
Dec. 31, 1975-----	255	261	
June 30, 1976-----	230	233	
Dec. 31, 1976-----	245	319	
June 30, 1977-----	215	320	
Dec. 31, 1977-----	208	283	
June 30, 1978-----	194	303	

1/ Estimated from a survey of importers which accounted for approximately 50 percent of the quantity of total U.S. imports in 1974 and 1976.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

A firm adjusts its inventory position to its anticipated level of shipments, i.e., a firm voluntarily tries to change its level of inventories so as to maintain some desired ratio of inventories to shipments. This ratio should be high enough to insure prompt delivery to customers, yet not too high because inventories are costly to hold. Only sales produce profit. Changes in the actual ratio of inventories to shipments away from the desired ratio

represent involuntary inventory buildup or liquidation. Involuntary inventory changes would be associated with excess demand or supply in the particular market under investigation.

The following table presents the actual ratios of inventories to shipments for U.S. producers and importers for specified periods during the past business cycle. A logical estimate of the desired ratios would be the median value of the actual ratios observed, because the median value discounts the more extreme values of the observed data. This method suggests that the desired ratios for U.S. producers and importers are 20 percent and 40 percent, respectively. The higher desired ratio for importers reflects a much longer channel of distribution and a product mix which consists primarily of high-volume, commodity-type fasteners. To the extent that U.S. producers are shifting production from high-volume standard fasteners to special fasteners, the desired level of inventories will contain an upward bias.

Bolts, nuts, and large screws: Ratios of U.S. producers' inventories ^{1/} to producers' shipments and importers' inventories to importers' shipments, 1972, 1973, and by specified periods, January 1974-June 1978

(In percent)		
Period	Ratio of --	
	Producers' inventories to producers' shipments	Importers' inventories to importers' shipments
1972-----	22 :	37
1973-----	15 :	33
1974:	:	:
January-June-----	15 :	22
July-December-----	16 :	30
1975:	:	:
January-June-----	25 :	67
July-December-----	33 :	46
1976:	:	:
January-June-----	21 :	35
July-December-----	22 :	52
1977:	:	:
January-June-----	18 :	43
July-December-----	18 :	41
1978 (January-June)-----	16 :	36

^{1/} The ratios represent inventories at the end of the period shown divided by that period's annualized quantities of producers' shipments and importers' shipment.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

The ratio of U.S. producers' inventories to shipments was 22 percent in 1972, implying that U.S. producers held nearly the desired level of inventories in that year. U.S. producers involuntarily liquidated inventory in 1973 and 1974; the ratio of inventories to shipments fell to about 15 percent. This is consistent with the fastener shortage which occurred during these years. Sharply declining sales in 1975 forced U.S. producers to increase inventories involuntarily; the ratio of inventories to shipments reached its peak of 33 percent during July-December 1975. U.S. producers have since reduced their inventories to levels in line with their lowered levels of shipments and their changing product mix which consists increasingly of lower-volume, special fasteners.

The ratio of importers' inventories to shipments was 37 percent in 1972, nearly equal to the estimated desired ratio. The actual ratio dropped in 1973 and reached a record low of 22 percent during January-June 1974, a period of excess demand. A large decline in shipments and inability to close the distribution pipeline quickly propelled the ratio of inventories to shipments to 67 percent in January-June 1975. The large involuntary accumulation glutted the market and drove down the price of the imported articles. Importers liquidated these stocks during the period July 1975-June 1976. Because of increased unfilled orders during July-December 1976, importers increased foreign orders only to find themselves again involuntarily accumulating inventories. Since then the ratio of inventories to shipments has declined to more desirable levels.

Price trends and comparisons

To investigate price trends in the U.S. market, the Commission sent detailed questionnaires to U.S. producers and importers, which were asked to supply the lowest net selling prices received on sales of six representative fastener products to distributors during January 1972-June 1978. The Commission selected the six particular pricing items only after extensive discussions with U.S. producers, importers, and distributors. The selected items cover a broad range of diameters (1/4"-3/4"), lengths (1"-3"), and grades of steel (grades 2-8). For comparative purposes the Commission took price readings on sales to the distributor market, where U.S. producers and importers compete head to head and where price is an important consideration. Aggregated results showing the ranges and averages of domestic and import prices can be found in tables 7 through 12.

Domestic prices on standard fasteners remained quite stable in 1972, increased about 15 percent during 1973, and then surged upward throughout 1974 (table 13), rising 75 percent in that year in an atmosphere of excess demand and steel shortages. During January-March 1975, prices peaked at a level twice as high as that registered in 1972. After 1975, domestic prices declined about 15 percent. Domestic fastener prices increased much faster during 1973 and 1974 than aggregate wholesale prices. During January 1976-June 1978, domestic prices on standard fastener items remained about the same,

while the price indexes for durable manufactured goods and miscellaneous metal products increased consistently (table 14). According to the Bureau of Labor Statistics, domestic prices on special fasteners increased about 7 percent during the last 2 years.

The average net selling prices received by importers fluctuated considerably more than domestic prices (table 15). From January-June 1972 through April-June 1974, import prices increased about 175 percent; certain items nearly quadrupled in price. During this period, panic buying, shortages, and lengthening lead times characterized the U.S. market; distributors, desperate for supply, bid up prices. Then, in late 1974 the volatile market changed direction; demand fell rapidly and inventories, swollen to record levels, began to exert enormous downward pressure on prices. Purchasers, which only recently had been double and triple ordering, canceled orders whenever possible. The dramatic turn in the market immediately affected import prices, which fell more than 40 percent within a matter of months. Import prices remained depressed during 1975, 1976, and 1977.

Current prices of Japanese- and Taiwanese-made fasteners offered by U.S. importers increased significantly during January-June 1978. Such increases, ranging from 40 to 60 percent on nuts and from 15 to 20 percent on large screws and bolts, appear to emanate from the appreciation of the yen and a tightened steel market in Japan. In December 1977 the exchange rate stood at about 240 yen to the dollar; by October 1978 this rate had dropped to less than 190 yen to the dollar, representing an increase of nearly 30 percent in the dollar value (price) of the yen. To the extent that Japanese fastener producers attempt to maintain constant prices in yen, the depreciation of the dollar will thus increase the dollar price of Japanese fasteners. However, a devalued dollar will also lower the Japanese cost of producing steel. Because the cost of steel represents at least 50 percent of the cost of manufacturing fasteners in Japan and because dollar-denominated raw materials, including coking coal, iron ore, and oil, constitute about 50 percent of total Japanese steel costs, about 25 percent of the yen appreciation will put no upward pressure on Japanese fastener prices.

Another factor mitigating the effect of the yen appreciation on the Japanese producers is the provision of emergency "yen appreciation" assistance in the form of low cost loans by the Government of Japan to adversely affected domestic Japanese industries. According to information obtained in the public hearing, approximately 300 Japanese fastener producers were certified as eligible to receive yen-appreciation loans made by the Government of Japan. Furthermore, about 120 of the 300 firms mentioned above have received such loans since the program began in November 1977.

During the last 2 years the Japanese steel industry has attempted to reduce production and increase selling prices. These efforts appear to have contributed to the increased prices of both Japanese- and Taiwanese-made fasteners. According to the Japan Economic Journal, the Ministry of International Trade and Industry has issued guidelines to the Japanese steel

producers that would hold 1978 production to about 100 million metric tons, or about 70 percent of capacity. According to another trade journal, the Government of Japan approved the formation of a "recession cartel" in the steel wire rod industry during 1977. Wire rod is the chief raw material used in the production of fasteners. Because Taiwan is heavily dependent on Japanese cold-heading-quality steel wire rod, Taiwanese nut producers are facing the same cost pressures as those affecting the Japanese fastener producers.

In 1972 most prices of U.S. imports were about 26 to 31 percent below prices of comparable U.S.-made fasteners (table 16). Price differences lessened during January-September 1973, and in October-December 1973 the situation was reversed, with imported articles selling at about 16 percent more than U.S.-made fasteners. This price inversion lasted throughout January-June 1974, with import prices averaging about 15 to 25 percent more than domestic prices. By late 1974, import prices fell sharply, and the inversion disappeared. By mid-1975, the prices of imported fasteners were about 30 to 45 percent below domestic prices; these very large price differences did not fundamentally change during 1976 and 1977. In recent months the price difference has closed rapidly, however. The average price difference stood at about 15-20 percent during January-June 1978.

The data used in the above analysis consisted of prices received by U.S. producers and importers on sales to distributors. Price readings can also be taken at a further point in the chain of distribution--sales to the original equipment manufacturer. With respect to sales to medium-sized OEM's, a relevant comparison would be between the prices received by U.S. producers and those received by distributors of foreign-made fasteners. This comparison is used because U.S. producers might attempt to sell to a medium-sized OEM direct, bypassing the distributor, and because most foreign-made fasteners are sold from the importer to a distributor and then resold to an OEM. Information obtained in response to Commission questionnaires indicates that U.S. producers sell U.S.-made fasteners to both distributors and OEM's at roughly the same price. Distributors of foreign-made products appear to markup and sell their merchandise to OEM's at a price averaging from 10 to 15 percent above the price they originally had paid to the importer.

Cost trends and comparisons

To more fully understand the underpinnings of the price structure, the Commission obtained cost information from U.S. producers and importers. For the purpose of this report, domestic cost is defined as the unit cost of production, comprising materials costs, direct labor costs, overhead costs; import cost is defined as the total delivered cost (including duty) to U.S. importers. A summary of the questionnaire responses can be found in table 17.

The information shows that domestic cost rose throughout the period January 1972-June 1978. The largest increases in domestic cost occurred in

1973 and 1974, when steel cost escalated rapidly. Import cost jumped even faster than domestic cost during the boom years 1973 and 1974 but fell sharply in 1975. Import cost increased only slightly during 1976 and 1977, but surged upward in 1978.

During 1972, import costs were on the average 20 to 40 percent less than domestic costs. Cost differences virtually disappeared during the 1973 and 1974 fastener boom; however, large cost differences existed for nearly all fastener articles after 1975. Until recently, the total delivered cost of imported bolts, nuts, and large screws was only marginally higher than the cost of steel used in the domestic manufacture of similar articles. During January-June 1978, import costs were still considerably less than domestic costs.

Some U.S. producers informed the Commission that the trigger price system has driven up their costs for imported wire rod, upon which many are heavily dependent, and has given the Japanese an added incentive to export fabricated steel products, such as bolts and nuts. Steel costs for the fastener industry rose about 8 to 12 percent during the last year.

Unfilled orders

U.S. producers and importers provided information regarding their unfilled orders on certain dates during the period December 1972-June 1978; a summary of this information is found in the following table.

Bolts, nuts, and large screws: Unfilled orders held by U.S. producers and importers, by specified dates, Dec. 31, 1972-June 30, 1978

(In million of pounds)			
Date	U.S. producers' unfilled orders	Importers unfilled orders	1/
Dec. 31, 1972-----	177	97	
Dec. 31, 1973-----	402	200	
Dec. 31, 1974-----	376	120	
Dec. 31, 1975-----	165	87	
June 30, 1976-----	176	152	
Dec. 31, 1976-----	189	131	
June 30, 1977-----	196	113	
Dec. 31, 1977-----	198	142	
June 30, 1978-----	202	116	

1/ Estimated from a survey of importers which accounted for approximately 50 percent of the quantity of total U.S. imports in 1974 and 1976.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

In line with other economic indicators, unfilled orders of U.S. producers and importers reached cyclical peaks on December 31, 1973, and lows on December 31, 1975. During the past 3 years, U.S. producers' unfilled orders increased moderately. In contrast, importers' unfilled orders fell after mid-1976 following a rebound in July-December 1975. Importers apparently viewed an increase in orders during January-June 1976 as a sign of renewed demand in the U.S. market and responded with a significant increase in the level of imports during July-December. Unfortunately, the renewed vigor in demand was short lived; inventories subsequently increased while unfilled orders decreased. The increase in importers' unfilled orders during July-December 1977 probably was the result of speculative activity in anticipation of higher tariff rates (see page A-13).

Capital expenditures

As shown in the following table, total capital expenditures by U.S. producers increased irregularly during 1969-77. However, these nominal values greatly overstate the actual plant and equipment brought into the production of bolts, nuts, and large screws. This distortion is caused by the rapidly increasing cost of capital equipment. According to the U.S. Bureau of Labor Statistics, the wholesale price of metal-forging equipment increased about 250 percent during the past 7 years. Thus, the \$32 million spent in 1976 for plant and equipment actually purchased physical assets worth about \$13 million in terms of 1969 constant dollars.

Bolts, nuts, and large screws: Total capital expenditures by
U.S. producers, 1969-77 and January-June 1978

(In thousands of dollars)	
Period	Total capital expenditures
1969-----	20,935
1970-----	16,897
1971-----	13,682
1972-----	12,411
1973-----	34,605
1974-----	24,390
1975-----	24,633
1976-----	32,194
1977-----	38,314
1978 (January-June)-----	23,153

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.--Data are based on responses to Commission questionnaires by U.S. producers which accounted for approximately 50 percent of the value of total domestic shipments in 1974.

Efforts of U.S. producers to compete with imports

U.S. producers have been asked to describe their efforts in recent years to compete more effectively in the U.S. market. They reported that they had done one or more of the following: (1) Reduced prices despite increased costs, in an effort to stay competitive with the imported articles, (2) strengthened their position in the special fastener market, where engineering and technical requirements tend to limit foreign competition, (3) purchased lower cost steel from abroad, (4) conducted research in new products and in special tools for proprietary fasteners, (5) purchased high-speed heading equipment, (6) improved customer service through reduced delivery lead times, and (7) increased employee training so as to improve productivity.

The most important of the above efforts to compete is probably the emphasis of the U.S. producers on the special fastener market. The broadline fastener manufacturers, now suffering from excess capacity they allege is caused by import competition, have focused their efforts on the special fastener market. At least 300 million pounds of capacity have been redirected toward the special fastener market during the last 3 years. The attempted transformation of the broadline manufacturers to special fastener producers has been very difficult since nearly all aspects of the firms' operations have had to undergo major changes. Physical plants have been severely cut back, product lines narrowed, sales forces trimmed and reoriented, quality controls upgraded, inventory controls automated, production scheduling made much more flexible and consequently more complex, response time to customer demand shortened, and labor skills and motivation greatly improved. The size of this task raises serious questions about the ability of some broadline manufacturers, already in poor financial condition, to make this transition. In any case, the increasing emphasis of those producers on the special fastener market has resulted in more intense price competition within that market, especially among automotive fastener suppliers.

The Question of Substantial Cause

Counsel for the United States Fastener Manufacturing Group claims that increased imports are a substantial cause of serious injury, or the threat thereof. Section 201(b)(4) of the Trade Act of 1974 defines the term "substantial cause" as "a cause which is important and not less than any other cause." Section 201(b)(2) of the Trade Act further states that in determining whether increased imports are a substantial cause of injury, the Commission should consider all relevant economic factors, including, but not limited to, an increase in imports (either actual or relative to domestic production) and a decline in the proportion of the domestic market supplied by the U.S. producers. This section sets forth and analyzes various possible causes of any injury or threat thereof.

Factors affecting demand for the imported article

This section analyzes the various factors affecting U.S. demand for imported bolts, nuts, and large screws. The following figure illustrates changes in the level of U.S. imports and the factors affecting such changes.

Industrial production of durable manufactured goods.--The demand for industrial fasteners is derived primarily from the demand for consumer durable goods, such as automobiles, and capital goods, which include industrial equipment, tools, and so forth. Durability is a factor that permits discretion in the timing of purchases of products which incorporate industrial fasteners. Consequently, cyclical fluctuations in durable goods production have usually been much wider than those in the production of nondurable goods, and they have extended over longer periods of time. The demand for bolts, nuts, and large screws is similarly cyclical because it is derived from the demand for durable manufactured goods.

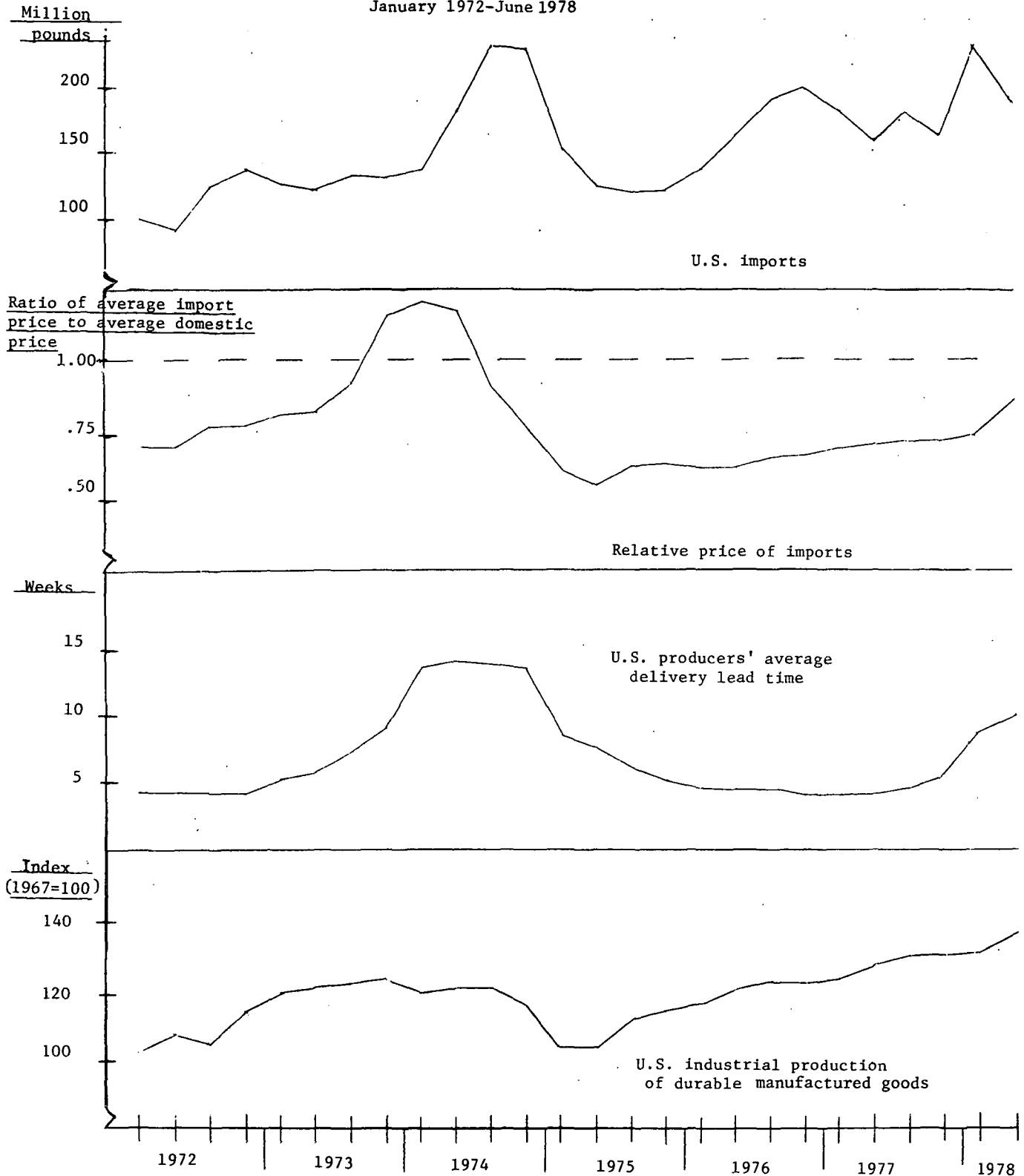
Fasteners are intermediate goods, which is another factor that influences the demand for them. This means that fasteners are not consumed as final products but rather as components in the production of other products. Hence, a decline in the demand for durable goods would result in a proportionally larger decline in the demand for fasteners. For example, a fastener-consuming manufacturer, facing declining demand for his own products, would sharply curtail his fastener inventories to match declining production. Therefore, not only would a smaller quantity of fasteners be used on the assembly line, but also a smaller quantity would be held in stock. As a result, the demand for fasteners is likely to show even more cyclical variation than the demand for durable goods.

Relative price.--Demand for bolts, nuts, and large screws is relatively unaffected by changes in price. A reason for this is that fastener demand is a derived demand for articles incorporating fasteners. Thus, a price reduction for imported and domestically produced fasteners will not result in an appreciable shortrun increase in demand. However, price differences between imported and domestically produced fasteners have a major influence on distributors' purchasing decisions.

To investigate the relative importance of various factors to distributors' purchasing decisions, the Commission asked a number of large distributors in 1977 to rank the following factors in numerical order (1 being most important, 2 being the next most important, and so forth):

_____	historical source
_____	quality
_____	"Buy American" policy
_____	price
_____	alternate source
_____	special design (i.e., specialty items)
_____	availability.

Bolts, nuts, and large screws: Determinants of import demand by quarters,
January 1972-June 1978



Source: U.S. imports compiled from official statistics of the U.S. Department of Commerce; relative price of imports and U.S. producers' average delivery lead time compiled from responses to questionnaires of the U.S. International Trade Commission; industrial production compiled from official statistics of the Board of Governors of the Federal Reserve System.

Of the 41 respondents, 22 listed price as the most important factor affecting their purchasing decisions. Price was listed as the second and third most important factor by nine and five respondents, respectively. Clearly, price differences play a key role in determining how aggregate demand for fasteners will be shared between imported and domestically produced products. In the absence of strong demand, increases in price differences caused by reduced prices of imports result in increasing imports, which reduce U.S. producers' shipments proportionally. A similar result will occur if the domestic industry raises prices during periods of soft demand in order to maintain profit levels.

Witnesses in opposition to the granting of import relief stated that quality and availability requirements overwhelm price as the decisive factor influencing demand for fasteners made to unique customer specifications (transcript of the hearing in investigation No. TA-201-27, pp. 232, 255, and 308). From staff fieldwork, the Commission learned that these nonprice considerations are the basis upon which a fastener supplier qualifies to bid on a large OEM contract. Once the supplier is certified, price competition begins in earnest.

Availability.--Availability (or lead time) is also an important consideration in the distributor market for high-volume, commodity-type fasteners. This statement is confirmed by the results of the distributor survey discussed above, in which 33 of the 41 respondents rated availability as being among the three most important factors influencing their purchasing decisions.

Fastener-consuming markets

Many witnesses at the public hearings have argued about the vulnerability of various fastener-consuming markets to imports. Witnesses in opposition to the granting of import relief stated that U.S. producers were insulated from import competition in the OEM market for made-to-order fasteners (transcript of the hearing in investigation No. TA-201-27, pp. 251, 256, 300, and 354). Witnesses in favor of import relief disagreed and pointed to current import competition in these markets (transcript of the hearing in investigation No. TA-201-27, pp. 68, 74, and 83). This section will briefly analyze the interaction of the distributor and the OEM markets and the extent to which the imported article with its unique set of commercial properties can compete in the various end-user markets.

There is little disagreement that imported articles have captured a major share of the distributor market. To identify the ultimate end user of the articles which go through this channel of distribution, the Commission asked distributors in 1977 who their customers were. Of the 41 respondents, 24 reported that they sold the majority of their products to OEM's. The Commission also asked the distributors to agree or disagree with the following statements:

- (1) If the volume is there, we will source, stock, and supply any fastener to our customers--"standard" or "special."
- (2) It is almost impossible for us to obtain anything but high-volume "standard" fasteners from importers.
- (3) We deal almost exclusively with high-volume fastener products.
- (4) We source "special" bolts, nuts, and large screws from domestic producers.
- (5) We cannot compete with domestic producers in sales to large OEM customers.
- (6) We can compete with domestic producers in sales to large OEM customers if we are able to obtain "special" fasteners in a timely manner.
- (7) We can compete with domestic producers in sales to large OEM customers with respect to their "standard" fastener needs.

The results of the 1977 inquiry are summarized below:

Statement	: Agree : : strongly	: Agree : : but not : : strongly	: Not sure; : : it depends	: Disagree : : but not : : strongly	: Disagree : : strongly
1-----	30	9	2	0	0
2-----	11	13	4	4	9
3-----	10	11	5	11	3
4-----	26	11	2	2	0
5-----	19	10	3	4	5
6-----	6	12	12	6	3
7-----	7	13	8	6	4
	:	:	:	:	:

The results suggest that the distributors have aggressively and successfully sold to small- and medium-sized OEM's but have had much less success with the large OEM's. This is in accord with the following conclusion reached in a recent study, Fastener Markets--A Product Line Analysis, by the Stanford Research Institute:

Few companies reported any concern about the origin of their fasteners. SRI concluded that if a manufacturer or distributor of fasteners stands behind the reliability of the product, this is adequate and is the most important consideration. A considerable number of companies said they wanted to buy from U.S. fastener companies but little effort was extended in trying to identify the country of origin of the fastener used.

The few companies that do report serious concern about the origin of their fasteners are the large OEM's. For these companies with large and varied fastener needs, the distributor market presents significant problems. Large-scale fastener consumption requires these OEM's to be cognizant of their suppliers' long-term production capabilities. Small- and medium-sized OEM's probably do not perceive their fastener needs as placing similar constraints on their suppliers. Another important consequence of large-scale consumption is the attendant economies of scale that large OEM's can exploit. Large OEM's can only develop these economies of scale through extensive two-way communication with their suppliers on such topics as special designs, inventory control, quality control, and traceability requirements. The cost of transmitting this information from large OEM through a distributor to a fastener manufacturer (foreign or domestic) could be prohibitive.

That distributors have difficulty in servicing large OEM's does not mean that the large OEM market is completely insulated from import competition. First, distributors of U.S. imports have become secondary or tertiary sources of supply to the large OEM's. Second, a foreign manufacturer working in close association with a U.S. producer (or a U.S. producer's foreign affiliate cooperating with its parent) could possibly overcome many of the obstacles in supplying this portion of the market. Such an arrangement would have the U.S. producer develop and immediately transfer the productive technique, supply initial quantities of the product, and provide productive capacity for "emergency" situations. Upon receiving the productive technique, the foreign manufacturer would supply the article for the remainder of the contract, except for the final weeks, when inventory-control consideration would return production to the United States. Clearly, the above situation would require extraordinary integration of the productive capabilities of the U.S. and foreign manufacturers. Although movements toward such arrangements can occur and have occurred, their full implementation would require a significant restructuring of the worldwide fastener industry. The continuation of excess capacity encourages the present trend toward further integration of the worldwide fastener industry.

Consumption and market penetration

Apparent consumption of bolts, nuts, and large screws declined from 1.8 billion pounds in 1969 to 1.5 billion pounds in 1971 and then increased steadily to 1.9 billion pounds in 1973 (table 1). Surprisingly, apparent

consumption increased about 12 percent in 1974 despite slackening activity in many fastener-consuming markets. In fact, industrial production of all durable goods manufacturers actually declined in 1974. The explanation for this apparent paradox is the large inventories held by U.S. producers, importers, and distributors during 1975.

The large decline in apparent consumption in 1975 was in part a result of both the 1974 shortage situation and the stockpiling it engendered. As supply tightened in early 1974, durable goods manufacturers actively sought secondary and tertiary sources of industrial fasteners. The manufacturer's position is reasonable in that it could lose a \$25,000 sale, that of a machine tool for instance, because it lacked a dozen screws. When this possibility is multiplied a thousandfold, the fastener boom of 1974 becomes explicable. Double and triple ordering exacerbated the supply situation, drove up prices, and reinforced the belief that the fastener shortage was, in fact, acute. According to trade sources, the situation was completely out of hand by the spring of 1974.

Foreign suppliers responded to the feverish seller's market and provided large quantities of fasteners at very high prices. In 1974 the quantity of imports increased by 37 percent and the value by 118 percent. The fastener market retrenched in the final months of 1974 as end users, then distributors, and then manufacturers and importers realized the full extent of the inventory overhang.

Apparent consumption recovered somewhat to 1.6 million pounds in 1976 and 1.7 million pounds in 1977. Apparent consumption amounted to 928 million pounds during January-June 1978, 4 percent higher than in the corresponding period of 1977. As shown in the following table, the ratio of imports to consumption increased throughout 1969-77. The ratio for nuts was significantly higher than the ratio for bolts and large screws throughout the period under consideration.

Bolts, nuts, and large screws: Ratios of U.S. imports to apparent consumption, 1/ 1969-77, January-June 1977, and January-June 1978

(In percent; by quantity)

Period	Bolts and large screws	Nuts	Total
1969-----	16	34	22
1970-----	18	38	24
1971-----	19	39	25
1972-----	21	41	26
1973-----	23	43	28
1974-----	30	52	36
1975-----	31	57	38
1976-----	38	57	43
1977-----	39	57	43
January-June--			
1977-----	38	54	42
1978-----	41	56	45

1/ Equal to U.S producers' shipments plus imports minus exports.

Source: U.S. producers' shipments, compiled from data submitted in response to questionnaires of the U.S. International trade Commission; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Andrew Vance, counsel for the American Importers Association Industrial Fasteners Group, claimed that the lack of growth in the apparent consumption data between 1969 and 1977 proves that the U.S. producers' shipment figures must be in error (transcript of the hearing in investigation No. TA-201-37, p. 228). Mr. Vance cited the "tremendous growth" in the gross national product and the demand for fasteners as reasons why apparent consumption must have risen.

To test Mr. Vance's hypothesis that tremendous growth has occurred in the consumption of fasteners, the Commission compared its data on apparent consumption of bolts, nuts, and large screws with the apparent consumption of steel. Steel is the most basic industrial raw material in the United States. The consumption patterns of these two industrial commodities should be roughly similar. In fact, the similarity of the consumption data for steel and fasteners is striking (table 18). Apparent consumption of both commodities has stagnated and remains at levels almost unchanged from the late 1960's.

The U.S. Department of Commerce, effective January 1, 1978, now reports the quantity and value of bolt, nuts, and screws imported from Canada and used as original motor-vehicle equipment. Prior to this change the Department of Commerce reported only the total value of such imports entering under TSUS

item 646.79. The newly available import statistics suggest that approximately 70 million pounds of imports will enter the United States under this tariff item in 1978. This suggests that the import-to-consumption ratio for bolts, nuts, and large screws was about two additional percentage points higher than previously calculated ratios for each of the last 5 years, which would raise the ratio to about 47 percent for the period January-June 1978. To insure continuity in the trade data, the new import data have not been included in the appendix tables, unless noted.

Possible causes of serious injury to the domestic industry

Recession.--Witnesses in opposition to the granting of import relief have testified that the U.S. recession was a more important cause than imports for any alleged injury to the domestic industry (transcript of the hearing in investigation No. TA-201-27, pp. 257, 375, and 463). Counsel for the U.S. producers testified that the recession seriously affected U.S. producers in 1975, but whereas the economy has subsequently staged a pronounced recovery, the U.S. industry remains depressed (transcript of the hearing in investigation No. TA-201-27, p. 112).

As mentioned earlier, demand for fasteners is primarily derived from the demand for consumer durables, particularly automobiles, and capital goods, including machinery, transportation equipment, and so forth. During the past 3 years U.S. production of consumer durables staged a strong recovery. This did not immediately occur in the capital goods sector, where the high cost of capital and low profit levels, among other things, restricted capital expenditures. During the last year U.S. production of capital goods appears to have begun its recovery as well.

U.S. producers and the distributor market.--Witnesses in opposition to the granting of import relief testified that U.S. producers have chosen to disregard the distributor market so as to emphasize the production and sales of special fasteners to large OEM customers (transcript of the hearing in investigation No. TA-201-27, pp. 229, 309, and 439). These witnesses further contend that any injury resulting from lost sales in the distributor market has been caused by the deliberate corporate policy of the U.S. producers. Counsel for the U.S. producers argued that, in fact, low-priced imports have driven the U.S. producers out of the distributor market.

To evaluate the above allegations the Commission asked in 1977 a number of major distributors of bolts, nuts, and large screws to agree or disagree with the following statements:

- (1) Domestic producers often sell to our customers at the same price, or an even lower price, than they will sell to us.

- (2) During the fastener shortage of 1974, the domestic producers looked after our needs at least as well as the importers.
- (3) During the past 2 years we have had no delivery problems from either domestic producers or importers.
- (4) We are very pleased with the general level of service given to us by the domestic producers of bolts, nuts, and large screws.
- (5) We are very pleased with the general level of service given to us by the importers of bolts, nuts, and large screws.
- (6) The prices offered by domestic producers of bolts, nuts, and large screws are just not competitive with prices offered by importers.

The results of this inquiry are summarized as follows:

Number	:	:Agree but:Not sure;;Disagree:								
	:	Agree	:	not	:	it	:	but not	:	Disagree
	:	strongly	:	strongly	:	depends	:	strongly	:	strongly
1-----	:	24	:	8	:	5	:	2	:	2
2-----	:	11	:	3	:	2	:	8	:	15
3-----	:	11	:	13	:	4	:	9	:	4
4-----	:	8	:	15	:	5	:	8	:	5
5-----	:	26	:	11	:	1	:	2	:	0
6-----	:	35	:	5	:	1	:	0	:	0
	:		:		:		:		:	

These results suggest the following: first, the delivery and pricing policies of U.S. producers have irritated distributors; second, distributors did not experience major difficulties in obtaining either domestic or imported articles during 1976 and 1977; third, distributors were pleased with the general level of service provided by U.S. producers; and fourth, prices offered by U.S. producers were not competitive with prices offered by importers.

Imports.--The U.S. producers allege that increased imports are the most important cause of the serious injury they now suffer. Information gathered by the Commission clearly shows that imports significantly increased their market share during the past 9 years (table 1). The U.S. producers assert that wide price differences between imported and domestic articles caused this

market penetration. Information collected by the Commission shows that during the period October 1974-June 1978, significant price differences did exist between comparable Japanese- and U.S.-made fasteners (table 7 through 12). Further, the Commission found price to be the most important factor influencing the purchasing decision of distributors.

APPENDIX A

FASTENER NOMENCLATURE AND UNITS OF QUANTITY

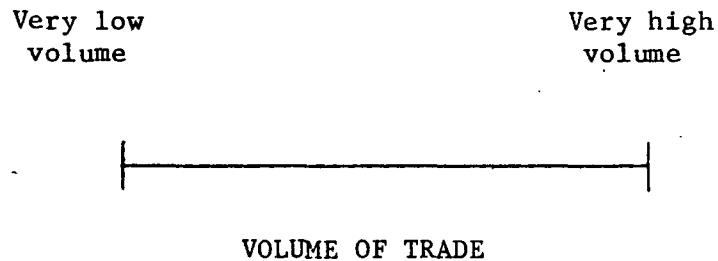
Controversies Concerning Fastener Nomenclature

Standard versus special

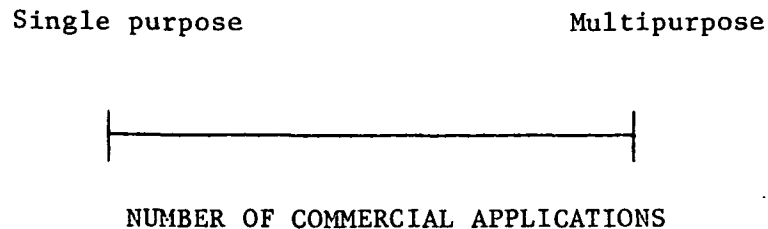
Nearly every witness who testified during the public hearing on investigation No. TA-201-37 mentioned the terms "standard" and "special" with reference to fasteners. This section will briefly discuss the characteristics which distinguish standard from special fasteners. An understanding of these characteristics may help to determine the usefulness of the standard versus special distinction in the instant investigation.

Trade information developed from briefs, fieldwork, questionnaires, trade journals, and transcripts indicates that there are two characteristics that distinguish standard fasteners from special fasteners. These characteristics do not relate to the physical properties of the product, but rather to its present use in commercial trade.

The first characteristic is the volume of trade in the particular item. This characteristic is expressed below as a continuum ranging from very-low-volume items to very-high-volume items.



The second characteristic is the number of commercial applications for the particular item. This characteristic is expressed below as a continuum ranging from single-purpose (limited-purpose) items to multi-purpose (commodity-type) fasteners.



The figure on the next page, derived by combining the two above-mentioned continuums, expresses the whole range of fastener products in terms of volume of trade and number of commercial applications. The fastener referred to in the trade as a standard fastener is a fastener which is both a high-volume item and a multipurpose (commodity-type) fastener. Therefore, standard fasteners would occupy the upper right portion of the figure.

It must be noted that the dash lines drawn to distinguish high from low volume on the vertical line and limited purpose from multipurpose on the horizontal line are completely arbitrary.

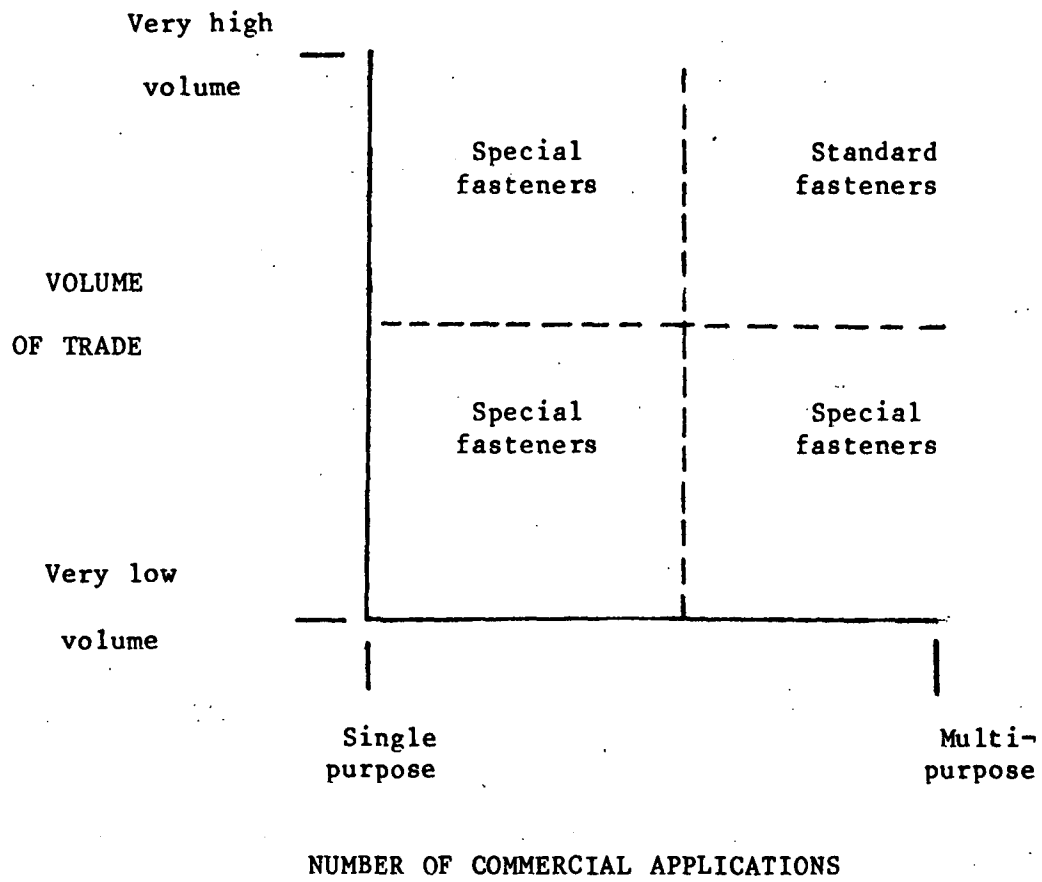
The fastener referred to in the trade as a special fastener is a fastener which is either a low-volume item or a limited-purpose fastener. Special fasteners would then occupy the upper left, lower left, and lower right portions of the figure. Once again, the lines drawn are completely arbitrary.

It should also be noted that the relative position of a particular fastener in the figure can change over time. During the public hearing, testimony was given that within 10 years many fastener items commonly called locknuts changed from special to standard fasteners.

The petition filed in connection with investigation No. TA-201-2 states that "the designation of 'standard' products is used to distinguish them from custom-made or specialty products." The petition also states that "standard products conform to . . . specification in authoritative reference books published by various U.S. standards organizations, and that, as a general rule, standard products are carried in inventory by fastener producers, whereas specialty products are not." Although the observations above are usually correct, the distinction between a standard and a special fastener is always arbitrary, often ambiguous, and sometimes controversial. The petition does not reveal the fact that some standard fasteners cannot be referenced from standards publications, and that many special fasteners are carried in inventory.

Fastener Standards, a publication of the Industrial Fastener Institute, describes the difficulties inherent in the standard versus special distinction:

A product that may be referred to as standard by one manufacturer or user, might be completely special to another. For example, a producer may manufacture 1,000,000 pieces every week of a given type of product. Because of this quantity, he refers to this as a standard item for his production. In terms of industry usage, however, this may be a special.



Essentially, the term "standard" as it is used here refers to a high-volume, commodity-type fastener. The characteristics "high-volume" and "commodity-type" do not relate to the physical properties of the product, but rather to its present use in commercial trade. Such product classification defies consistent application and presents insurmountable obstacles to data collection and analysis.

Bolt versus screw

Traditionally higher rates of duty on screws vis-a-vis bolts have created much controversy and led to many classification battles in customs court. This series of litigation culminated on April 17, 1968, in C.D. 3412, MSL Industries v. United States, where certain imported merchandise was invoiced as "Hexagon Socket Head Bolts," and classified as "other screws" under item 646.63 of the TSUS, yet claimed to be "bolts" under item 646.54 of the TSUS. Judge Richardson stated:

What we are dealing with here are competing economic provisions for bolts and screws, concerning which the court must, among other things, undertake to ascertain their common meaning vis-a-vis the merchandise at bar. Plaintiff has cited to us the case of Morris Supply Company v. United States, 52 Cust. Ct. 174, C.D. 2457, as authority for its contention that a capscREW in general and a socket head capscREW in particular is a bolt. And defendant has called our attention to a number of lexicographical authorities which it contends compel the conclusion that capscREWS are screws within the meaning of the tariff provisions for screws.

The court found that "although lexicographical authorities place this merchandise in the category of bolts, the tariff schedules indicate an administrative practice of classifying the merchandise as 'screws' and a clear congressional intent to approve such practice. Held, the court is bound to follow the clear intention of Congress."

In testimony before the Committee on Ways and Means, MSL Industries had claimed that the administrative practice described above was suspect:

The United States Cap Screw Service Bureau and its members have, by means of deliberate, conscious misrepresentation, continued their efforts to achieve their predetermined result, which is to change this product from a "bolt" to a "screw".

This trade association acts as "experts" in advising the U.S. Customs officials as to whether an article

is, or is not, a bolt. Although such advice is hardly disinterested, it has been particularly effective.

The "clear congressional intent" alluded to in C.D. 3412 refers to subpart D of part 3 of schedule 6 of the TSUS. Judge Richardson states:

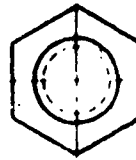
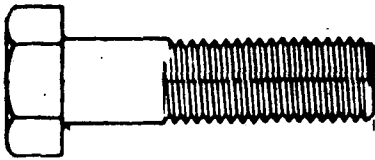
The schedule makes use of the word (cap screws) only in excluding articles so designated from the duty rate accorded machine screws of certain dimensions. And this exclusionary use of the term "cap screws" takes place under the heading of "screws" in the statute. This would seem to indicate a legislative intent to treat the article designated as "cap screws" as "screws".

According to current customs procedure, a cap screw is distinguished from the bolts in item 646.54 by the presence of a washer face on the underside of the head of the cap screw. The washer face distinguishing a cap screw from a bolt is illustrated on the following page.

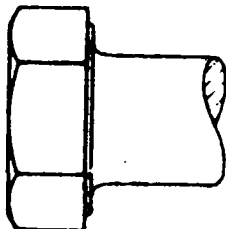
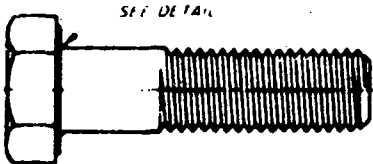
Pieces versus pounds

Despite essential similarity, bolts, nuts, and large screws are not homogeneous products. The vast range of head configurations, diameters, lengths, and finishes account for the fact that more than 150 million different fastener products were manufactured in 1976. This diversity presents some difficulty in choosing an acceptable unit of quantity for these commodities. Evidence suggests that two major biases occur when using pounds as the unit of quantity for bolts, nuts, and large screws. First, most imported articles have small diameters. Generally, small diameter fasteners receive more fabrication, i.e., forming, heading, and threading per pound, than large diameter fasteners, and more fabrication per pound generally means more value added per pound. Because most imported fasteners have small diameters, the use of pounds as a unit of quantity tends to understate the impact of imports on the U.S. market. Second, significantly more domestic articles are manufactured to end-user specifications than imported articles. A product manufactured to unique customer specifications generally requires more engineering input and setup time and, therefore, contains more value added per pound than fasteners made to industry standards. Because domestic articles are more apt to be made to unique end-user specifications than imports, the use of pounds as a unit of quantity tends to overstate the impact of imports on the U.S. market. In conclusion, the two major biases inherent in the use of pounds as a unit of quantity appear to be similar in magnitude and offsetting in effect. For this reason pounds were used as the unit of quantity in the trade data of this report.

HEX BOLTS



HEX CAP SCREWS (FINISHED HEX BOLTS)



APPENDIX B
STATISTICAL TABLES

Table 1.--Bolts, nuts, and large screws of iron or steel: U.S. producers' shipments, imports for consumption, exports of domestic merchandise, and apparent consumption, by types, 1969-77, January-June 1977, and January-June 1978

(Quantity in thousands of pounds)						
Type and period	Producers' shipments	Imports 1/	Exports 2/	Apparent consumption	Ratio (percent) of imports to--	
					Shipments	Apparent consumption
Quantity						
Bolts and large screws:						
1969-----	1,150,066	206,363	81,914	1,274,515	18	16
1970-----	1,074,638	224,629	77,457	1,221,810	21	18
1971-----	983,467	215,833	71,667	1,127,633	22	19
1972-----	1,119,237	279,382	84,355	1,314,264	25	21
1973-----	1,197,013	329,038	102,665	1,423,386	28	23
1974-----	1,242,072	474,829	127,350	1,589,551	38	30
1975-----	852,064	329,758	129,006	1,052,816	39	31
1976-----	912,072	474,084	150,078	1,236,078	52	38
1977-----	950,607	491,140	166,203	1,275,544	52	41
January-June--						
1977-----	502,746	255,849	78,422	680,173	51	38
1978-----	499,067	287,314	83,886	702,495	58	41
Nuts:						
1969-----	340,307	165,661	13,134	492,834	49	34
1970-----	298,284	176,062	11,691	462,655	59	38
1971-----	263,535	163,415	11,560	415,390	62	39
1972-----	303,089	194,812	17,690	480,211	64	41
1973-----	309,074	215,525	21,730	502,869	70	43
1974-----	312,173	301,613	31,802	581,984	97	52
1975-----	198,076	205,038	43,480	359,634	104	57
1976-----	221,880	230,390	47,191	405,079	104	57
1977-----	224,956	225,776	52,062	398,670	108	57
January-June--						
1977-----	127,862	116,010	27,850	216,022	91	54
1978-----	119,795	113,937	28,706	205,026	95	56
Total:						
1969-----	1,490,373	372,024	95,048	1,767,349	25	21
1970-----	1,372,922	400,691	89,148	1,684,465	29	24
1971-----	1,247,002	379,248	83,227	1,543,023	30	25
1972-----	1,422,326	474,194	102,045	1,794,475	33	26
1973-----	1,506,087	544,563	124,395	1,926,255	36	28
1974-----	1,554,246	776,442	159,107	2,171,581	50	36
1975-----	1,050,140	534,796	172,486	1,412,450	51	38
1976-----	1,133,952	704,474	197,269	1,641,157	62	43
1977-----	1,175,563	716,916	218,265	1,674,214	61	43
January-June--						
1977-----	630,608	371,859	106,252	896,215	59	42
1978-----	618,862	421,251	112,392	927,721	68	45

1/ See footnotes at end of table.

Table 1.--Bolts, nuts, and large screws of iron or steel: U.S. producers' shipments, imports for consumption, exports of domestic merchandise and apparent consumption, by types, 1969-77, January-June 1977, and January-June 1978--Continued

Type and period	Producer	Im-	Ex-	Apparent	Ratio (percent) of	
	Shipments	ports 1/	ports 2/	consumption	imports to--	
					Shipments	Apparent consumption
	(Value in thousands of dollars)					
Bolts and large screws:						
1969-----	545,131	35,629	36,856	543,904	7	7
1970-----	500,781	44,289	36,692	508,378	9	9
1971-----	493,700	43,839	35,317	502,222	9	9
1972-----	568,572	62,191	40,114	590,649	11	11
1973-----	661,948	91,150	51,429	701,669	14	13
1974-----	850,819	202,576	73,196	980,199	24	21
1975-----	684,207	127,669	77,930	733,946	19	17
1976-----	702,426	161,697	83,125	780,998	23	21
1977-----	779,917	156,925	87,100	849,742	20	19
January-June--						
1977-----	417,781	94,774	43,268	469,287	23	20
1978-----	433,190	111,099	45,075	499,214	26	22
Nuts:						
1969-----	191,737	33,569	9,647	215,659	18	16
1970-----	172,028	41,611	8,684	204,955	24	20
1971-----	169,876	38,500	9,374	199,002	23	19
1972-----	202,825	51,255	11,322	242,758	25	21
1973-----	247,723	75,198	14,613	308,308	30	24
1974-----	333,517	185,646	22,536	496,627	56	37
1975-----	263,243	99,459	23,321	496,627	38	29
1976-----	284,006	98,093	23,930	339,381	35	27
1977-----	294,692	100,214	27,152	367,754	34	27
January-June--						
1977-----	157,270	55,660	14,162	198,768	35	28
1978-----	178,129	70,093	15,341	232,881	39	30
Total:						
1969-----	736,868	69,198	46,503	759,563	9	9
1970-----	672,809	85,900	45,376	713,333	13	12
1971-----	663,576	82,339	44,691	701,224	13	12
1972-----	771,397	113,466	51,436	833,427	15	14
1973-----	909,671	166,348	66,042	1,009,977	18	17
1974-----	1,184,336	388,222	95,732	1,476,826	33	26
1975-----	947,450	227,128	101,251	1,073,327	24	21
1976-----	986,432	259,790	107,055	1,139,167	26	23
1977-----	1,074,609	257,139	114,252	1,217,496	24	21
January-June--						
1977-----	575,051	150,434	59,430	666,055	26	23
1978-----	611,319	181,192	60,416	732,095	30	25

1/ Quantity does not include bolts, nuts, and screws imported free of duty from Canada under the Automotice Products Trade Act (APTA); quantity of such articles is not reported in the official statistics of the U.S. Department of Commerce. Value of imports includes bolts, nuts, and screws imported free of duty from Canada (APTA).

In official import statistics of the U.S. Department of Commerce, the TSUS items containing screws were reported in gross pieces during 1969-74; for these years, the staff converted the gross pieces into pounds.

2/ Prior to January 1, 1978, exports include bolts, threaded rods and studs, nuts if nuts and bolts are in the same shipment, screws, rivets, washers, and similar articles. It is estimated by the staff of the U.S. International Trade Commission that bolts, nuts, and large screws of iron or steel accounted for approximately 80 percent of total exports.

Source: U.S. producers' shipments, compiled from data submitted in response to questionnaires of the U.S. International Trade Commission; imports and exports, compiled from official statistics of the U.S. Department of Commerce.

Table 2.--Bolts, nuts, and large screws: U.S. imports for consumption, by principal sources, 1972-77, January-June 1977, and January-June 1978

Source	1972	1973	1974	1975	1976	1977	January-June--	
							1977	1978
Quantity (1,000 pounds)								
Japan-----	1/	1/	1/	382,075	532,360	535,017	274,044	278,016
Canada-----	1/	1/	1/	41,215	58,613	67,345	33,072	2/ 86,064
Taiwan-----	1/	1/	1/	6,827	28,333	31,792	14,858	32,348
India-----	1/	1/	1/	7,163	12,259	26,368	11,641	17,829
Spain-----	1/	1/	1/	12,404	15,566	11,655	7,339	9,258
Netherlands-----	1/	1/	1/	13,872	7,226	7,488	3,583	5,731
Italy-----	1/	1/	1/	17,079	12,492	9,773	6,068	5,336
West Germany-----	1/	1/	1/	19,306	8,931	7,089	4,238	4,118
All other-----	1/	1/	1/	34,854	30,679	20,389	17,015	7,836
Total-----	474,194	544,563	776,442	534,795	704,475	716,916	371,859	2/ 456,537
Value (1,000 dollars)								
Japan-----	70,739	103,600	261,879	135,712	160,082	178,134	91,981	103,892
Canada 3/-----	24,344	33,716	56,515	39,501	58,198	70,527	34,459	43,361
Taiwan-----	238	813	8,851	2,044	6,293	7,784	3,655	8,538
India-----	46	175	1,552	1,838	2,038	5,193	2,228	3,254
Spain-----	1,688	2,249	2,265	3,839	3,399	2,950	2,177	2,233
Netherlands-----	1,678	3,581	5,938	6,472	3,308	2,909	1,420	2,463
Italy-----	2,795	3,891	6,665	8,155	4,964	4,096	2,855	2,623
West Germany-----	2,410	3,737	7,205	8,958	5,832	6,544	3,308	3,924
All other-----	9,487	14,623	33,290	20,606	15,675	17,203	8,351	10,905
Total-----	113,425	166,385	388,180	227,125	259,789	295,340	150,434	181,193

1/ Not available.

2/ Includes the quantity of imports entered duty free from Canada as original motor-vehicle equipment, other periods do not include imports.

3/ Includes the value of imports entered duty free from Canada as original motor-vehicle equipment.

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

Table 3.-- Bolts, nuts, and large screws: U.S. production and producers' capacity, 1/ 1972-77, January-June 1977, and January-June 1978

Item	1972	1973	1974	1975	1976	1977	January-June--	
							1977	1978
Bolts and large screws:								
Production								
million pounds--	1,113	1,146	1,241	864	910	931	492	488
Capacity-----do----	1,569	1,481	1,545	1,553	1,651	1,598	832	799
Ratio of production to								
capacity-----percent--	71	77	80	56	55	58	59	61
Nuts:								
Production								
million pounds--	312	280	317	205	214	207	126	121
Capacity-----do----	442	427	475	513	538	533	259	262
Ratio of production to								
capacity-----percent--	71	66	67	40	40	39	49	46
Total:								
Production								
million pounds--	1,425	1,426	1,558	1,069	1,124	1,138	618	609
Capacity-----do----	2,011	1,910	2,020	2,066	2,189	2,131	1,091	1,061
Ratio of production to								
capacity-----Percent--	71	75	77	52	51	53	57	57

1/ Capacity is defined as the normal sustained production that can be achieved on an annual basis and is based upon a firm's average product mix during 1974-77 with allowance made for anticipated maintenance downtime.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 4.--Profit-and-loss experience of 41 U.S. producers on their bolt, nut,
and large screw operations, 1972-77 and January-June 1978

Item	: 1972	: 1973	: 1974	: 1975	: 1976	: 1977 <u>1/</u>	: January- June :1978 <u>1/</u>
Net sales-----1,000 dollars--	499,674	634,653	852,613	680,151	692,694	694,280	423,316
Cost of goods sold-----do----	405,449	499,332	611,822	494,344	524,326	522,879	338,977
Gross profit-----do----	94,225	135,321	240,791	185,807	168,368	141,401	84,339
Selling and administrative expenses	:	:	:	:	:	:	:
1,000 dollars--	67,117	75,952	94,607	85,653	89,708	88,548	50,869
Net operating profit-----do----	27,108	59,369	146,184	100,154	78,660	52,853	33,469
Other income or (expenses)-----do----	(1,775)	(392)	515	(210)	145	(411)	311
Net profit before income taxes-----do----	25,333	58,977	146,699	99,944	78,805	52,442	33,841
Ratio of net operating profit to	:	:	:	:	:	:	:
net sales-----percent--	5.4	9.4	17.1	14.7	11.4	7.6	7.9

1/ Data were submitted by 35 producers.

2/ Data were submitted by 37 producers.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note.--Owing to a different sampling of U.S. producers, data reported above for the years 1972-74 may differ from data published in USITC Publication 747, Bolts, Nuts, and Screws of Iron or Steel . . .

Table 5.--Average number of persons employed in U.S. establishments in which bolts, nuts, and large screws were produced, total and production and related workers engaged in the production of all products and of bolts, nuts, and large screws, 1969-77 and January-June 1978

Period	: Production and related workers : : Total, all : engaged in the production of-- : : employees : All : Bolts, and : Nuts : Total				
	: products : large screws : : : :				
	:	:	:	:	:
1969-----	43,457	34,154	1/	1/	20,345
1970-----	40,639	32,541	1/	1/	18,818
1971-----	38,624	30,744	1/	1/	17,273
1972-----	40,073	32,262	1/	1/	16,935
1973-----	42,092	33,791	1/	1/	17,821
1974-----	42,342	34,497	13,275	4,382	17,657
1975-----	35,101	26,977	10,290	3,492	13,782
1976-----	34,339	27,080	10,032	3,435	13,467
1977-----	35,172	27,642	10,040	3,410	13,450
1978 (January-June)-----	36,284	28,432	10,310	3,365	13,675

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 6.--Man-hours expended by production and related workers in U.S. establishments in which bolts, nuts, and large screws were produced, 1969-77 and January-June 1978

(In thousands of man-hours)

Period	: All : Bolts and : Nuts : Total			
	: products : large screws : : :	:	:	:
1969-----	73,226	1/	1/	45,472
1970-----	67,038	1/	1/	39,223
1971-----	61,758	1/	1/	35,905
1972-----	70,434	1/	1/	37,381
1973-----	73,331	1/	1/	39,143
1974-----	74,322	29,597	9,657	39,254
1975-----	54,470	20,636	6,737	27,373
1976-----	55,073	20,643	6,771	27,414
1977 2/-----	56,213	20,715	6,795	27,510
1978 (January-June) 2/-----	28,474	10,720	3,517	14,237

1/ Not available.

2/ Estimated.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 7.-- Bolts, nuts, and large screws: Ranges and averages 1/ of lowest net selling prices received by U.S. producers and importers on sales of cap screws, grade 2, 3/8"-16 x 1", 2/ to distributors, by specified periods, January 1972-June 1978

Period	Domestic price		Import price		Ratio of	
					average	
					import	
	Range	Average	Range	Average	price to	average
					domestic	
					price	
	Per	Per	Per	Per		
	1,000	1,000	1,000	1,000		
	pieces	pieces	pieces	pieces	Percent	
1972:						
Jan.-June--:	\$9.08-\$24.50	\$10.80	\$6.20-\$15.31	\$7.94		74
July-Dec--:	9.28- 24.50	11.05	6.98- 9.80	8.04		73
1973:						
Jan.-Mar--:	9.45- 24.50	11.77	7.85- 19.80	11.62		99
Apr.-June--:	9.58- 24.50	11.62	9.37- 19.80	10.67		92
July-Sept--:	11.11- 24.50	12.23	7.42- 19.80	11.73		96
Oct.-Dec--:	10.80- 24.50	12.52	10.40- 19.80	14.28		114
1974:						
Jan.-Mar--:	11.27- 24.50	12.91	12.89- 24.80	16.48		128
Apr.-June--:	12.40- 51.00	17.70	15.10- 24.80	18.47		104
July-Sept--:	18.20- 51.00	22.14	14.95- 24.80	20.67		93
Oct.-Dec--:	18.92- 51.00	22.92	14.75- 33.53	18.28		80
1975:						
Jan.-Mar--:	23.46- 51.00	25.41	13.33- 33.53	15.82		62
Apr.-June--:	23.44- 51.00	24.53	12.38- 33.53	15.55		63
July-Sept--:	15.88- 30.00	22.86	11.14- 25.10	15.64		64
Oct.-Dec--:	15.88- 30.00	22.09	10.75- 25.10	14.52		68
1976:						
Jan.-Mar--:	15.90- 30.00	21.74	11.37- 15.90	13.50		66
Apr.-June--:	15.90- 27.00	21.75	12.28- 15.90	14.32		62
July-Sept--:	15.87- 27.30	22.05	12.85- 15.95	14.74		67
Oct.-Dec--:	15.90- 27.30	21.88	10.16- 16.90	14.50		66
1977:						
Jan.-Mar--:	15.90- 27.30	21.64	13.44- 17.25	15.06		70
Apr.-June--:	15.90- 31.57	20.53	13.36- 17.25	14.79		72
July-Spet--:	15.90- 22.86	19.88	12.70- 18.15	14.88		75
Oct.-Dec--:	15.90- 24.00	19.85	12.67- 18.15	14.99		76
1978:						
Jan.-Mar--:	15.90- 24.00	21.92	13.66- 19.06	16.24		74
Apr.-June--:	15.90- 25.02	21.38	15.03- 19.93	17.83		83

1/ Weighted averages are used for the specified periods January 1972-June 1975; simple averages are used for the specified periods July 1975-June 1978.

2/ The precise specifications corresponding to this fastener are shown in app. C.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 8.-- Bolts, nuts, and large screws: Ranges and averages ^{1/} of net selling prices received by U.S. producers and importers on sales of cap screws, grade 8, 3/8"-16 x 1", ^{2/} to distributors, by specified periods, January-1972-June 1978

Period	Domestic price		Import price		Ratio of	
					average	
					import	
	Range	Average	Range	Average	price to	average
					domestic	price
	Per	Per	Per	Per		
	1,000	1,000	1,000	1,000		
	pieces	pieces	pieces	pieces	Percent	
1972:						
Jan.-June--	\$23.64-\$31.50	\$25.15	\$19.06	\$19.06		76
July-Dec---	20.28- 26.90	24.84	3/	3/		3/
1973:						
Jan.-Mar---	22.95- 33.71	28.80	3/	3/		3/
Apr.-June--	26.07- 37.44	29.06	\$14.72- 27.17	17.30		60
July-Sept--	26.55- 37.44	29.05	9.03- 27.17	21.83		75
Oct.-Dec---	26.94- 37.44	29.01	25.47- 29.64	29.13		100
1974:						
Jan.-Mar---	30.60- 38.72	31.93	26.81- 33.82	30.32		95
Apr.-June--	34.43- 62.40	36.02	26.81- 36.89	34.38		95
July-Sept--	38.25- 65.52	39.52	29.17- 36.89	36.12		91
Oct.-Dec---	31.80- 48.53	42.40	29.17- 36.89	33.67		79
1975:						
Jan.-Mar---	33.65- 48.53	40.40	25.82- 33.82	28.67		71
Apr.-June--	28.94- 48.53	40.67	19.35- 33.09	23.13		57
July-Sept--	20.43- 44.80	30.50	22.45- 29.79	26.12		86
Oct.-Dec---	20.43- 44.80	28.17	20.24- 29.79	25.02		89
1976:						
Jan.-Mar---	21.28- 44.80	31.07	20.24- 29.79	25.02		81
Apr.-June--	21.28- 44.68	30.61	22.09- 27.82	24.96		82
July-Sept--	21.28- 40.32	29.24	21.40- 29.77	24.86		85
Oct.-Dec---	21.28- 43.80	30.91	21.40- 29.77	24.72		80
1977:						
Jan.-Mar---	21.28- 44.63	30.51	22.54- 40.30	27.63		91
Apr.-June--	21.28- 37.45	29.78	21.40- 40.30	27.87		94
July-Sept--	22.34- 34.20	29.74	21.28- 40.30	26.41		89
Oct.-Dec---	22.34- 39.76	30.35	21.67- 40.30	27.12		89
1978:						
Jan.-Mar---	28.45- 40.32	32.96	22.70- 44.10	29.38		89
Apr.-June--	30.15- 43.74	34.07	23.90- 44.10	31.76		93

^{1/} Weighted averages are used for the specified periods January 1972-June 1975; simple averages are used for the specified periods July 1975-June 1978.

^{2/} The precise specifications corresponding to this fastener are shown in app. C.

^{3/} Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 9.-- Bolts, nuts, and large screws: Ranges and averages ^{1/} of lowest net selling prices received by U.S. producers and importers on sales of hexagon nuts, 1/4"-20, ^{2/} to distributors, by specified periods, January 1972-June 1978

Period	Domestic price		Import price		Ratio of average import price to average domestic price
	Range	Average	Range	Average	
	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Percent</u>
1972:					
Jan.-June--:	\$2.49-\$6.97	\$3.42	\$1.27-\$6.00	\$1.89	55
July-Dec---	2.61- 6.97	3.06	1.45- 5.50	2.07	68
1973:					
Jan.-Mar---	2.61- 7.20	4.21	1.57- 6.00	2.89	69
Apr.-June--:	2.81- 7.20	4.17	1.65- 6.00	2.55	61
July-Sept--:	3.15- 7.20	4.23	1.76- 6.49	3.00	71
Oct.-Dec---	3.22- 8.10	4.10	2.63- 6.80	4.05	99
1974:					
Jan.-Mar---	3.47- 8.10	4.73	2.71-14.70	5.89	125
Apr.-June--:	3.44-18.00	5.56	2.75-14.70	7.14	128
July-Sept--:	5.40-18.00	7.43	2.65-14.70	5.17	70
Oct.-Dec---	5.75-18.00	6.76	1.89- 9.00	3.12	46
1975:					
Jan.-Mar---	5.75-18.00	8.07	1.36-10.00	2.08	26
Apr.-June--:	5.64-18.00	8.06	1.46-10.00	2.35	29
July-Sept--:	2.91-10.00	5.96	1.60- 2.70	2.05	34
Oct.-Dec---	2.81- 9.93	5.94	1.50- 2.70	2.14	36
1976:					
Jan.-Mar---	2.69- 8.81	5.66	1.71- 2.70	2.21	39
Apr.-June--:	2.69- 8.80	5.66	1.71- 2.61	2.17	38
July-Sept--:	2.63- 9.78	5.85	1.68- 2.84	2.31	39
Oct.-Dec---	2.63- 9.83	5.85	1.80- 3.01	2.35	40
1977:					
Jan.-Mar---	2.59- 8.82	5.72	2.10- 2.94	2.47	43
Apr.-June--:	2.59- 8.70	5.64	2.10- 2.94	2.40	43
July-Sept--:	3.06- 8.59	6.33	2.00- 3.10	2.47	39
Oct.-Dec---	3.40- 8.76	6.45	2.20- 3.10	2.52	39
1978:					
Jan-Mar--	3.75- 9.00	6.50	2.44- 3.50	2.84	44
Apr.-June--:	4.00- 9.90	6.58	2.87- 4.60	3.96	60

^{1/}Weighted averages are used for the specified periods January 1972-June 1975; simple averages are used for the specified periods July 1975-June 1978.

^{2/}The precise specifications corresponding to this fastener are shown in app. C.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 10.--Bolts, nuts, and large screws: Ranges and averages ^{1/} of lowest net selling prices received by U.S. producers and importers on sales of hexagon nuts, 1/2"-13, ^{2/} to distributors, by specified periods, January 1972-June 1978

Period	Domestic price		Import price		Ratio of average import price to average domestic price
	Range	Average	Range	Average	
	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Per</u> <u>1,000</u> <u>pieces</u>	<u>Per</u> <u>1,000</u> <u>pieces</u>	Percent
1972:					
Jan.-June--:	\$9.36-\$25.90	\$11.10	\$6.41-\$20.00	\$8.77	79
July-Dec---:	9.82- 25.90	11.01	6.82- 18.00	8.55	78
1973:					
Jan.-Mar---:	9.82- 25.90	12.62	6.99- 23.50	10.01	79
Apr.-June--:	10.40- 25.90	12.09	6.99- 25.62	10.85	90
July-Sept--:	11.43- 25.90	13.28	7.02- 23.50	11.50	87
Oct.-Dec---:	11.66- 32.40	13.27	7.09- 26.00	16.64	125
1974:					
Jan.-Mar---:	13.48- 32.40	17.95	7.09- 42.50	25.47	142
Apr.-June--:	14.20- 72.50	22.59	7.09- 42.50	27.98	124
July-Sept--:	14.20- 72.50	27.73	7.09- 51.00	22.93	83
Oct.-Dec---:	18.90- 72.50	25.32	10.35- 44.40	15.63	62
1975:					
Jan.-Mar---:	18.90- 72.50	26.11	8.80- 37.80	11.36	44
Apr.-June--:	18.90- 72.50	22.89	9.85- 37.80	11.43	50
July-Sept--:	16.89- 37.02	25.12	8.75- 14.50	11.55	46
Oct.-Dec---:	16.89- 36.86	25.11	8.79- 13.50	11.25	45
1976:					
Jan.-Mar---:	17.60- 33.42	24.22	9.15- 13.50	11.79	49
Apr.-June--:	17.60- 33.02	24.23	9.00- 14.98	12.22	50
July-Sept--:	17.60- 36.93	25.00	8.84- 15.44	12.78	51
Oct.-Dec---:	17.60- 28.40	23.84	10.67- 15.73	13.07	55
1977:					
Jan.-Mar---:	17.60- 32.88	24.44	10.60- 15.19	12.76	52
Apr.-June--:	17.60- 32.98	24.23	10.58- 14.02	12.51	52
July-Sept--:	18.48- 29.68	23.52	9.13- 16.90	12.66	54
Oct.-Dec---:	18.48- 31.67	24.42	10.04- 16.90	12.77	52
1978:					
Jan.-Mar---:	18.48- 34.02	25.80	10.49- 18.50	14.01	54
Apr.-June--:	18.48- 37.26	26.20	10.68- 23.28	18.59	71

^{1/} Weighted averages are used for the specified periods January 1972-June 1975; simple averages are used for the specified periods July 1975-June 1978.

^{2/} The precise specifications corresponding to this fastener are shown in app. C.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 11.--Bolts, nuts, and large screws: Ranges and averages 1/ of lowest net selling prices received by U.S. producers and importers on sales of structural bolts, A325, with nut, 3/4" x 2", 2/ to distributors, by specified periods, January 1972-June 1978

Period	Domestic price		Import price		Ratio of
	Range	Average	Range	Average	average
					import
					price to
					average
					domestic
					price
	Per	Per	Per	Per	
	1,000	1,000	1,000	1,000	
	pieces	pieces	pieces	pieces	Percent
1972:					
Jan.-June---	\$134.48-\$165.20	\$164.80	\$125.98	\$125.98	76
July-Dec---	141.81- 178.00	162.32	\$144.13- 148.00	144.61	89
1973:					
Jan.-Mar---	146.92- 178.00	176.62	133.45- 160.00	157.05	89
Apr.-June---	152.16- 188.80	185.92	170.81- 182.00	176.48	95
July-Sept---	166.16- 188.80	186.02	247.00	247.00	133
Oct.-Dec---	169.65- 188.80	184.77	247.54- 250.00	247.88	134
1974:					
Jan.-Mar---	189.57- 236.00	217.21	257.89- 410.11	259.37	119
Apr.-June---	215.09- 282.50	258.42	254.27- 343.00	284.17	110
July-Sept---	280.60- 369.50	342.06	294.00- 366.81	344.27	101
Oct.-Dec---	272.55- 408.60	339.23	256.00- 366.84	339.22	100
1975:					
Jan.-Mar---	258.03- 357.00	316.43	251.00- 397.20	314.32	99
Apr.-June---	316.07- 403.85	334.35	234.82- 397.20	268.50	80
July-Sept---	187.18- 357.00	293.33	226.36- 313.33	262.52	89
Oct.-Dec---	191.56- 352.90	290.28	210.00- 282.00	237.34	82
1976:					
Jan.-Mar---	189.43- 352.90	289.66	212.50- 282.00	238.95	82
Apr.-June---	194.95- 357.00	308.26	189.00- 282.00	239.13	78
July-Sept---	199.30- 357.00	293.23	217.00- 282.00	238.62	81
Oct.-Dec---	162.55- 339.20	272.34	194.00- 298.73	231.91	85
1977:					
Jan.-Mar---	215.00- 339.20	281.75	204.09- 283.74	232.33	82
Apr.-June---	215.00- 339.20	282.92	203.00- 283.74	230.17	81
July-Sept---	215.00- 321.31	283.11	205.29- 283.74	243.65	86
Oct.-Dec---	215.00- 321.30	278.76	205.97- 288.31	248.71	89
1978:					
Jan.-Mar---	216.41- 343.80	299.46	246.00- 293.69	275.18	92
Apr.-June---	246.89- 343.80	314.20	267.72- 346.00	306.03	97

1/ Weighted averages are used for the specified periods January 1972-June 1975; simple averages are used for the specified periods July 1975-June 1978.

2/ The precise specifications corresponding to this fastener are shown in app.C.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 12.--Bolts, nuts, and large screws: Ranges and averages 1/ of lowest net selling prices received by U.S. producers and importers on sales of carriage bolts, 3/8" x 3", 2/ to distributors, by specified periods, January 1972-June 1978

Period	Domestic price		Import price		Ratio of
	Range	Average	Range	Average	average
					import
					price to
				average	domestic
					price
	Per	Per	Per	Per	
	1,000	1,000	1,000	1,000	
	pieces	pieces	pieces	pieces	Percent
1972:					
Jan.-June--	\$20.24-\$28.01	\$26.80	\$13.50-\$30.00	\$15.10	56
July-Dec---	18.41- 28.01	26.89	16.56- 30.00	19.12	71
1973:					
Jan.-Mar---	20.88- 35.40	27.64	16.54- 39.20	18.41	67
Apr.-June--	20.55- 35.40	26.91	22.11- 39.20	25.84	96
July-Sept--	25.90- 35.40	28.09	20.11- 39.20	27.74	99
Oct.-Dec---	24.35- 38.01	28.29	27.12- 40.00	35.35	125
1974:					
Jan.-Mar---	27.84- 35.52	29.28	31.80- 53.80	33.83	116
Apr.-June--	28.01- 44.00	31.26	33.27- 53.80	46.66	149
July-Sept--	28.01- 53.25	39.20	33.08- 53.80	41.17	105
Oct.-Dec---	39.32- 53.40	48.97	34.02- 66.20	42.34	86
1975:					
Jan.-Mar---	39.22- 53.40	45.11	25.47- 66.20	30.01	67
Apr.-June--	39.22- 53.40	51.18	22.63- 66.20	28.12	55
July-Sept--	38.90- 74.40	52.72	21.30- 39.88	30.77	58
Oct.-Dec---	33.40- 74.40	51.96	29.34- 37.77	32.23	62
1976:					
Jan.-Mar---	33.40- 74.40	49.46	21.95- 37.77	31.21	63
Apr.-June--	33.40- 66.96	48.78	24.93- 37.77	32.32	66
July-Sept--	33.40- 66.96	50.55	29.60- 39.20	32.94	65
Oct.-Dec---	33.40- 66.96	50.70	29.23- 38.85	34.01	67
1977:					
Jan.-Mar---	33.40- 55.80	47.78	29.50- 41.36	36.14	76
Apr.-June--	33.40- 65.10	45.99	28.50- 42.02	35.09	76
July-Sept--	33.40- 55.80	43.57	26.00- 47.08	35.37	81
Oct.-Dec---	33.40- 59.52	44.53	29.58- 47.08	35.85	81
1978:					
Jan.-Mar---	33.40- 59.52	44.68	31.29- 47.08	38.47	86
Apr.-June--	37.40- 59.52	45.90	34.24- 46.35	41.86	91

1/ Weighted averages are used for the specified periods January 1972-June 1975; simple averages are used for the specified periods July 1975-June 1978.

2/ The precise specifications corresponding to this fastener are shown in app. C.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 13.--Bolts, nuts, and large screws: Indexes of lowest net selling prices received by U.S. producers on sales of selected fasteners to distributors, by specified periods, January 1972-June 1978.

(January-June 1972=100)								
Period	Cap screw, grade 2, 3/8"-16 x 1"	Cap screw, grade 8, 3/8"-16 x 1"	Hexagon nut, 1/4"-20	Hexagon nut, 1/2"-13	Structural bolt, A325, with nut, 3/4" x 2"	Carriage bolt, 3/8" x 3"	Average	
1972:								
January-June-----	100	100	100	100	100	100	100	100
July-December-----	102	99	90	99	99	100	98	
1973:								
January-March-----	109	115	123	114	107	103	111	
April-June-----	108	116	122	109	113	100	111	
July-September-----	113	116	124	120	113	105	115	
October-December---	116	115	120	120	112	106	114	
1974:								
January-March-----	120	127	138	162	132	109	131	
April-June-----	164	143	163	204	157	117	158	
July-September-----	205	157	217	250	208	146	197	
October-December---	212	169	198	228	206	183	199	
1975:								
January-March-----	235	161	236	235	192	168	204	
April-June-----	227	162	236	206	203	191	204	
July-September-----	212	121	174	226	178	197	185	
October-December---	205	112	174	226	176	194	181	
1976:								
January-March-----	201	124	165	218	176	185	178	
April-June-----	201	122	165	218	187	182	179	
July-September-----	204	116	171	225	178	189	181	
October-December---	203	123	171	215	165	189	178	
1977:								
January-March-----	200	121	167	220	171	178	176	
April-June-----	190	118	165	218	172	172	173	
July-September-----	184	118	185	211	171	162	172	
October-December---	183	120	188	220	169	166	174	
1978:								
January-March-----	202	131	190	232	181	166	184	
April-June-----	197	135	192	236	190	175	188	

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 14.--Bolts, nuts, and large screws: Indexes of prices for durable manufactured goods, miscellaneous metal products, and domestic and imported fasteners, by specified periods, January 1972-June 1978

(January-June 1972 = 100)					
Period	: Durable : manufactured: : goods	: Miscellaneous: : metal : products	: Domestic : fasteners	: Imported : fasteners	
1972:	:	:	:	:	:
January-June-----	100	100	100	100	
July-December-----	101	101	98	110	
1973:	:	:	:	:	:
January-March-----	103	102	111	132	
April-June-----	106	104	111	132	
July-September-----	106	106	115	155	
October-December-----	108	108	114	194	
1974:	:	:	:	:	:
January-March-----	112	112	131	233	
April-June-----	120	124	158	274	
July-September-----	128	135	197	255	
October-December-----	133	142	199	216	
1975:	:	:	:	:	:
January-March-----	135	145	204	173	
April-June-----	137	146	204	161	
July-September-----	138	147	185	164	
October-December-----	140	148	181	159	
1976:	:	:	:	:	:
January-March-----	142	149	178	158	
April-June-----	144	149	179	162	
July-September-----	147	151	181	165	
October-December-----	149	155	178	166	
1977:	:	:	:	:	:
January-March-----	152	156	176	172	
April-June-----	155	157	173	170	
July-September-----	157	158	172	171	
October-December-----	160	161	174	174	
1978:	:	:	:	:	:
January-March-----	164	163	184	190	
April-June-----	167	167	188	222	

Source: Indexes for durable manufactured goods and miscellaneous metal products compiled from official statistics of the U.S. Bureau of Labor Statistics; indexes for domestic and imported fasteners, compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 15.--Bolts, nuts, and large screws: Indexes of lowest net selling prices received by importers on sales of selected fasteners to distributors, by specified periods, January 1972-June 1978

(January-June 1972=100)								
Period	Cap screw, grade 2, 3/8"-16 x 1"	Cap screw, grade 8, 3/8"-16 x 1"	Hexagon nut, 1/4"-20	Hexagon nut, 1/2"-13	Structural bolt, A325, with nut, 3/4" x 2"	Carriage bolt, 3/8" x 3"	Average	
1972:								
January-June-----	100	100	100	100	100	100	100	100
July-December-----	101	1/	110	98	115	127	110	
1973:								
January-March-----	146	1/	153	114	125	122	132	
April-June-----	134	91	135	124	140	171	132	
July-September-----	148	115	159	131	197	184	155	
October-December---	180	153	214	190	197	234	194	
1974:								
January-March-----	208	159	312	390	206	224	233	
April-June-----	233	180	378	319	226	309	274	
July-September-----	260	190	274	262	273	273	255	
October-December---	230	177	165	178	269	280	216	
1975:								
January-March-----	199	150	110	130	250	199	173	
April-June-----	196	121	124	130	213	186	161	
July-September-----	197	137	108	132	208	204	164	
October-December---	183	131	113	128	188	213	159	
1976:								
January-March-----	170	131	117	134	190	207	158	
April-June-----	180	131	115	139	190	214	162	
July-September-----	186	130	122	146	189	218	165	
October-December---	183	130	124	149	184	225	166	
1977:								
January-March-----	190	145	131	145	184	239	172	
April-June-----	186	146	127	143	183	232	170	
July-September-----	187	138	130	144	193	234	171	
October-December---	188	142	133	145	197	237	174	
1978:								
January-March-----	204	154	150	159	218	254	190	
April-June-----	224	166	209	211	242	277	222	

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 16.--Bolts, nuts, and large screws: Ratios of average import prices to average domestic prices, by selected fasteners, by specified periods, January 1972-June 1978

(In percent)								
Period	Cap screw, grade 2, 3/8"-16 x 1"	Cap screw, grade 8, 3/8"-16 x 1"	Hexagon nut, 1/4"-20	Hexagon nut, 1/2"-13	Structural bolt, A325 with nut, 3/4" x 2"	Carriage bolt, 3/8" x 3"	Average	
1972:								
January-June-----	74	76	55	79	76	56	69	
July-December-----	73	1/	68	78	89	71	76	
1973:								
January-March-----	99	1/	69	79	89	67	81	
April-June-----	92	60	61	90	95	96	82	
July-September-----	96	75	71	87	132	99	93	
October-December---	114	100	99	125	134	125	116	
1974:								
January-March-----	128	95	125	142	119	116	121	
April-June-----	104	95	128	124	110	149	118	
July-September-----	93	91	70	83	101	105	91	
October-December---	80	79	46	62	100	86	76	
1975:								
January-March-----	62	71	26	44	99	67	62	
April-June-----	63	57	29	50	80	55	56	
July-September-----	64	86	34	46	89	58	63	
October-December---	68	89	36	45	82	62	64	
1976:								
January-March-----	66	81	39	49	82	63	63	
April-June-----	62	82	38	50	78	66	63	
July-September-----	67	85	39	51	81	65	65	
October-December---	66	80	40	55	85	67	66	
1977:								
January-March-----	70	91	43	52	82	76	69	
April-June-----	72	94	43	52	81	76	70	
July-September-----	75	89	39	54	86	81	71	
October-December---	76	89	39	52	89	81	71	
1978:								
January-March-----	74	89	44	54	92	86	73	
April-June-----	83	93	60	71	97	91	83	

1/ Not available.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 17.--Bolts, nuts, and large screws: Ranges and averages 1/ of domestic costs 2/ and import costs 3/ of selected fastener items, 1972, 1974, 1976, and January-June 1978

Item and period	Domestic cost						
	Raw materials		Direct labor		Overhead		
	Range	Average	Range	Average	Range	Average	
----- Per 1,000 pieces -----							
Cap screw, grade 2, 3/8"-16 X 1":							
1972-----	\$2.28- \$5.78	\$5.17	\$0.41- \$4.90	\$0.67	\$0.73- \$8.83		\$3.59
1974-----	3.61- 10.24	7.78	.53- 6.58	1.40	1.43- 10.52		4.92
1976-----	4.87- 10.12	8.38	.20- 5.00	2.32	.44- 14.30		6.73
1978 January-June-----	5.16- 18.08	10.29	.84- 6.00	2.94	4.66- 13.47		8.64
Hex nut, 1/4"-20:							
1972-----	.45- 1.24	1.01	.30- .72	.50	1.51- 2.82		2.35
1974-----	.73- 1.48	1.35	.37- .92	.69	1.78- 3.12		2.49
1976-----	.86- 1.80	1.53	.10- 1.48	.70	.30- 7.46		3.45
1978 January-June-----	.89- 2.20	1.78	.15- 1.85	.89	.75- 7.79		4.51
Structural bolt, A325, X 2":							
1972-----	33.30-102.40	98.48	3.31-22.84	7.43	9.07- 81.98		18.21
1974-----	52.30-211.40	157.71	5.43-30.39	12.89	21.48- 92.49		50.28
1976-----	64.16-206.81	126.84	5.71-27.69	14.75	10.13-123.25		57.13
1978 January-June-----	71.00-254.14	155.71	6.27-30.72	18.60	40.07-128.42		81.45
Domestic cost--Con.			Import cost		Ratio of average import cost to average domestic cost		
Total							
Range	Average	Range	Average				
----- Per 1,000 pieces -----							Percent
Cap screw, grade 2, 3/8"-16 X 1:							
1972-----	\$6.80-\$19.34	\$9.43	\$5.18- \$6.71	\$6.06			64
1974-----	11.05- 24.73	14.10	11.27- 6.64	19.33			102
1976-----	10.19- 26.65	17.43	10.51- 12.25	11.71			67
1978 January-June-----	12.06- 30.39	21.93	12.19- 17.76	14.08			64
Hex nut, 1/4"-20:							
1972-----	2.70- 4.42	3.86	1.30- 1.76	1.47			38
1974-----	3.86- 5.53	4.53	3.40- 5.70	4.46			98
1976-----	2.40- 10.21	5.69	1.75- 2.12	1.89			33
1978 January-June-----	3.10- 11.00	7.24	2.40- 3.25	2.97			41
Structural bolt, A325, 3/4" X 2":							
1972-----	111.01-172.84	124.12	79.76- 98.79	89.28			72
1974-----	162.19-265.79	220.83	175.54-200.99	228.27			103
1976-----	139.51-272.22	199.22	166.76-187.88	178.42			90
1978 January-June-----	152.48-324.93	255.77	205.07-259.41	226.29			88

1/ Weighted averages are used for all domestic cost data; simple averages are used for all import cost data.

2/ Domestic cost is defined as the total unit cost of production, comprising material costs, direct labor costs, and overhead costs.

3/ Import cost is defined as the total delivered cost (including duty) to U.S. importers.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 18.--U.S. apparent consumption of steel mill products and bolts, nuts, and large screws, 1968-77

Year	: Steel : mill : products : 1,000 : net tons :	: Bolts, nuts, : and large : screws : Million : pounds
1968-----	: 107,648 :	: 1/
1969-----	: 102,682 :	: 1,767
1970-----	: 97,100 :	: 1,684
1971-----	: 102,682 :	: 1,543
1972-----	: 106,613 :	: 1,794
1973-----	: 122,528 :	: 1,926
1974-----	: 119,609 :	: 2,172
1975-----	: 89,016 :	: 1,412
1976-----	: 101,078 :	: 1,641
1977-----	: 108,451 :	: 1,674
	:	:

1/ Not available.

Source: Data on steel mill products compiled from statistics of the American Iron and Steel Institute; data on bolts, nuts, and large screws compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and from official statistics of the U.S. Department of Commerce.

APPENDIX C
SPECIFICATIONS FOR FASTENERS

The specifications for the fasteners for which price data were presented in tables 7 through 12 are as follows:

Cap screws:

Grade 2, 3/8"-16 x 1", hex head cap screws
with washer face, plain finish, UNC Class 2A thread.
Grade 8, 3/8"-16 x 1", hex head cap screws
with washer face, plain finish, UNC Class 2A thread.

Bolts:

High-strength structural bolts, A325, with
heavy hexagon head, washer faced, and heavy
hexagon nuts, 3/4" x 2".
Round head square neck carriage bolts, full size,
black, 3/8" x 3", less nut.

Nuts:

Finished hexagon nuts, bright, double chamfered,
plain finish, 1/4"-20.
Finished hexagon nuts, bright, double chamfered,
plain finish, 1/2"-13.

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