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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

Slow Productivity Growth In The U.S. Footwear Industry -- Can The Federal Government Help?

U.S. footwear manufacturers have experienced a steady economic decline since the late 1960s. The industry's productivity growth rate has been among the lowest of our Nation, primarily reflecting insufficient capital and technology. Imports have now captured about 50 percent of the domestic market. Coupled with a decline in domestic consumption of footwear, this has resulted in a shrinking U.S. manufacturing base and growing unemployment among industry workers.

This report analyzes the decline and recommends Government actions to improve the productivity and increase the competitiveness of U.S. footwear manufacturers. The report also recommends a forum to bring together public and private interests to identify alternatives for improving productivity in the footwear and other U.S. industries which are or will be at a competitive disadvantage.



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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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To the President of the Senate and the
Speaker of the House of Representatives

This report analyzes the economic decline of the U.S. nonrubber footwear industry. Once dominant in the U.S. market, the industry has lost much of its vitality because of continuing foreign competition. We are recommending Government actions to improve the productivity and increase the competitiveness of U.S. footwear manufacturers.

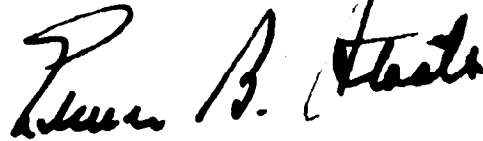
We undertook this study to (1) identify the causes of the footwear industry's economic decline and determine if the decline was related to low productivity and (2) ascertain what competitive advantages foreign manufacturers had and how the Federal Government could help U.S. manufacturers improve productivity. In addition, the study was prompted by growing congressional concern over the impact of slow productivity growth on the health of the U.S. economy.

For the most part the solutions to the industry's problems are beyond any single company's capability. Consequently, we are recommending that the Secretary of Commerce strengthen the footwear industry revitalization program by directing that additional initiatives be undertaken to foster joint efforts by industry, the Government, universities, and labor to improve the productivity and to enhance the long-term viability of the industry.

This report should also be useful to the Congress, the executive branch, and manufacturers in identifying policy alternatives relating to national manufacturing productivity, technology diffusion, and the competitiveness of the United States in world markets. It is especially important to recognize that many of the problems facing small- and medium-sized domestic footwear manufacturers may be typical of those facing small- and medium-sized firms in other U.S. industries. In aggregate, these firms provide the bulk of U.S. employment and substantially affect U.S. productivity growth.

We are sending copies of this report to the Director, Office of Management and Budget; the Special Representative for Trade Negotiations; the Secretary, U.S. International Trade Commission; the Secretaries of Commerce and Labor; and other individuals and organizations in the public and private

sectors. In addition, we are sending copies to the Senate Committee on Commerce, Science and Transportation; the Senate Committee on Banking, Housing, and Urban Affairs; the House Committee on Science and Technology; the House Committee on Banking, Finance, and Urban Affairs; and other cognizant committees.

A handwritten signature in black ink, appearing to read "Robert B. Stastik". The signature is written in a cursive style with a large initial "R".

Comptroller General
of the United States

D I G E S T

GAO, in its report entitled "Manufacturing Technology--A Changing Challenge to Improved Productivity" (LCD-75-436, June 3, 1976), pointed out that foreign productivity growth rates exceeded those of the United States. Moreover, there was a concern that in certain industries this might have severe consequences. (See p. 2.) Domestic manufacturers in industries such as steel, textiles, television, and shoes are already experiencing severe competition from imports. (See p. 1.) This report focuses on the nonrubber footwear (shoe) industry and how it has been affected by changing world conditions.

Increased foreign competition and insufficient capital and technology have led to the economic decline of the U.S. footwear industry. From 1968 to 1978, domestic shoe production dropped 37 percent, imports rose 106 percent, and almost 76,000 people lost their jobs. In addition, from 1967 to 1977 the number of manufacturing firms fell by almost one-half. Clearly changes are needed or the manufacturing base will further erode. (See ch. 2.)

Domestic manufacturers must now devise strategies to compete effectively with imports to prevent further deterioration of their market position and to raise their productivity growth rate. To effectively compete, it will be especially important for small and medium-sized manufacturers to enhance their manufacturing methods and acquire a better understanding of domestic and international markets. (See pp. 5-6.)

In the long run, automation may offer an opportunity for domestic manufacturers to increase their productivity and gain a competitive advantage over foreign producers. Given the potential benefits of group technology, computer-aided design and manufacturing,

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and other forms of automation (some of which are in a developmental stage) and the certainty of an increasingly competitive worldwide footwear industry, U.S. producers need to consider technologies available both from traditional and nontraditional suppliers. (See ch. 3.)

To this end, mechanisms must be cooperatively developed by the Government, industry, labor, and universities which can bring about the use of sufficient productivity-enhancing technologies to sustain the viability of the industry. To do so requires increased emphasis on the two key elements which directly affect industrial productivity growth--capital and technology. (See ch. 3.)

The Government can help the footwear industry address its problems, and the approach for providing this assistance can set the stage for working with industries with similar characteristics which are or will be at a competitive disadvantage. However, most Government assistance has been reactive (after the fact) and has been perhaps rightly characterized as "burial insurance." For example, in many cases trade adjustment assistance programs have not been effective in helping workers, firms, and communities adjust to import competition. Orderly marketing agreements were negotiated with Taiwan and Korea to reduce shipments from these two major exporters and give the industry a "breathing space" to revitalize itself. However, according to officials of the American Footwear Industries Association, no effective action has been taken to stem the rise in exports to the United States from other countries. (See ch. 4.)

Absent from Government initiatives have been proactive mechanisms, such as effective early warning systems, to notify footwear manufacturers and producers in other U.S. industries of impending foreign competition for specific domestic market segments.

On a positive note, the Government has initiated the \$56.3 million Footwear Industry Revitalization Program. The Program's technology component and its export promotion

program are particularly important in helping U.S. manufacturers improve their productivity and competitive position. However, the program is scheduled to expire in July 1980.

If the revitalization program is continued, it must be strengthened substantially to have enough impact on the industry's productivity growth to create a competitive advantage for U.S. manufacturers. In this regard, it is especially important to emphasize technology improvement by encouraging development, diffusion, and acquisition of productivity-enhancing technologies.

Finally, continued development of the export promotion program should also be emphasized. Since most domestic manufacturers have not been export oriented, a program to develop potential export markets and make them attractive to U.S. firms appears to be an innovative way of assisting the industry. A stronger Government effort to improve this industry's productivity growth could dissipate pressure for increased protectionism, reduce the future cost of trade adjustment assistance, improve the position of U.S. footwear manufacturers in international trade, and enhance the industry's prospects for long term survival. (See p. 53.)

RECOMMENDATIONS

For the most part, the solutions to the footwear industry's problems are beyond any single company's capability. Consequently, GAO recommends that the Secretary of Commerce strengthen the Footwear Industry Revitalization Program by directing that additional initiatives be undertaken to foster joint efforts by industry, the Government, universities, and labor to improve the productivity and to enhance the long term viability of the industry. These initiatives as a minimum should address:

--Economic and technical uses of both traditional and nontraditional process technologies, especially group technology, computer-aided design and manufacturing, and other forms of automation.

- Innovative methods to help footwear firms acquire new technologies, such as joint ventures among footwear manufacturers and suppliers and firms from other U.S. industries.
- Mechanisms, such as a permanent footwear center, to rapidly diffuse knowledge about new technologies which are deemed economically and technically feasible.

GAO also recommends that the Secretary, in cooperation with the Secretary of Labor, establish a neutral, nonadversary forum (similar to that provided by the National Center for Productivity and Quality of Working Life) to bring together diverse public and private interests to identify alternatives for enhancing industrial productivity growth.

Since this Nation's success in satisfactorily solving the footwear industry's problems can set the stage for working with other U.S. industries which are now or will be at a competitive disadvantage, additional Government efforts to focus public and private interests on the footwear industry's problems would be a desirable and an instructive first initiative.

AGENCY COMMENTS

In general, the Department of Commerce commented favorably on this report. However, the Department did not feel that GAO had recognized sufficiently the strong and productive working relationship now existing between Government, industry, and labor in the area of nonrubber footwear trade and program policies. GAO agreed with many of the Department's comments and incorporated them to provide a broader perspective on the industry's problems and to more fully recognize the Government/industry relationship. Rather than evaluate the effectiveness of this relationship, GAO's primary objective was to suggest additional steps the Federal Government could take to improve the productivity and competitiveness of U.S. footwear manufacturers. The Department's comments are included in full as appendix IV.

GAO also received comments from some private organizations representing various segments of the domestic footwear industry. Although some comments were negative, many supported GAO's conclusions. The comments reflected the diversity of opinions held by manufacturers, suppliers, and retailers regarding the economic outlook for their industry. All written comments which raised substantive questions regarding GAO's conclusions on the nature of the industry's problems are included in appendix V.



C o n t e n t s

		<u>Page</u>
DIGEST		i
CHAPTER		
1	INTRODUCTION	1
	Why the study was made	1
	Overview of the industry	2
	Industry composition	3
	Firm size and market impact	4
	Scope of review	6
2	U.S. FOOTWEAR--A DECLINING INDUSTRY	7
	Domestic shoe consumption has decreased	7
	Consumption of imported shoes has increased	9
	Import sources and domestic market penetration	9
	Why have imports been so successful?	12
	Low labor rates have aided foreign competition	12
	Fashion, quality, and availability of high-priced foreign shoes	13
	Foreign government assistance has been important	14
	Slow domestic productivity growth contributed to the vulnerability of the industry	15
	Adverse impacts on the industry	15
	Number of firms has decreased	17
	U.S. production has decreased	17
	Employment has declined	19
	Conclusions	23
3	OPPORTUNITIES FOR IMPROVING INDUSTRY PRODUCTIVITY THROUGH INCREASED CAPITAL AND TECHNOLOGY APPLICATIONS	24
	Capital	25
	Profits of small and medium-sized manufacturers have been low	25
	Commitments to R&D have been insufficient	26
	Expenditures for new and leased equipment have been low	26

		<u>Page</u>
	Technology	27
	The role of machinery suppliers	27
	Technological innovation among suppliers	29
	USM's plan for comprehensive automation of process technology	29
	International implications	33
	Prospects for new technologies	34
	Technological innovation among nontraditional suppliers	35
	Application of productivity-enhancing technologies to footwear manufacturing	40
	Conclusions	41
4	GOVERNMENT INVOLVEMENT	43
	Actions taken under the Trade Expansion Act of 1962 and Trade Act of 1974	44
	GAO reviews of adjustment assistance	46
	Department of Commerce Footwear Industry Revitalization Program	47
	Technology development, diffusion, and acquisition as a basis for attaining a competitive advantage	48
	Evaluation of the Footwear Industry Revitalization Program	50
	Impact of the trade monitoring system	51
	Tariff and trade regulations	52
	Conclusions	53
	Recommendations	54
	Agency comments	55
5	LESSONS LEARNED FROM THE FOOTWEAR INDUSTRY EXPERIENCE	56
	Conclusions	58
	Recommendations	59
APPENDIX		
I	Shoemaking	60
II	Group technology--definition and uses	63

APPENDIX

III	October 23, 1978, memorandum from the President to the heads of departments and agencies regarding the Productivity Improvement Program	68
IV	Department of Commerce comments on this report	70
V	Private sector comments on this report	78

ABBREVIATIONS

AFIA	American Footwear Industries Association
CAD	computer-aided design
CAM	computer-aided manufacturing
GAO	General Accounting Office
ITC	International Trade Commission
R&D	research and development
UK	United Kingdom
USM	United Shoe Machinery Corporation

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CHAPTER 1

INTRODUCTION

Because international and domestic markets have grown more competitive since World War II, there have been shifts in certain markets and industries throughout the world. This restructuring has benefited as well as hurt the U.S. economy. Benefits may include lower prices and greater varieties of products which result when competitive import pressures encourage greater productive efficiency and innovation. On the other hand, certain U.S. industries have lost domestic market shares to foreign producers, many of which are in countries where labor rates are lower than those in the United States. As a result, numerous U.S. companies and their employees are facing severe hardships. Their innovative capability is being severely challenged to stabilize current declines and regain lost market shares.

The shoe industry is one U.S. industry subject to severe pressure from foreign producers. The pressure emanates from both domestic producers' acquisitions of foreign manufactured shoes to augment their own product lines and the importation of shoes from foreign manufacturers by importers/retailers. The industry's high labor intensity, low skill requirements, and generic process technology make it especially attractive to many foreign countries.

Other import-sensitive domestic industries, such as color television, apparel, textiles, steel, and sugar, have also felt the competitive pressure resulting from changes in trade policies and shifts in advantages among countries. Identifying industry characteristics and economic conditions which permit foreign penetration of U.S. markets contributes to an assessment of what might be done to assist the above industries as well as those vulnerable to further competition. This report shows how one industry, nonrubber footwear (leather and vinyl products), has been affected by changing world conditions. We have attempted to identify some of the social, political, and economic factors contributing to the predicament the industry is in today.

WHY THE STUDY WAS MADE

This report was undertaken as part of our recent efforts to assess the Federal role in promoting productivity improvements in the private sector. Our first major report on private sector productivity, "Manufacturing Technology--A Changing Challenge to Improved Productivity" (LCD-75-436, June 3, 1976), pointed out that the United States was depleting its materials--oil for one--and was importing them at an increasing

rate. The report also indicated that Americans were buying increasing quantities and varieties of quality foreign products. Accompanying this trend was an alarming shrinkage of foreign markets traditionally dominated by U.S. export firms. Also, the U.S. rate of increase in manufacturing productivity was among the lowest in the world, and foreign competitors were as good as, if not better than, the United States in acquiring, developing, and diffusing manufacturing technology.

We undertook the footwear industry study to explore the effects of these trends on one American industry. Our objectives were to (1) identify the causes of the industry's economic decline and determine if the decline was related to low productivity and (2) ascertain what competitive advantages foreign manufacturers had and how the Federal Government could help U.S. footwear manufacturers improve their productivity.

In addition to furthering our role in promoting private sector productivity improvements, the study was prompted by growing congressional concern over the impact of slow productivity growth on the health of the U.S. economy. In recent years, this concern has resulted in efforts to stimulate productivity growth by fostering technological innovation and diffusion of productivity-enhancing technologies among U.S. industries. These efforts have focused on industries such as steel, textiles, and footwear, where import penetration and labor displacement have accompanied productivity decline.

OVERVIEW OF THE INDUSTRY

On the average in the United States almost two pairs of shoes are produced each year for every man, woman, and child; in sizes, widths, and shapes to fit every foot; at prices to fit every purse; in constructions and materials to fit every purpose; and in styles to fit every occasion.

Because of this diversity, the making of shoes differs from the making of many other consumer items. For example, while shirts, automobiles, and many other items are mass-produced in identical sizes, shapes, colors, and materials, less than 1 percent of the yearly production of the average shoe factory is identical. Machines are usually required in all stages of the manufacturing process, but many operations are manually performed, making the shoe industry highly labor intensive. (See figure 1.) In fact, depending on type of construction and complexity of style, shoemaking can involve between 50 and 250 operations. Although certain types of machines and factory layouts may vary, the methods employed are basically the same the world over. (For a detailed description of shoemaking, see App. I.) In other words, no one

country appears to have a significant technological advantage over the others. Consequently, manufacturers having the lowest labor and material costs--assuming productivity remains essentially the same--enjoy a competitive advantage. Material costs are about the same for all countries although slightly higher in the United States. Therefore, it is primarily the labor cost advantage and our relatively free trade policy that allow manufacturers in low wage countries to penetrate the U.S. footwear market.

Figure 1



(Courtesy of the U.S. Shoe Corporation.)

The labor intensity of the footwear production process is evident in the photograph shown above of a fitting room in a modern shoe factory, where various parts of the shoe upper are stitched together.

Industry composition

The U.S. footwear manufacturing industry, composed of about 340 companies, is a diverse industry that produces slippers and athletic footwear and work, men's, women's, and children's shoes. Manufacturing can be further categorized by function. For example, women's footwear may be classified by various product groups, such as boots, casuals, or sport types.

Manufacturers may compete within one or several types of footwear markets. However, because of the diversity of production, a producer must develop separate distribution channels and different marketing strategies to successfully compete in each market. Therefore, firms manufacturing several types of footwear must have the resources necessary to maintain and support growth in structurally dissimilar retail markets.

The structural composition of the industry comprises more than just the manufacturing segment. Component, material, and equipment suppliers as well as retailers play a vital role. Component suppliers, for example, provide manufacturers with dies for cutting leather, molds for making nonleather shoes, and lasts for stretching leather into final form. They supply heels and materials. Equipment suppliers provide the necessary machines for putting shoes together. Material suppliers, such as tanneries, provide leather, vinyl, and other materials in bulk or cut to size for final assembly. Many of these firms sell to both domestic and foreign manufacturers.

Retailers deal directly with consumers, responding to shifts in desires for new styles and prices. To meet these desires, retailers select their goods from a worldwide market. This approach, they believe, is the best way to satisfy demand. They prefer to buy domestically, but if style, quantity, price, and profit or a combination of these factors is not suitable, they make their selections from worldwide offerings of shoe manufacturers. As a result, retailers and those manufacturers that have expanded into retailing have increasingly acquired greater influence over domestic price and fashion trends.

Firm size and market impact

For analytical purposes the 340 U.S. footwear companies may be separated into 2 broad segments: (1) small and medium-sized firms operating 1 or 2 shoe factories and producing fewer than 4 million pairs per year and (2) large firms operating many factories and retail outlets and producing more than 4 million pairs per year. Some of these large firms also own factories overseas and operate their own tanneries and chemical plants.

The separation of large manufacturers from the rest of the industry has been fostered by an increasing concentration of production. The four largest manufacturers continually account for almost 30 percent of the total value of domestic shipments. In 1975 the top 21 manufacturers accounted for 50 percent of total U.S. output, up from 37 percent in 1969. (See pp. 17-18.)

Large firms dominate the market by using longer production runs and enjoying benefits of economies of scale. Furthermore, many have reduced the adverse effects of import competition. For example, rather than compete "head-on" with high-priced European or low-priced Asian imports, many large manufacturers that have expanded into retailing have purchased high- and low-priced imports to round out their own product lines. This has allowed them to concentrate their own manufacturing in the medium-price range, where style and import competition have not been overly important.

Some manufacturing firms with overseas operations have reduced the risk of initiating long-term domestic production runs on a new shoe style by implementing a "fashion leader strategy." This strategy capitalizes on the ability of their overseas factories to initiate fashion changes through short production runs. The products are then introduced to the U.S. market through their retail outlets in the United States. If the style becomes popular, the necessary dies are obtained and they begin long production runs in their U.S. plants. Additional advantages enjoyed by large manufacturers include access to wider markets, diversification into other product lines, and acquisition of new technology through in-house research and development. These advantages, combined with other factors, have provided large manufacturers an edge in adjusting to import competition.

Despite the growing dominance of a few larger firms, the footwear industry has always been characterized by a high rate of turnover. One reason for this is that to enter the manufacturing end of the industry requires very little capital. For example, as one study of the industry explained:

"Very wide-spread--and once obligatory--leasing of necessary machinery has tended to put the small firm on a par with the larger corporation and permitted easy entry with a minimum of capital. Small units traditionally also operated in rented premises, engaged in little or no advertizing, promotions or product research or development activities, and depended upon commission salesmen for sales efforts."

Small and medium-sized firms in this industry tend to operate under the conditions of monopolistic competition, which means they do not compete solely on the basis of price. Instead, as is true with a fashion-oriented product, each sells a product slightly differentiated from that of every other, emphasizing brand names, styles, and a wide variety of sizes and traditional production processes. Although this has enabled some of these companies to survive by carving out special market niches for themselves, it has limited the

manufacturing benefits which would accrue through economies of scale by forcing many of these firms to absorb the cost disadvantages of shorter production runs. These disadvantages have contributed to an accelerated decline in the number of small and medium-sized firms. Thus, while small and medium-sized firms have entered an industry increasingly dominated by large firms, their chances of long term survival have probably been less than those of the large firms.

SCOPE OF REVIEW

We visited some domestic manufacturers, trade groups, retailers, and equipment suppliers and talked with numerous Government representatives. We also visited similar organizations in the United Kingdom, Germany, Canada, Italy, and Korea. In addition, we analyzed shoe industry reports and articles. Finally, we discussed our study with Commerce officials who administer the Footwear Industry Revitalization Program--a \$56.3 million, 3-year program of assistance for the import-injured segment of the nonrubber footwear industry.

We focused on reasons for the decline of the industry and its impact on production, firms, and workers (ch. 2), prospects for improving productivity through increased use of capital and technology (ch. 3), and Government actions which affected the industry (ch. 4). Chapter 5 summarizes the history of the industry and proposes additional Government action to strengthen its position and that of similarly troubled industries.

CHAPTER 2

U.S. FOOTWEAR--A DECLINING INDUSTRY

The U.S. footwear industry, one of America's oldest manufacturing industries, has lost much of its vitality since the mid-1960s. Before then U.S. manufacturers supplied nearly all the shoes for our domestic market; since that time, however, the number of manufacturers has dropped significantly, production has fallen off, and employment has decreased. While the reasons for the decline are not as easily discernable as the adverse effects noted above, there are indications which do explain the industry's overall decline. This chapter discusses the decline and the reasons for it and demonstrates its adverse effects.

DOMESTIC SHOE CONSUMPTION HAS DECREASED

In any industrial setting, the success of any one firm or the industry as a whole depends highly on consumer demand. As demand grows, the industry has an opportunity to expand to meet consumer needs; as demand falls, the industry must curtail production to avoid excess stock. Surprisingly, overall domestic shoe consumption (an indicator of demand) has not increased over time, despite (1) a growing U.S. population and (2) footwear price increases which have been lower than average for all other commodities since 1968. Instead, annual consumption has decreased since 1968. In that year domestic shoe consumption was a reported 821.5 million pairs; in 1978 the figure was 769.9 million, a 6-percent reduction from 1968. During this period per capita shoe consumption declined from 4.1 to 3.5. The following table contrasts the 1968 and 1978 domestic consumption levels by shoe category.

Table 1

Nonrubber Footwear by Product Category:

U.S. Apparent Consumption (note a)

<u>Shoe category</u>	<u>Number of pairs</u>		<u>Percentage change in consumption</u>
	<u>1968</u>	<u>1978</u>	
	(000,000 omitted)		
Women's and misses'	450	385	- 14
Men's, youths', and boys' (except work)	145	163	+ 12
Children's and infants'	74	59	- 20
Athletic	10	60	+ 500
Other (note b)	<u>143</u>	<u>103</u>	- 28
Total	<u>822</u>	<u>770</u>	- 6

a/Apparent consumption is the total of domestic production and imports less U.S. exports. Exports constitute less than 2 percent of domestic production.

b/"Other" includes primarily slippers and men's workshoes.

Source: International Trade Commission (ITC), Department of Commerce, and American Footwear Industries Association (AFIA).

As can be seen from the table, the consumption level varies by shoe category, thereby affecting specific footwear firms and markets in different ways. For example, while women's and misses' shoe consumption dropped 14 percent over the period, men's, youths', and boys' consumption increased by 12 percent. There is no agreement on an explanation for these variances or the overall decline in domestic consumption. According to one shoe industry official, a partial explanation for the decline is the increased use of casual shoes for various activities, thereby reducing the need for more formal footwear.

Another explanation, offered by Warren Farb in his Congressional Research Service report, "The U.S. Shoe Industry: The Economic Impact of Imports," suggests a saturation point for shoes, where increasing income or lowering prices may not encourage people to buy more shoes. In any event, the industry must supply fewer shoes for a reduced demand.

CONSUMPTION OF IMPORTED SHOES HAS INCREASED

Within the past two decades, the U.S. footwear market has changed from one composed mainly of U.S.-produced shoes to one where imported shoes have become increasingly prevalent. Before the 1950s international trade in footwear was minimal, as manufacturers in most countries produced shoes for their own markets. In the mid-1950s domestic manufacturers produced 99 percent of all shoes sold in the United States.

Subsequently, however, large-scale international competition became possible when export-oriented shoe-manufacturing industries emerged in various low wage European and Far Eastern countries. The United States, having the largest market in the world, characterized by relatively low import duties, became an obvious candidate for imports. As a result, import penetration increased and by 1978 imports (in pairs) had captured 49 percent of the domestic market. In the first quarter of 1979, imports captured 52 percent of the domestic market.

Import growth is measured in two ways, by pairs and dollars. The import share of the U.S. domestic market, measured in pairs, increased from 4 percent in 1960 to 12 percent in 1965, to 26 percent in 1969, and to 49 percent in 1978. The import share also rose steadily when measured in dollars--from 2 percent in 1960 to 5 percent in 1965, to 13 percent in 1969, and to 36 percent in 1978. In spite of this steady growth, imports were not considered a competitive threat to the U.S. shoe-manufacturing industry until the end of 1960s, when domestic production and employment started declining. Chart 1 demonstrates the increased import penetration in the U.S. market.

Import sources and domestic market penetration

The proliferation of foreign countries exporting footwear to the United States has been tremendous. Currently there are over 70. As chart 2 indicates, Taiwan, Korea, Italy, Spain, and Brazil have been the leading suppliers, providing over 86 percent of the imports for 1977. This figure dropped to 74 percent in 1978. However, imports from Hong Kong increased dramatically and more than made up for this decline.

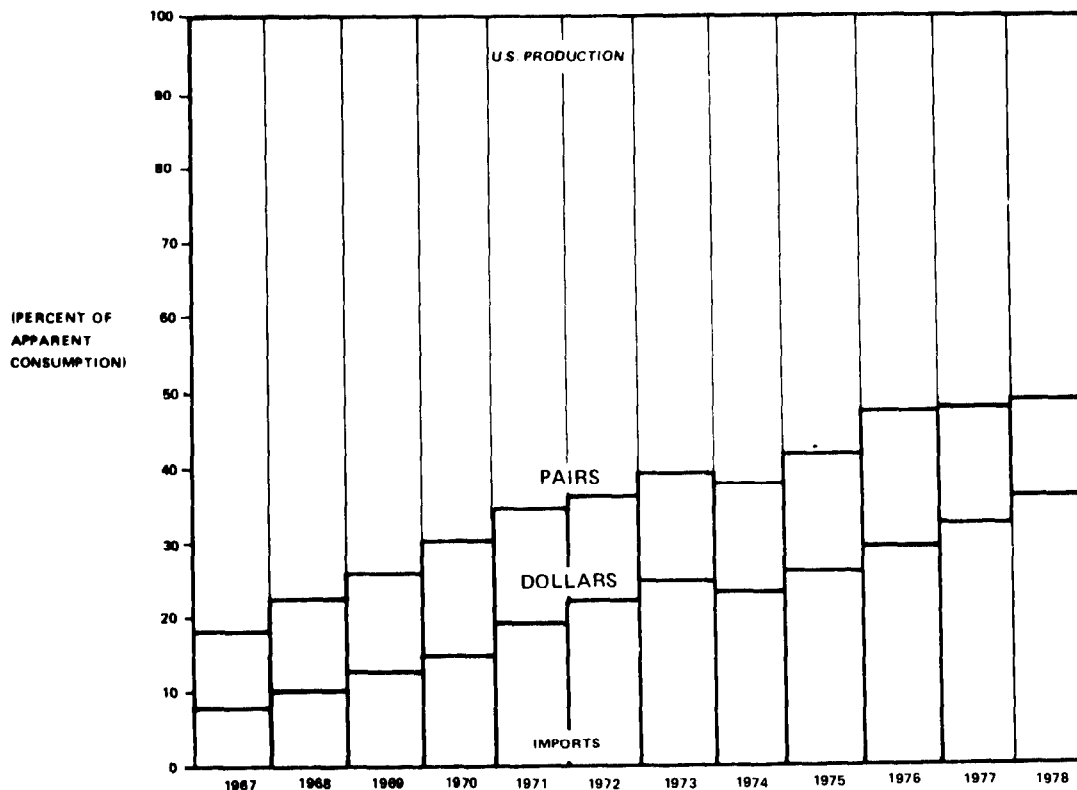
In the past, other countries have been major suppliers. For example, in the late 1960s Japan dominated the low-priced U.S. shoe market by providing mass-produced vinyl footwear. However, growing income levels and technological ability drew

Japan into domestic industries requiring greater capital investments. By the 1970s Japan had moved much of its manufacturing to Taiwan and other Far Eastern countries which had lower wage rates. In 1972 Taiwan became the largest exporter of footwear to the United States and has remained so; Korea was the second largest exporter in 1977. These Far East producers continue to export low-priced shoes to the United States, often those with vinyl uppers, while Italy, Spain, and Brazil export mainly the more expensive leather footwear.

In essence, the U.S. industry is challenged by two groups of exporting countries. With the high- and low-price ends of the market taken over by foreign producers, the only substantial market left to domestic producers was the mid-price range. But the natural upgrading that occurs continually pushes the low-price countries into higher price brackets, thereby competing with mid-price domestic producers. The downgrading into cheaper footwear from Italy, combined with upgrading from other countries, further pressures domestic manufacturers.

CHART 1

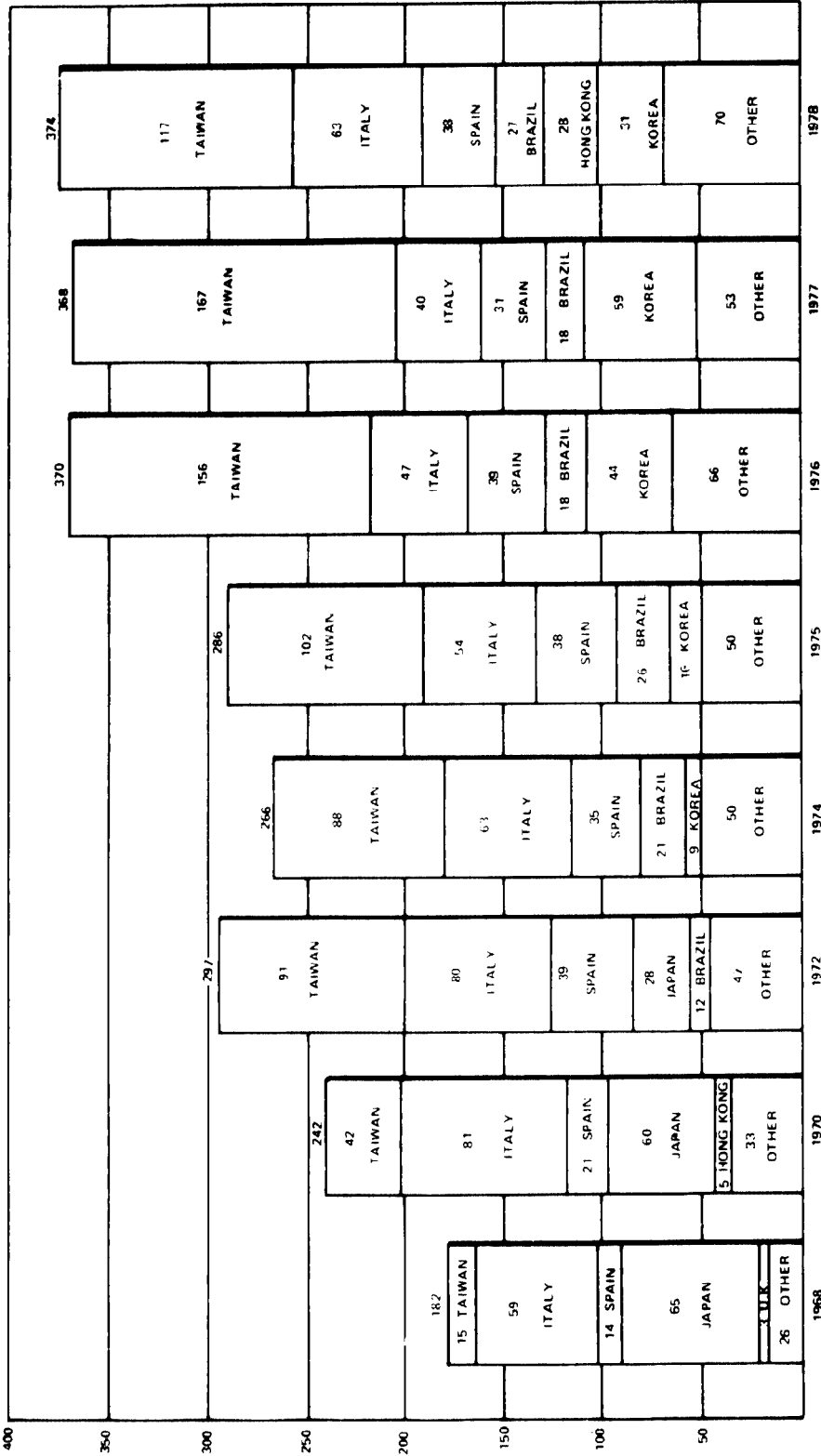
PAIRS AND DOLLARS OF U.S. PRODUCTION AND IMPORTS OF NONRUBBER FOOTWEAR AS PERCENTAGE OF TOTAL APPARENT CONSUMPTION 1967-1977



SOURCE : INTERNATIONAL TRADE COMMISSION, DEPARTMENT OF COMMERCE.
 AMERICAN FOOTWEAR INDUSTRIES ASSOCIATION

MILLIONS OF
PAIRS

CHART 2
U.S. NONRUBBER FOOTWEAR IMPORTS. TOP FIVE COUNTRIES



NOTE "OTHER" INCLUDES OVER 15 COUNTRIES IN 1968. A RECENT ESTIMATE SUGGESTS OVER 70 COUNTRIES SUPPLY FOOTWEAR TO THE U.S.

SOURCE DEPARTMENT OF COMMERCE, AMERICAN FOOTWEAR INDUSTRIES ASSOCIATION

WHY HAVE IMPORTS BEEN SO SUCCESSFUL?

The reasons for the rapid influx of imports are many, often interrelated, and complex. Since they often depend on the shoe type and market segment under consideration, generalizations are sometimes dangerous and misleading. Nonetheless, some of the more important factors are production costs, profit margins, product variety, product quality, Government assistance, and productivity rates.

Low labor rates have aided foreign competition

Although total factor production cost data would be the best indicator of foreign versus domestic competitive advantage, we could not obtain comparable data on all factors, most importantly, labor productivity rates. ^{1/} As a result, we analyzed foreign versus domestic labor costs, since labor cost data was comparable across countries and represents the factor of production which appears to vary most. (Generally, material costs do not vary significantly across countries.) As the following table indicates, foreign countries have had and still have a distinct advantage because of lower labor costs.

^{1/}The competitive position of the U.S. and foreign footwear industries could be most effectively clarified in terms of comparative productivity and unit cost levels. (Melding staff-hour productivity with hourly cost yields unit labor cost.) However, we could not obtain reliable information. Although the Bureau of Labor Statistics completed a study on international comparisons of productivity in the non-rubber footwear industry, the results were not considered sufficiently reliable for publication and could not be cited.

Table 2

Estimated Hourly Compensation for Footwear

Workers in Selected Countries (note a)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
United States	\$2.86	\$3.00	\$3.11	\$3.27	\$3.53	\$3.75	\$4.03	\$4.31
Brazil	.36	.38	.43	.51	.61	.72	.80	.88
Italy	1.15	1.53	1.78	2.22	2.51	3.30	3.19	3.83
Spain	.49	.54	.68	.88	1.09	1.36	1.71	1.73
Korea	N/A	.17	.17	.22	.28	.33	.44	.49
Taiwan	N/A	N/A	N/A	.24	.35	.38	.48	.58

a/Compensation includes wages plus fringe benefits.

Source: Department of Labor, Bureau of Labor Statistics.

Lower labor costs in Taiwan and Korea have been a driving force behind the tremendous growth rate of imports in the low-price footwear market. Their low production cost provided retailers a greater profit margin relative to low-priced, U.S.-made footwear. As demand for low-priced footwear rose, the product was distributed increasingly through discount stores, supermarkets, and other new outlets emphasizing high-volume/ low-priced merchandise. As low-priced shoes grew even more popular, U.S. retailers began to look to foreign sources to supply larger orders of shoes at lower prices.

The ability of Far Eastern producers to provide an acceptable product at a low price with a good profit margin led to a rapid increase in demand for their shoes by both consumers and retailers. In effect, a new, lower price range was added to the U.S. shoe market, and for domestic manufacturers to be competitive, a major decrease in production costs was required. However, U.S. manufacturers, even with the economies of scale of long production runs and lower shipping and inventory costs, could not overcome the great disparity of labor rates to produce shoes of comparable prices and in the large quantities required by retailers.

Fashion, quality, and availability of high-priced foreign shoes

Labor cost differences were not the only reason for the growth of imports of high-priced shoes. Fashion, quality, and availability also appear to be important factors.

In the 1960s, domestic manufacturers were accustomed to producing shoes with predictable style changes and apparently did not find it attractive to make the type and variety of high-priced fashionable shoes being provided by foreign manufacturers. As fashion awareness in apparel and footwear increased, consumers demanded more styles and more frequent changes. According to footwear retailers, domestic manufacturers were unwilling to forgo the economies of long production runs and satisfy this demand. Domestic manufacturers also did not want to sell their total production to one purchaser, for that purchaser can and does change sources for various reasons.

An official of the National Footwear Retailers Association said that some manufacturers had not effectively anticipated demand for fashion footwear, which, from the standpoint of style and quality, had placed them at a disadvantage when competing with imports. For whatever reason perceived, domestic retailers found U.S. manufacturers not responsive enough to new consumer preferences and simply sought out new (and frequently foreign) sources to furnish shoes demanded by consumers.

During this same period, Italian and Spanish manufacturers began to capitalize upon their low labor rates, tradition of leather craftsmanship, and proximity to fashion centers. Producers in Italy and Spain, and later Brazil, offered shoes that consumers wanted, while most U.S. producers did not offer shoes of comparable price, style, and quality. Further, they could produce small batches, change styles quickly, and reduce manufacturing costs by doing a task by hand rather than by machine. The flexibility in a low volume, hand-oriented system is particularly well suited to a fashion-oriented market. According to U.S. retailers, the availability of attractive styles in the desired small quantities is the primary factor today for importing fashion-oriented footwear from Italy, Spain, and Brazil.

Foreign government assistance
has been important

Apart from the foreign industry's own efforts, foreign governments have played an important role in developing their footwear-exporting capabilities. Foreign governments, searching for ways to industrialize, have found the footwear industry attractive. It is labor intensive, requires low capital investment, and uses simple technology. Furthermore, footwear manufacturing provides needed employment for a low-skilled labor force and the opportunity to raise money overseas through exports. Consequently, the governments of many of

these foreign countries have supported the development of footwear industries. The types of assistance vary among countries. Examples of support follow.

- Preferential interest rates on loans.
- Tax exemptions.
- Cash bonuses for export sales.
- Credits granted to foreign purchasers.

Slow domestic productivity growth
contributed to the vulnerability
of the industry

Productivity in the shoe industry, as in most industries, is measured by employees' output per hour. Using this definition, U.S. footwear-manufacturing productivity grew at an average annual rate of 1 percent during 1950-75; during 1971-78, the rate was only 0.1 percent a year. As chart 3 indicates, this rate has been lower than the rate for all manufacturing; in fact, it has been the lowest among all manufacturing industries for which data was available.

This very slow growth is associated with labor intensive methods of production, which still require a worker to guide or manipulate the work at every stage. (Ch. 4 examines the difficulties of increasing productivity through technological change.) Although it is questionable that a higher rate would have prevented import penetration, it may well have reduced the tremendous success imports have experienced here to date.

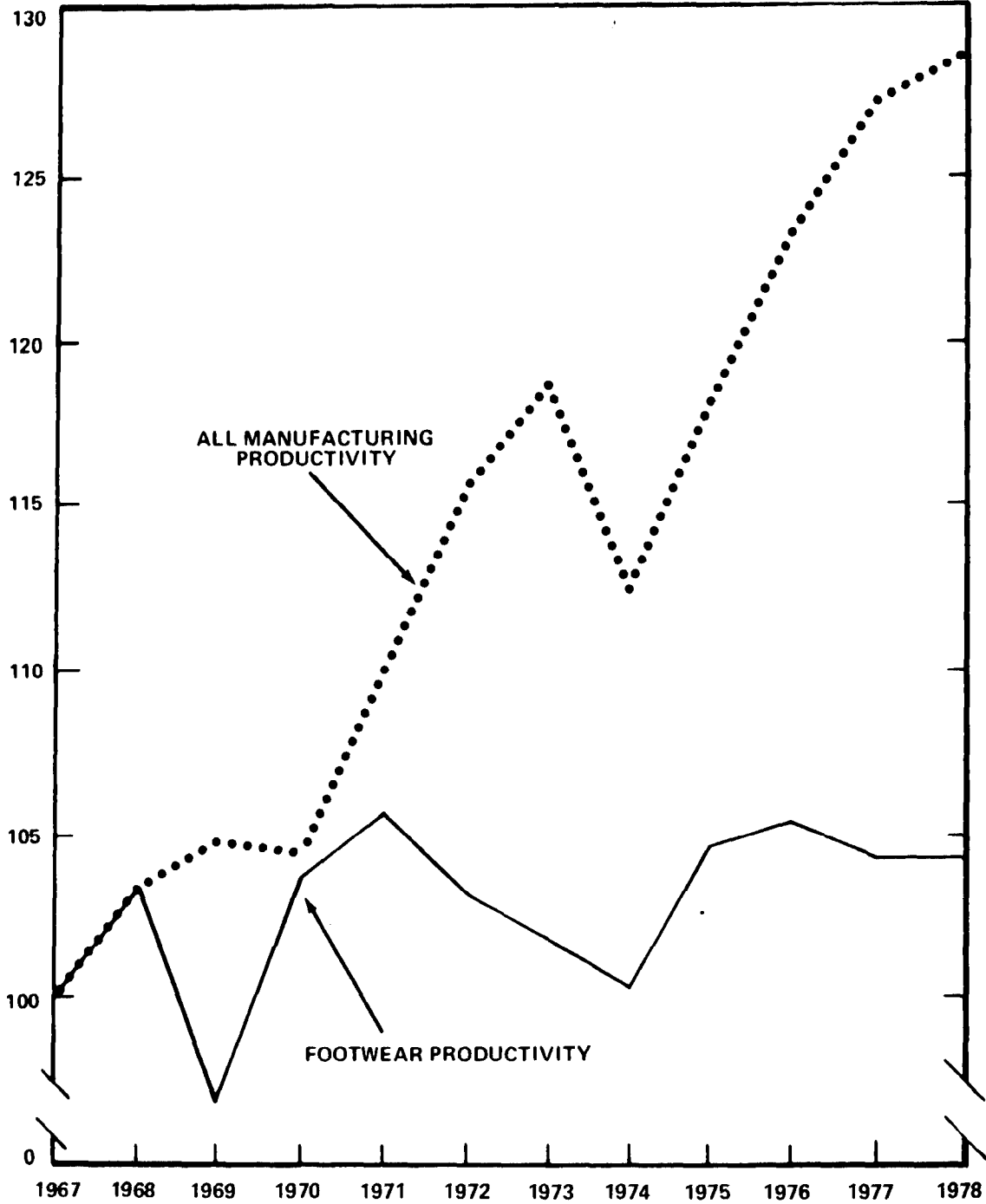
ADVERSE IMPACTS ON THE INDUSTRY

As previously described, a reduced domestic demand and a dramatic increase in footwear imports have forced domestic manufacturers to compete for a smaller share of a smaller domestic market. Unfortunately, the U.S. industry has been weakened by these market forces. For example, the number of manufacturers has fallen considerably, domestic production has dropped, and domestic employment has suffered. Even though the industry itself constitutes only a small portion of our manufacturing base, these impacts are especially important not only to those firms and people directly affected but also to U.S. industries which may face similar competition in the near term.

CHART 3

FOOTWEAR AND ALL MANUFACTURING
PRODUCTIVITY GROWTH , 1967-1976

INDEXED
OUTPUT PER EMPLOYEE-HOUR



SOURCE: DEPARTMENT OF LABOR , BUREAU OF LABOR STATISTICS

Number of firms has decreased

As described in our introductory chapter, the footwear industry has often been characterized as highly disaggregated; firm size varies from very small to large firms producing over 4 million pairs of shoes annually. In 1954 there were 970 domestic manufacturers; the overwhelming majority were small to medium sized (those producing fewer than 4 million pairs annually). Primarily because of the competitive pressure cited earlier, that number dropped to 341 by 1976 and has probably fallen even further.

As table 3 indicates, the largest firms were apparently better equipped to handle the pressure; on the other hand, the number of small and medium-sized firms decreased by over 300 during 1967-75. With the decrease in the number of existing firms, the total output of the industry became even more concentrated in the largest firms. For example, in 1967 the 16 largest producers accounted for 31 percent of domestic output, while in 1975 the top 21 producers accounted for 50 percent of domestic output. By 1976 the top 23 producers accounted for 56 percent of total U.S. output.

We found no conclusive evidence which explained how these large firms had increased their domestic output share from 31 to 56 percent, but financial data disclosed that some of the largest producers had acquired some small and medium-sized domestic manufacturers during the 1967-75 period. While small and medium-sized producers lost 19 percent of the domestic output share, total domestic output also decreased, thereby causing these firms, as a whole, to produce only half as many shoes in 1975 as in 1967. The net result confirms a growing trend in the industry to concentrate production in fewer firms.

U.S. production has decreased

Along with the decrease in the number of firms, U.S. production has fallen dramatically in the face of decreased consumption and increased imports. As depicted in table 4, U.S. production has decreased steadily every year (except 1976) from its all-time high of 642.4 million pairs in 1968 to 403.3 million in 1978, a 37-percent decline. The table further illustrates the adverse impact of the import and consumption factors on U.S. production. Whereas domestic production accounted for 78 percent of consumer demand in 1968, it provided only 51 percent in 1978. In the first quarter of 1979, domestic production provided only 48 percent of U.S. demand. Further, if past trends continue, imports probably will soon dominate the market.

Table 3
Concentration of U.S. Nonrubber-Footwear-Producing Firms,
Selected Years 1967-75

Size-of-output groups in pairs	1967		1969		1974		1975		Net change of 1975 over 1967	
	Number of firms	Percentage of total output	Number of firms	Percentage of total output	Number of firms	Percentage of total output	Number of firms	Percentage of total output	Number of firms	Percentage of total output
Small:										
Fewer than 200,000	226	2	192	2	139	2	129	2	- 97	0
200,000 - 499,999	170	10	146	8	105	8	92	7	- 78	- 3
500,000 - 999,999	121	14	113	14	65	10	71	12	- 50	- 2
Medium:										
1,000,000 -										
1,999,999	100	24	93	24	57	17	42	14	- 58	- 10
2,000,000 -										
3,999,999	42	19	32	15	22	13	23	15	- 19	- 4
Large:										
4,000,000 or more	16	31	21	37	21	50	21	50	+ 5	+19
Total	675	100	597	100	409	100	378	100	-297	-

Source: Compiled from data supplied by the Bureau of the Census.

Table 4

Nonrubber Footwear: U.S. Production, Imports,
Apparent Consumption, and Per Capita Consumption

	<u>U.S. production</u>	<u>Imports</u>	<u>Apparent consumption</u>	<u>Per capita consumption</u>
	----- (millions of pairs) -----			
1968	642.4	181.5	821.5	4.1
1969	577.0	202.2	776.9	3.8
1970	562.3	241.7	801.8	3.9
1971	535.8	268.6	802.3	3.9
1972	526.7	296.7	821.1	3.9
1973	490.0	307.5	793.9	3.8
1974	453.0	266.4	715.4	3.4
1975	413.1	286.5	695.0	3.3
1976	422.5	370.0	786.5	3.7
1977	406.0	368.1	768.7	3.5
1978	403.3	373.5	769.9	3.5

Source: ITC, Department of Commerce, and AFIA.

The impact on production for specific market segments has varied in its severity. Since 1968 production for all market segments of the industry--except athletic shoes--has declined. As table 5 indicates, the women's and misses' market has been hit the hardest, suffering a decline of 49 percent in U.S. production. The table further shows the adverse impact of import penetration and decreased consumption on the production factor in each market segment.

Employment has declined

As footwear firms have left the industry and domestic production has dropped rapidly, the footwear labor force has naturally been adversely affected. Overall, shoe manufacturing accounts for only a small fraction of the total U.S. labor force. Nevertheless, the decline in footwear employment may indicate what might occur in similarly vulnerable industries. The following table demonstrates the decline in employment. In 1966, the peak employment year for the industry, there were 240,000 workers--less than one-half of 1 percent of the total U.S. workforce. In 1968, employment stood at 233,400. By 1978, employment had declined to 157,800--about 34 percent lower than 1966 and about 32 percent lower than 1968. AFIA, the industry's principal trade organization representing shoe manufacturing, estimates that 94,000 more workers are also employed in sectors largely dependent on footwear production. These include tanning, lastmaking, manufacturing of component parts and machinery, and fashion designing.

Table 5

Nonrubber Footwear by Product Category:

U.S. Production, Imports, and Apparent Consumption

	<u>U.S.</u> <u>production</u>	<u>Imports</u>	<u>Apparent</u> <u>consumption</u>
	-----	-----	-----
	-----	(millions)	-----
1968:			
Women's and misses'	317	133	450
Men's, youths', and boys'	114	31	145
Children's and infants'	60	14	74
Athletic	8	2	10
Other (note a)	<u>143</u>	<u>2</u>	<u>143</u>
Total	<u>642</u>	<u>182</u>	<u>822</u>
1978:			
Women's and misses'	261	226	385
Men's, youths', and boys'	90	75	163
Children's and infants'	39	20	59
Athletic	18	44	60
Other (note a)	<u>95</u>	<u>9</u>	<u>103</u>
Total	<u>403</u>	<u>374</u>	<u>770</u>
Changes			
1968-78:	-----	(percent)	-----
Women's and misses'	-49	+70	-14
Men's, youths', and boys'	-21	+142	+12
Children's and infants'	-35	+43	-28
Athletic	+125	+2100	+500
Other (note a)	-34	+350	-28

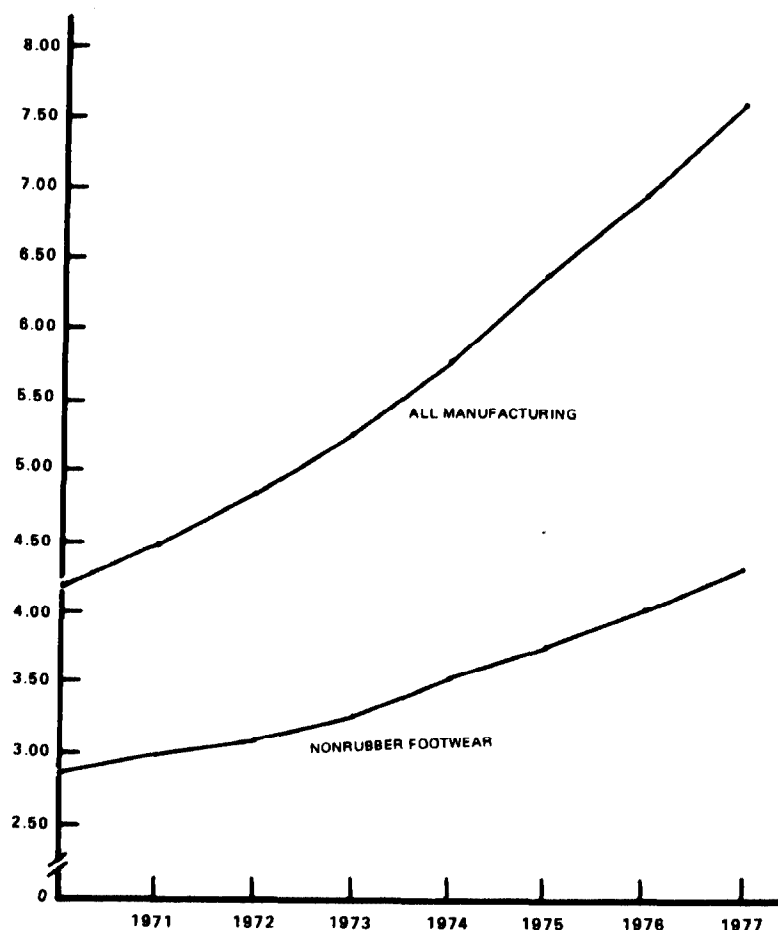
a/AFIA suggests changes in "other" may be due to classification changes of slippers. "Other" includes primarily slippers and men's workshoes.

Source: ITC, Department of Commerce, and AFIA.

The severity of the impact becomes apparent when one considers the following facts of shoe employment. Compensation in the manufacturing segment of the industry has always been very low. As chart 4 indicates, compensation has been and continues to be lower than that in all manufacturing, and the gap is widening. In 1977, for example, the average hourly compensation for footwear production workers was only \$4.31 compared with \$7.60 for their counterparts in other manufacturing industries. Furthermore, the industry's labor force consists of only 14 percent skilled workers compared with 20 percent in all manufacturing; has a high proportion of workers who are over 50 years old, are women, or are minority members; and has a lower educational level than that of manufacturing workers as a whole. Thus, many footwear employees are only marginally employable and have few alternative job opportunities.

CHART 4

NONRUBBER FOOTWEAR PRODUCTION AND ALL
MANUFACTURING--ESTIMATED HOURLY COMPENSATION, 1970-1977



SOURCE DEPARTMENT OF LABOR, BUREAU OF LABOR STATISTICS.

Individual States have also felt the impact of the declining industry. Although footwear is produced in 30 of the 50 States, over half the total U.S. employment is in eight principal States: Massachusetts, Maine, New Hampshire, New York, Pennsylvania, Missouri, Arkansas, and Tennessee. Except for Arkansas, footwear employment declined in these States between 1968 and 1978. States hurt most by the decline have been Massachusetts and New York, whose footwear employment has dropped 53 and 52 percent, respectively. The following table demonstrates the declining production and employment trends in these States during 1968-78.

Table 6

U.S. Employment and Production in Nonrubber Footwear
by Principal Producing States, 1978

<u>State</u>	<u>Production</u>		<u>Employment</u>		<u>Number of plants</u>	
	<u>1978</u> <u>(note a)</u> <u>(million</u> <u>pairs)</u>	<u>Percentage</u> <u>change</u> <u>1968-78</u>	<u>1978</u> <u>(thousands)</u>	<u>Percentage</u> <u>change</u> <u>1968-78</u>	<u>1978</u>	<u>Total</u> <u>difference</u> <u>1968-78</u>
Pa.	49.1	-4.23	14.9	-40.6	77	-46
Mo.	38.4	-32.0	16.9	-29.5	61	-30
N.Y.	36.0	-53.0	9.9	-51.7	88	-84
Mass.	34.5	-59.5	14.3	-52.8	77	-69
Tenn.	29.6	-27.6	12.9	-11.5	35	- 6
Maine	31.8	-45.5	17.4	-35.3	64	-18
N.H.	20.9	-55.0	9.2	-48.7	42	-29
Ark.	17.8	-16.0	6.7	+11.3	25	+ 0
Total for eight principal producing States:						
	<u>258.1</u>		<u>102.2</u>		<u>469</u>	
U.S. total:						
	403.3		157.8		700	

a/AFIA estimates. (1978 production by States was estimated on the basis of preliminary census figures.)

Source: Department of Commerce and AFIA.

CONCLUSIONS

The general decline of the footwear industry has been underway for more than a decade. Retailers have found it more and more attractive to import high-priced fashion and low-priced shoes. Lower cost labor and their lower overall purchase costs plus good profit margins have been the driving factors behind this trend. Additionally, quality, response, and style have further enhanced the attractiveness of high-priced imports. This, combined with a domestic decline in shoe consumption, has severely damaged our footwear manufacturing base.

Apparently U.S. manufacturers have not been equipped to handle these challenges. Production methods have remained relatively static as manufacturers continue to use a high labor content process. As a result, productivity growth has been very slow and has declined in recent years. The cost of doing business has been very high and has not been competitive with that in many foreign countries. Consequently, imports continue to grow as foreign sources follow the shifts in low labor rates from country to country. Moreover, there is little evidence to suggest that this pattern will abate.

As a result, the impacts have been many and severe. Many small and medium-sized firms have disappeared as production has declined and has become concentrated in the largest firms. Employment has declined about 30 percent over the last decade, a troublesome problem since the labor force is generally older, less skilled, and less educated than other manufacturing employees and thus less able to find other employment. Unless significant changes occur soon, the industry's outlook will not improve, and its manufacturing base will erode even further. To become more competitive, U.S. manufacturers must enhance their manufacturing methods and acquire a better understanding of the market forces within the industry. This will require a focus on both domestic and international markets.

CHAPTER 3

OPPORTUNITIES FOR IMPROVING

INDUSTRY PRODUCTIVITY THROUGH INCREASED

CAPITAL AND TECHNOLOGY APPLICATIONS

As noted in earlier chapters, the U.S. footwear industry has been characterized by a long history of low productivity growth. The reasons for this are complex and not altogether clear. However, we believe that the disaggregated industry structure, the dependence of manufacturers on a small group of machinery suppliers, and the low level of capital and technological applications with the resultant continued labor intensity of the manufacturing process are all causes. Although each is important, this chapter focuses on the two key ingredients where increased emphasis is necessary for sustained productivity growth--capital and technology.

Economic studies have shown that these ingredients account for about 66 percent of industrial productivity growth. One need only examine the tremendous contributions of computers, semiconductors, and petrochemicals to recognize the importance of capital and technology in creating significant benefits for the socioeconomic well-being of mature, as well as emerging, industrial nations. At the same time, insufficient application of either factor or both factors contributes to the decline or stagnation of industrial growth. Such appears to be the case for the manufacturing segment of the U.S. nonrubber footwear industry.

We believe there is ample evidence which suggests significant potential for adapting available technology to improve productivity in the footwear industry. However, this is not a new idea. For example, in what was probably the most comprehensive 1960s study of the potential for technological innovation in the industry, the Battelle Memorial Institute stated:

"Since World War II, the aerospace, electronics, and machine-tool industries have gone far beyond what one might have imagined 20 years ago in developing new electronic and electromechanical methods for automated manufacture of complex shapes in metal and other materials. Applications of some of this new technical capability to shoe manufacture could well permit economical automated shoe manufacture with little or no standardization of shoe shapes."

Stanley Jacks supported this viewpoint in his 1971 study of productivity issues in the domestic footwear industry, prepared for the National Commission on Productivity. He pointed out that there was widespread opinion that the overall technical environment was favorable to solving fundamental problems of automating footwear manufacturing.

Finally, in a 1978 survey of footwear manufacturing technologies for the U.S. Department of Commerce, the Massachusetts Institute of Technology concluded that for the industry to survive, technologies compensating high domestic labor rates must be developed and put into operation very soon. The report identified computer technologies which had opened a new horizon for economical and adaptive automation and which had applications for footwear design and footwear manufacturing. These and other studies were taken into account in developing this section.

CAPITAL

The success of any industry depends highly on the availability and wise use of capital. While the amount of capital available among footwear manufacturers to acquire new technologies cannot be accurately determined, comparisons of profitability and past expenditures in research and development (R&D) and new equipment do indicate that the commitment to productivity-enhancing equipment has not been strong.

Profits of small and medium-sized manufacturers have been low

Comparable profit data is not consistently reported over time for footwear manufacturers. That is, the most recent ITC data for 96 nonrubber footwear manufacturers shows their combined net operating profit to net sales was 9.2 percent in 1976 (ranging from 2.4 to 12 percent with the lower profits clearly accruing to small manufacturers). According to ITC, all U.S. manufacturing averaged 8.7 percent during this same year. In contrast, Footwear News, the leading trade publication, reports that the profits of 24 major footwear manufacturers in 1976 were only 3.53 percent. Data from Dun & Bradstreet, Inc., places the total footwear industry profit figure in the vicinity of 3 percent, again in terms of net operating profit to net sales.

The Almanac of Business and Industrial Financial Ratios shows that between 1967 and 1971 an average of 34 percent of the manufacturers had no profits. As these were generally better years than the mid- and late 1970s, when the import picture was bleak, perhaps the current profit position should

be weighted more on the low rather than the high side. Nevertheless, there are sufficient differences between available sources to render the data unsatisfactory for conclusive analysis. However, our discussions with representatives of small and medium-sized firms lead us to believe that their profits have been low. This, coupled with the uncertainty of their future existence, have precluded them from investing in either R&D or high-priced technologies.

Commitments to R&D have been insufficient

The footwear industry's total expenditures for R&D are equally difficult to obtain. But from what has been reported, manufacturer R&D expenditures have run well below 1 percent of sales. In contrast, the transportation, machining, and chemical industries have found it necessary to spend 3 percent and more to remain competitive in the world market. Considering that over 90 percent of the industry's firms are small or medium sized, only large firms appear to have the necessary resources to invest substantially in R&D, but even they seem reluctant to do so.

The industry, however, has not entirely been without investment in R&D. Although financial data is not available, it has been reported that machinery, chemical, and material suppliers have made R&D expenditures which have improved the manufacturing process and the final product. For example, in 1971 Stanley Jacks reported that from the turn of the century until the antitrust decree of 1953, the development of footwear technology was almost exclusively in the hands of the United Shoe Machinery Corporation (USM), the largest shoe machinery supplier. ^{1/} From 1930 to 1950, USM's research and development budget averaged \$2 million. However, USM and later other traditional suppliers failed to find mechanical alternatives to certain basic functions performed by labor in the various stages of shoe manufacturing and failed to develop the high-productivity systems of manufacture needed to keep U.S. manufacturers healthy and competitive.

Expenditures for new and leased equipment have been low

Although the footwear industry's expenditures for new equipment increased in current dollars from \$19.5 million in 1967 to a peak of \$29.2 million in 1972, they declined each year thereafter and in 1976 stood at \$26.5 million. From 1967 to 1976, these expenditures averaged only 1.4 percent

^{1/}See pp. 27-28 for an explanation of the antitrust decree of 1953.

of the value added, whereas similar expenditures from the remaining U.S. industries averaged over 7 percent. 1/ On face value the latter represents a 400 percent higher commitment to revitalize equipment inventories.

In addition to purchasing equipment outright, the industry makes significant payments for leasing equipment. A comparison of expenditures for new and leased equipment is provided in table 7.

Not only have expenditures for leased equipment averaged more than for purchase, but when both are taken together, the industry's total expenditures for equipment take on a slightly different picture. Instead of being 1.4 percent of the value added for purchase alone, they are 3.1 percent of the value added for total commitment to new equipment. Even so, this is still well below what other industries commit to their equipment inventory and hasn't been sufficient to increase overall productivity growth and prevent erosion of the domestic manufacturing base. The apparently insufficient commitment to revitalizing equipment inventories suggests that perhaps the necessary technology embodied in new equipment offerings was either lacking or too costly. 2/

TECHNOLOGY

The role of machinery suppliers

The availability of conventional process technology has been influenced by the historical structure of the machinery supplier industry. From the beginning of the century through 1954, USM was the predominant supplier of machinery and equipment to the shoe industry. (Although there were other firms, their share of the footwear machinery and equipment market was small.) Policies of USM included leasing of all shoe machinery (the manufacturer could not purchase these machines) and denial to shoe manufacturers of the right to use machines of other manufacturers in combination with USM machines.

1/"Valued added" is defined as the value of output less the cost of materials and purchased services.

2/This is a short-term advantage, since equipment rentals are expensed whereas equipment purchases are capitalized and depreciated over a much longer period. On the other hand, the sizes of the leased commitment to purchase are a long-term disincentive to equipment suppliers to replace existing leased equipment with newer technology.

Table 7

Comparison of Expenditures for New Equipment
and Leased Equipment

	<u>New</u> <u>equipment</u>	<u>Leased</u> <u>equipment</u>	<u>Total</u>
	------(millions)-----		
1967	\$19.5	\$25.3	\$44.8
1968	30.9	29.8	60.7
1969	22.0	32.3	54.3
1970	20.8	29.5	50.3
1971	23.6	29.6	53.2
1972	29.2	27.9	57.1
1973	28.1	31.8	59.9
1974	28.6	31.8	60.4
1975	27.4	29.5	56.9
1976	26.5	28.9	55.4
1977	<u>a/</u> 29.3	(b)	(b)
1978	<u>a/</u> 35.1	(b)	(b)
Average (1967-76)	\$25.7	\$29.6	\$55.3

a/ITC's Second Annual Report issued in May 1979.

b/Not available.

Source: Department of Commerce.

According to Battelle Memorial Institute, to use new machines, manufacturers would have had to stop using their USM machines for which USM was then receiving lease income. USM would have lost money from development of new machines unless the income from the new machines had been high enough to offset development costs plus the lease income from the machines which would have been replaced. In view of the high costs associated with the technical problems in new machine development, this was unlikely. Consequently, USM had little incentive to develop radically new shoe machines which could revolutionize shoe manufacturing. USM's leasing policies and enforcement of lease restrictions also froze out potential competitors. This further inhibited the growth of productivity-enhancing technologies.

In 1947 the Department of Justice initiated antitrust action against USM. In 1953 a Federal district court ruled against USM. The Supreme Court affirmed the 1954 ruling which

forced revision of some of USM's policies. The initial ruling or decree issued by the district court in 1953 remained in effect until 1969 when it was modified by means of a consent decree (after substantial litigation) which will expire in 1981. The final result of the antitrust case has been to force USM to provide its equipment under more favorable terms and to concentrate on new areas of business outside the shoe industry. Although manufacturers now purchase machinery from European producers and specialized domestic suppliers, USM remains a major supplier of shoe machinery.

Technological innovation among suppliers

Since the early 1970s new technologies have begun to flow from both traditional and nontraditional suppliers. A summary of their cost and impact is shown in table 8.

As table 8 indicates, labor requirements could be reduced through using most of the listed technologies. However, these new technologies clearly are not well diffused. For example, computer-controlled laser cutting is used by about 6 or 7 shoe companies out of 360 and by several suppliers. Similarly, the other technological advances shown (except for unit bottoms) have not been widely adopted. Increased diffusion of these technologies and additional technical improvements could increase productivity. (See figure 2.) It is questionable, however, that such a piecemeal approach would be able to increase productivity to the point where the domestic industry could effectively compete with imports from low wage countries.

USM's plan for comprehensive automation of process technology

In 1970 USM introduced a "master plan" for comprehensive automation of footwear production. USM's plan recommended that manufacturers adopt a "systems approach applied on a plant-wide scale." In effect, the company maintained that exponential growth in productivity could be achieved only through investment in a total package which included basic planning, raw materials, materials handling, controls, and machinery. The plan provided a course of action for domestic manufacturers faced with import competition from low wage foreign countries. It was based on the proposition that total automation of footwear manufacturing would reduce the labor content of the finished shoe to an insignificant amount, thereby neutralizing the labor cost advantage of foreign producers. USM maintained that to accomplish this goal, the skilled operator must be replaced by the computer and its mechanical components; i.e., footwear manufacturing must be transformed from an "industry of labor intensity to one of capital intensity."

Table 8

Major Technology Changes in the Footwear Industry

<u>Technology</u>	<u>Average price per machine</u> (000 omitted)	<u>Description</u>	<u>Labor impact</u>	<u>Diffusion</u> (Reference year 1977)
Laser cutting	\$ 350	Computer-controlled laser for pattern cutting; considerably faster than conventional methods.	Unit labor requirement for pattern cutters greatly reduced.	Used by about six or seven shoe companies plus several suppliers; not expected to increase substantially.
Flow molding	35	Automatically molds designs in thermoplastic uppers resembling stitching, pinking, perforations, etc. Permits rapid fashion changes.	Reduces labor requirements for uppers by 20 percent, eliminating stitching and other operations, but requires skilled technicians to prepare molds.	Introduced about 5 years ago; now used for less than 10 percent of vinyl shoes. Growth depends on material and labor savings.
Computer-tape stitching	20	Numerically controlled sewing system; permits rapid style changes but is economically feasible only with long production runs.	Greatly reduces unit labor of skilled sewing operators.	Available commercially only 1 to 2 years; used primarily by bootmakers.
New lasting machinery	18 - 100 (depending on complexity)	String lasting requires sewing a string around the upper, which is pulled to shape around the last. Also improvements in flat lasting machinery reduce number of operations.	String lasting eliminates need for skilled lasting operations. Generally reduces unit labor needs for lasting.	About 7 percent of nonrubber shoes are string lasted. Newest flat lasting very widely used.
Injection molding	55	Automatically molds thermoplastic bottoms to either synthetic or leather uppers.	Requires little of no hand skill; eliminates many operations in most plants requiring skilled workers, including edge trimmers, sole attachers, shankers, etc. One operator may replace six for conventional cement soles.	Introduced in the 1960s; now applied to about 7 percent of nonrubber shoes; growth may be affected by rapid diffusion of pre-molded unit bottoms.
Unit bottoms	20 - 35	Molded unit bottoms purchased by shoe factory.	Eliminates highly skilled operators required in conventional bottoming.	Diffusion very rapid.

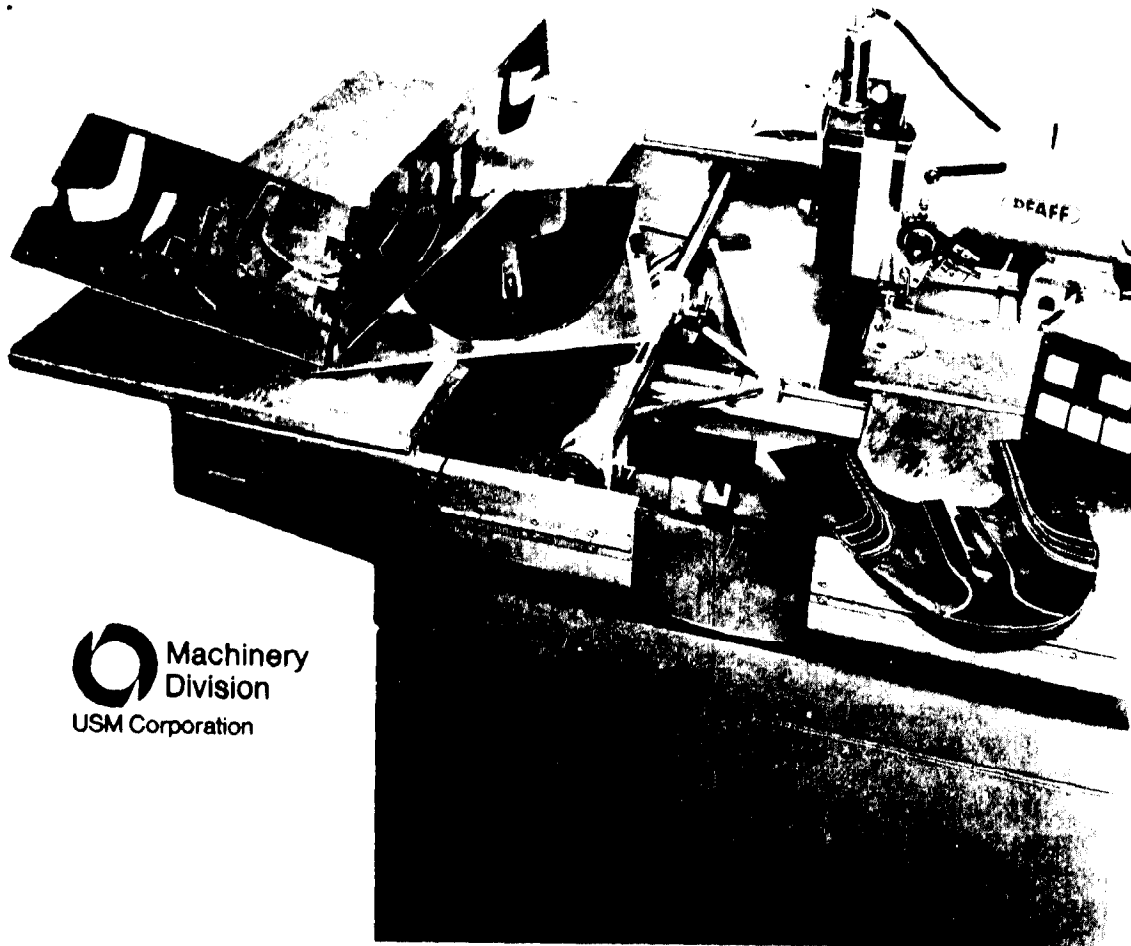
Source: Department of Labor, Bureau of Labor Statistics.

USM's proposals for automation are the most comprehensive among traditional machinery suppliers. However, for various reasons manufacturers have proven reluctant to agree upon and implement industrywide changes. In 1970 USM stated that the pressures of imports, tight money, and higher labor costs were not great enough to force management in the direction of complete automation. During our review manufacturers pointed to the following major obstacles preventing further progress toward automation:

- The first companies to embrace technological innovation take high risks and face unusual costs because of the disruption of well-established manufacturing and marketing procedures; i.e., the return on investment must justify initial conversion costs.
- Automated procedures implemented previously have not been flexible enough to allow manufacturers to respond to rapid style changes with short production runs; i.e., shoes currently produced with automated machinery are usually part of long production runs and therefore more standardized and less fashionable.
- Technology is rapidly changing and many companies believe that new automated machinery would become obsolete before it provided an adequate return.
- Technology is easily transferred abroad, eliminating the competitive advantage domestic manufacturers might temporarily achieve.

Finally, technological innovation appears to have taken a back seat to other alternatives for reducing manufacturing costs and promoting products. When asked how they would spend a discretionary Government grant, both foreign and U.S. footwear manufacturers preferred an investment in new pricing or marketing strategies. This indicates that many manufacturers are principally concerned with obtaining the greatest return in the shortest time, usually 2 or 3 years. Although a 2- to 3-year return period may be founded on traditional principles of risk management, some industry observers believe that 5-year and longer periods will be necessary to initiate investment in fully automated process technology.

Figure 2



(Courtesy of USM)

USM's automatic controlled stitcher, the forerunner of a new generation of computer-controlled stitching systems, is an example of productivity-enhancing technology. The stitcher also offers cost savings and expanded design possibilities.

International implications

The above reservations are important in determining the extent to which automation of process technology is feasible in the footwear industry. However, without extensive automation or development of a unique product line, manufacturers that have not expanded into retailing apparently will be hard pressed to continue to compete with imports, especially those from less developed countries. As explained in chapter 2, wage rates are rising in Taiwan and Korea, forcing those countries to produce higher priced shoes. Concurrently production of low-priced shoes is beginning to shift to countries whose economies are less advanced and whose wage rates are lower. Without substantial reductions in U.S. manufacturing costs, accompanied by increases in productivity, the competitive pressure of imports from Taiwan and Korea, which have shifted from the low- to the medium-price range, may eventually force more U.S. producers out of this segment of their domestic market.

To maintain their domestic manufacturing base and recover a portion of the market now satisfied by imports, some U.S. producers may find it attractive to reduce the labor content of shoe manufacturing to the extent that wage rates no longer provide a competitive advantage to foreign producers. Although this might not have been technically feasible or even economically desirable 10 years ago, recent developments in using computers in manufacturing give manufacturers new economic incentives in terms of increased productivity and new technical incentives in terms of a reasonable probability for success. Dr. Joseph Harrington, an authority on manufacturing and author of a pioneer work on using computers in manufacturing, has characterized this expanded use as follows:

"It now seems apparent that things are about to change--not incrementally, but radically. Fractionated management skills are being reintegrated and the new managers with their broader perspectives are directly controlling versatile machines capable of manufacturing diversified and customized products. The total manufacturing effort is being reintegrated into a responsive directable entity. It is a giant step and a step in the new direction.

"This radical change in direction is a result of the coinciding of many small advances in the state-of-the-art. Taken individually, each advance is an incremental improvement in one field. Taken collectively, when the fields are contiguous, the result is more than just the sum of the parts. All the

tumblers in the lock are falling into place; the door is swinging open. It is one of these rare moments in time when all of a compatible and connected set of conditions has been achieved."

The following section examines some of the more recent technological concepts which, if adopted by the footwear industry, appear to offer the potential for a very large increase in productivity. 1/

Prospects for new technologies

As technologies continue to become available, they must provide sufficient productivity increases to overcome the wage rate advantage exploited by producers in less developed countries. Shoe manufacturing technologies which increase productivity while reducing the labor content, or while reducing labor costs relative to total manufacturing costs, are most effective because these technologies are not as attractive to foreign producers. Many foreign producers are in labor-abundant emerging industrial nations and remain competitive only by exploiting the advantages of commonly available technologies and low wage rates.

Some U.S. industries have developed and applied productivity-enhancing technologies which have reduced labor costs and yielded very large gains. For example, when the printing industry moved from mechanical to electronic machinery, the number of letters and symbols set per staff-hour jumped from 25,000 with skilled workers to 8 million with lower paid apprentice labor--a 31,900-percent increase. Moreover, the introduction of computer-aided design (CAD) and computer-aided manufacturing (CAM) techniques to domestic and foreign small batch manufacturing has yielded similar though not as dramatic improvements.

Other examples are recent improvements in the process technology of labor intensive industries similar to footwear, such as apparel and textiles. In these industries computerized grading systems, which reduce costs and increase efficiency, are now being widely used. 2/ The textile industry,

1/Technologies are considered which appear to provide the flexibility necessary to produce products desired by consumers and which offer the greatest potential for enhancing productivity.

2/Genesco, Inc., claims to have saved over \$750,000 in its apparel operations since adopting CAMSCO's "Gradamatic System" in 1972.

although undergoing severe competitive pressure from imports, has also benefited from adopting computerized knitting machines, which have increased flexibility and productivity.

As previously discussed, we have seen the recent emergence of similar technologies from traditional shoe machinery suppliers. However, to obtain the necessary productivity enhancing technology to compete with imported footwear, manufacturers must also begin to look to nontraditional suppliers from other industries.

Technological innovation among nontraditional suppliers

Development of technological concepts, such as group technology and computer-aided design and manufacturing, have helped some domestic industries maintain a strong manufacturing base and compete successfully in the world market. A parallel can be drawn between the current technical needs of the footwear industry and those of other industries, such as aircraft components, machine tools, and automobile parts, before implementation of the above concepts. We believe that from a technological standpoint, computer-aided design and manufacturing and group technology hold considerable potential for providing the very large productivity gains necessary to keep the U.S. footwear industry competitive in domestic markets.

Group technology

This is an approach that attempts to obtain economic benefits achievable through mass production in those industries characterized by batch or, as in the footwear industry, job-shop (small batch) manufacturing.

A secondary objective of group technology is to give industry a system in which interpersonal relationships may be improved. Experience in other industries has demonstrated that implementation of group technology yields advantages in areas such as component standardization, reliability of estimates, effective machine operation, reduced in-process inventory, productivity, costing, accuracy, customer service, and order turnaround. Additionally, group technology can reduce planning effort, paperwork, setup time, downtime, work movement, overall production times, and finished parts stock.

Finally, overall manufacturing costs have been reduced by over 40 percent per part when conventional production systems are reorganized along the principles of group technology. (For further background on group technology principles and detailed examples of benefits achieved by certain companies through their use, see app. II.)

Computer-aided manufacturing

Experience in using group technology concepts in other industries shows that they are a prerequisite for the systematic use of CAM systems. These systems employ computers to coordinate and control several phases of manufacturing. They set the groundwork for a smooth transition to further automation.

CAM systems employ the engineering techniques available with numerical control which allow the computer to simultaneously operate several machines or several processes. Systems organized on this basis have fostered significant productivity gains in several industries. For example, in the machine tool industry, productivity has been increased in various phases of manufacturing, including metal cutting, material handling, and assembly. CAM systems have also proven to be flexible, allowing manufacturers to respond to changing market demands with new styles and short production runs. Capitalizing on other industries' experiences, footwear manufacturers might develop similar systems to rapidly produce patterns, dies, and lasts in response to changes to new styles. 1/ Material handling and inventory control are additional areas for CAM applications.

Computer-aided design

Another potential application of computers is in designing and styling footwear through CAD. With this process a shoe designer could use "electronic drawing boards" in the form of cathode ray tubes to "sketch" and prove out his design ideas. (See figures 4 and 5.) Our report entitled "Manufacturing Technology--A Changing Challenge to Improved Productivity" described these benefits of CAD:

"These systems provide the designer with instant feedback as to the engineering feasibility of each sketch. When the designer is satisfied that he has a final design, he can instantly store that

1/Genesco, Inc., currently uses CAMSCO's computerized Gradomatic System for pattern drafting and cutting of man-made footwear materials. These operations include proportional grading and laser beam cutting of patterns for all Genesco factories. (See figure 3.) The company also uses a computer in its numerically controlled sewing system, in which the operator simply places the work into a frame for otherwise completely automatic stitching of uppers.

design and all the necessary accompanying data in computer files. This data is then available to produce the instructions necessary to create a numerical control parts program, order the raw materials, sequence the operations, and in some cases, predict the cost to manufacturer."

Figure 3



(Courtesy of CAMSCO, Inc.)

The CAMSCO Gradamatic System is a computerized pattern grading and cutting system designed especially for the footwear industry. The system returns substantial savings by reducing critical leadtimes for style development as well as reducing labor costs of grading.

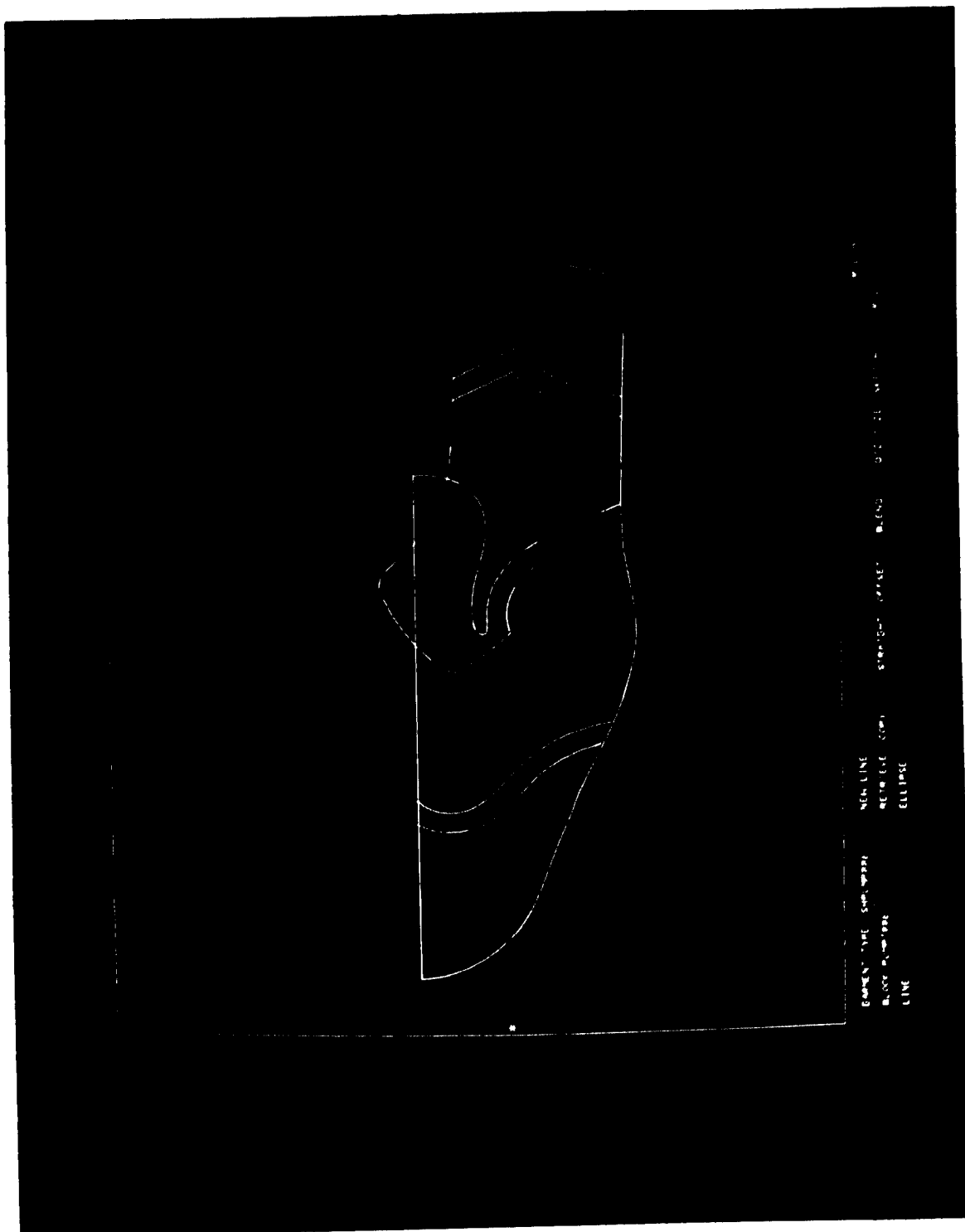
Figure 4



(Courtesy of CAMSCO, Inc.)

The CAMSCO Automated Production Engineering System uses computer technology to enhance the skills and knowledge of the pattern and production engineer to shorten the style development cycle with greater accuracy and reliability than current artisan methods. This system is a complete CAD system with sophisticated capabilities of interface with a number of CAM systems. The engineering sketch on the following page has been created through CAD.

Figure 5



(Courtesy of CAMSCO, Inc.)

The principal advantage of using CAD in footwear manufacturing would be its use in product technology. CAD systems for designing and styling footwear would permit manufacturers to be more responsive to retailers faced with fluctuating seasonal demand which reflects rapidly changing desires and needs among consumers. ^{1/} Diffusion of these systems in the United States would enable manufacturers to more effectively compete with the broad diversity of imported styles and therefore strengthen the domestic manufacturing base.

Application of productivity-enhancing technologies to footwear manufacturing

Technological concepts, such as group technology and computer-aided design and manufacturing, offer the potential for improving footwear manufacturing efficiency and providing a very large increase in footwear manufacturing productivity. Moreover, these new concepts offer manufacturers the possibility of remaining competitive with imports by reducing the direct labor content of shoe manufacturing. However, we have not seen in the industry the potential for reducing the costs of these technologies to the point that they become attractive to the average plant. For example, a normal CAD system costs from \$50,000 to \$200,000 plus the cost of training employees to operate and maintain it. This is well beyond the average footwear plant expenditures of \$28,000 a year for new machinery and equipment over a recent 10-year period.

To bring the promise of technology to the point of payoff, new and different ways of looking at shoe manufacturing are in order. For example, based on the "Lynn, Massachusetts Project" concept (see p. 47), it might be appropriate to have many of the manufacturing plants producing their own components centralize this function in the material suppliers industry (e.g., tanneries). Then manufacturers could order

^{1/}A recent report completed by the Massachusetts Institute of Technology under a grant from Commerce's National Bureau of Standards provided numerous examples of potential long-term benefits of computer-aided design and manufacturing uses in footwear manufacturing. The report stated that computer-aided design and manufacturing could minimize the reaction time for new footwear styles at reduced tooling costs, giving U.S. manufacturing plants leadtime over foreign competitors. The report also stated that "fundamental research in the assembly of flexible materials" must be done if high U.S. labor rates are to be compensated for by increases in productivity.

components cut to finished sizes ready for assembly. With the increased volume per plant, it might then be appropriate for suppliers to apply the new cost-saving technologies that are beyond the means of an average plant. This has the advantage of increasing the efficiency of manufacturers by eliminating some of their labor intensive production operations.

In summary, footwear manufacturers and suppliers should consider the potential benefits of group technology, computer-aided design and manufacturing, and other nontraditional technological concepts when planning for further automation of production. Furthermore, the important interrelationships between these concepts must be fully exploited to achieve maximum productivity enhancement.

CONCLUSIONS

The U.S. footwear industry has long been characterized by its low productivity growth rate, its labor-intensive manufacturing process, and its low level of capital and technological applications. Until the late 1960s, this presented little difficulty for U.S. footwear manufacturers, since their products overwhelmingly dominated the domestic market. However, with the continued increase in foreign competition, U.S. footwear manufacturers must now devise strategies to effectively compete with imports in order to prevent further deterioration of their manufacturing base. To offset the wage rate advantage of certain foreign competitors, the industry must raise its productivity growth rate.

In the short run, footwear manufacturers faced with a lack of capital or high conversion costs may find such alternatives as expanding into retailing and importing or consolidating with other firms more attractive. However, in the long run automation may offer an opportunity for them to gain a competitive advantage over foreign producers principally because new technologies which reduce the labor content of shoe manufacturing, or which reduce labor costs relative to total manufacturing costs, are not as attractive to most producers in labor-abundant emerging industrial nations. Finally, industry-wide efforts to encourage automation would likely contribute to long term productivity growth among domestic manufacturers and further strengthen their competitive position.

In recent years, footwear manufacturers have diverted only limited capital to research and development as well as acquisition of new productivity-enhancing technologies. As a result, the industry has continued to be extremely labor

intensive. Nevertheless, some large manufacturers have begun to use new process technologies to automate certain labor intensive operations, such as stitching and cutting. Some of these technologies offer sufficient potential for greater diffusion among domestic manufacturers.

Given the potential benefits of group technology, computer-aided design and manufacturing, and other forms of automation and the certainty of an increasingly competitive worldwide footwear industry, U.S. producers determined to maintain a domestic manufacturing base must consider productivity-enhancing technologies available from both traditional and nontraditional suppliers. Mechanisms must be developed between Government, industry, labor, and universities which can bring about the use of sufficient productivity-enhancing technologies to sustain the viability of the industry. To do so, we believe, would require increased emphasis on the two key elements which directly affect industrial productivity growth--capital and technology.

CHAPTER 4

GOVERNMENT INVOLVEMENT

Since 1962, the U.S. Government has pursued a general policy of assisting domestic manufacturing industries faced with growing foreign competition and increasing import penetration. The Trade Expansion Act of 1962 was the first law to authorize assistance to workers and firms adversely affected by import competition. Before the 1962 act was passed, the only help available to firms and workers injured by import competition was "escape clause" relief, i.e., either increased tariff protection or quantitative restrictions on imports that compete with those produced by the injured firm or workers. The 1962 act provided for retraining and placement service, relocation allowances for workers, and supplemental unemployment benefits. For eligible firms it offered loans or loan guarantees, technical assistance, and tax relief. The Trade Act of 1974 strengthened and expanded these benefits.

Other forms of assistance not related to import impact have also been available. Firms have received aid from the Small Business Administration, the Economic Development Administration, and some State agencies. Workers have received unemployment compensation and welfare payments.

On March 25, 1975, in a report titled "Assistance to the Nonrubber Footwear Industry" (ID-75-36), we estimated that from 1971 to 1973 \$150.2 million had been provided in assistance to footwear firms and employees. Excluding unemployment compensation to workers, estimated at \$111.8 million, the largest form of assistance was trade adjustment allowances, which were the main benefit of the Trade Acts. ^{1/} From 1975 to 1978 an additional \$50 million in adjustment assistance was provided to footwear firms--\$6 million in technical assistance and about \$44 million in loans. This chapter discusses these and other steps the Government has taken to help the industry.

^{1/}In accordance with the Trade Act of 1974, GAO is required to evaluate the effectiveness of the Adjustment Assistance Program.

ACTIONS TAKEN UNDER THE TRADE EXPANSION
ACT OF 1962 AND TRADE ACT OF 1974

The 1962 act was the first legislation to provide for assistance to firms and workers injured by import competition. The act provided for a program of adjustment assistance directly to firms and/or groups of workers, regardless of whether injury applied to the respective entities or the industry as a whole.

Under the act, an industry, a firm, or a group of workers could petition the Tariff Commission for escape clause relief. The Commission had to respond within 6 months. If the Commission made an affirmative ruling or were equally divided, the President could take any combination of the following actions: (1) provide import relief by increasing the tariff on the product in question, (2) enact some other import restriction sufficient to prevent or remedy serious injury, and (3) authorize groups of workers and firms in the industry in question to apply to the Departments of Labor and Commerce, respectively, for certification eligibility to receive adjustment assistance. After an affirmative ruling by the Commission, if the President did not proclaim import relief within 60 days, he could be required to do so by a concurrent resolution of both Houses of Congress.

The first shoe industry investigation under the 1962 act was not made until January 1971. The Tariff Commission reported on an escape clause investigation into the issue of import damage to the industry. The investigation had been instituted at the request of President Richard M. Nixon. The Commission, being equally divided, made no findings concerning that investigation. The President could have cast a tie-breaking vote but elected not to. As a result, no action was taken by President Nixon or the Congress to help the industry.

On January 3, 1975, the Trade Act of 1974 was signed. The most important change was that domestic industries, firms, or workers now had to show only that imports were a substantial cause of injury rather than the major cause. Another important development was the requirement in section 282 that the Secretaries of Labor and Commerce establish and maintain a system to monitor imports of articles into the United States.

Two reports on footwear were issued by the Commission under this act:

--February 1976--A petition for import relief was filed by AFIA and two footwear unions. The Commission

unanimously found that increased imports were a substantial cause of serious injury to the domestic industry. The Commission, however, was divided on the type of relief needed; recommended were tariff increases, tariff rate quotas, and/or adjustment assistance. President Gerald R. Ford determined that adjustment assistance was the most effective remedy.

--February 1977--The Commission concluded that the domestic footwear industry was suffering serious injury because of the large volume of imported shoes. The investigation was initiated following receipt of a resolution from the Senate Committee on Finance. Here again, the Commission was divided on the type of relief. President Jimmy Carter did not accept what the Commission had recommended and, instead, decided upon an expanded Adjustment Assistance Program combined with orderly marketing agreements. 1/

As can be seen from the above studies and action, the last two administrations have followed the same course. President Ford directed the Secretaries of Commerce and Labor to give expeditious consideration to any petition for adjustment assistance. He also directed the Special Representative for Trade Negotiations to monitor U.S. footwear trade.

Continuing President Ford's policies, President Carter, on April 1, 1977, decided to assist the footwear industry through an expanded and more effective adjustment assistance program. In addition, he instituted orderly marketing agreements, which were concurrently negotiated with Korea and Taiwan. In response to a surge in exports from Hong Kong, he later negotiated an agreement with Hong Kong, calling for the United States to deny entry of nonrubber footwear from Hong Kong unless it is certified as to origin by the Hong Kong Government. Under a new Hong Kong administrative system, Hong Kong will issue such certificates of origin only to footwear made from Hong Kong components.

It is too early to determine if the Certificate of Origin System will be effective in reducing footwear exports from Hong Kong. However, according to AFIA, other major exporting

1/These are bilateral agreements limiting exports to the United States of a specific article or articles which are causing or are threatening to cause serious injury to a U.S. industry.

nations, principally Italy and Brazil, have also increased exports to the United States since the onset of the orderly marketing agreements. This growth, coupled with the growth from other nontraditional exporting countries, led to an increase in nonrubber footwear imports in 1978 and the first quarter of 1979.

GAO REVIEWS OF ADJUSTMENT ASSISTANCE

Since passage of the 1974 Trade Act, we have completed a number of reviews about problems in trade adjustment assistance programs administered by the Departments of Labor and Commerce. For example, our report entitled "Certifying Workers for Adjustment Assistance--The First Year Under the Trade Act" (ID-77-28, May 31, 1977) showed that under the 1974 Trade Act, some workers who produce component parts of manufactured goods and some workers who provide services may be excluded from the benefits of adjustment assistance due to legal interpretations of trade versus non-trade injury. In addition to recommending that the Secretary of Labor develop better program guidelines and procedures, we suggested that the Congress modify the law to include more workers affected by increased import competition. Legislation amending the Trade Act of 1974 which would accomplish this has passed the House and is currently being considered by the Senate.

A later report entitled "Adjustment Assistance to Firms Under the Trade Act of 1974--Income Maintenance or Successful Adjustment" (ID-78-53, Dec. 21, 1978) showed that in practice, adjustment assistance may turn out to be income maintenance--keeping a firm alive longer than would otherwise be the case. The report stated that it may be unreasonable to expect a successful adjustment (one creating long-term viability) given the fact that the firms are usually in a weakened financial condition when receiving their assistance, their adjustment proposals often do not address their problems, the loan amounts are not large enough for real adjustment, and the drawn-out benefit-delivery process results in further financial deterioration. In the case of the footwear industry, this situation has led some manufacturers to characterize adjustment assistance as little more than "burial insurance."

We recommended in the December 21 report that to alleviate deficiencies in the firm adjustment assistance program, the Secretary of Commerce and the Congress improve the program in various ways to help assisted firms have a better chance of achieving long term viability and that the Congress consider special industry programs when industries have been seriously injured by imports.

DEPARTMENT OF COMMERCE FOOTWEAR
INDUSTRY REVITALIZATION PROGRAM

As part of its adjustment assistance program, on July 20, 1977, Commerce announced the Footwear Industry Revitalization Program--a \$56.3 million, 3-year program of assistance for the import-injured segment of the nonrubber footwear industry. This program was developed in cooperation with industry organizations. It includes \$4.2 million for research, education, and technical training; \$10.2 million for technical assistance; and \$41.9 million for loans and loan guarantees. Its primary aim is to save the jobs of some 80,000 employees of 150 trade-injured manufacturing firms in 36 States. The program's principal features include:

- An outreach program to inform all footwear manufacturing firms injured by imports about the benefits available under the trade adjustment assistance provisions of the Trade Act of 1974 and about all aspects of the special Footwear Industry Revitalization Program.
- A streamlined trade adjustment assistance program, which includes technical and management assistance from footwear specialist teams organized to help companies modernize and achieve greater operating efficiency.
- An export promotion program to assist the industry in developing its foreign trade potential.
- A domestic retailer participation program to gain the voluntary cooperation of a number of retailers who would make their styling and merchandizing experience available to manufacturers certified for trade adjustment assistance.
- A program to identify and develop new technologies which could significantly improve the competitive position of the entire industry.
- An effort to establish a footwear center which would promote industry-wide adoption of new technology, support employee and management training opportunities, and offer product/materials testing programs.
- A Research and Development Requirements Board to evaluate and recommend priorities for potential Federal support of specific technological developments that would provide competitive advantages for the domestic footwear industry.

In addition, Commerce is testing the concept of "sharing facilities" through its "Lynn, Massachusetts, project." In this project, several small footwear firms will share storage and use of equipment that no single company could afford.

Additional information on the Footwear Industry Revitalization Program has been provided by the Department of Commerce and is included in appendix IV of this report.

Technology development, diffusion,
and acquisition as a basis for
attaining a competitive advantage

To evaluate key technologies, outline the goals of the footwear industry program, and elicit ideas from industry, Commerce held a footwear technology symposium in June 1978. This symposium, entitled "Manufacturing a Competitive Advantage" was intended to generate ideas for new technological applications in the industry and was based on three concepts.

1. Full and active cooperation between Government and industry.
2. Rational analysis of industry problems and structure as a prerequisite for action, i.e., getting all segments of the industry involved.
3. Creative thinking from well-qualified sources outside the industry.

Also discussed at this symposium was the establishment of a "footwear center" that would provide education, technology evaluation and transfer, technical services, and certain kinds of research. Commerce endorsed this concept and has authorized a contractor to study alternative structures and identify functions that could best meet the varying needs of the industry. According to the First Annual Progress Report on the Footwear Industry Revitalization Program (issued in 1978), the footwear center was scheduled to be fully operational by summer 1979. However, a permanent center has not yet been established.

The contractor study resulted in recommendations regarding the requirements for establishing a footwear center. Commerce elected to create a small interim center, the American Shoe Center, to carry out the planning and other activities necessary to ensure that a permanent center is established by mid-1980. Until the permanent center becomes operational, the industry must rely on Commerce's Office of Science and Technology to encourage diffusion of new technologies throughout

the industry. The remaining functions proposed for the center are not presently being carried out.

In addition to the attempt to establish a footwear center, the technology component of the Footwear Industry Revitalization Program consists of a joint effort between industry representatives and Government to

- identify technological developments that will provide competitive advantages for the domestic industry and
- evaluate the potential for facilitating application and transfer of existing technologies throughout the industry.

To accomplish these objectives, the Office of Science and Technology undertook a program designed to investigate technology in the industry. In addition to requesting a study of the state of the art in footwear manufacturing by the National Bureau of Standards, the Office commissioned some studies by private firms, research institutes, and universities to identify business strategies and the technologies they require that could create a competitive advantage for U.S. manufacturers. The results of these studies were presented at the footwear technology symposium.

A number of funding proposals were developed based on the new technological applications identified during the symposium. The proposals were presented to the Research and Development Requirements Board. The board has met three times and has considered proposals in the areas of computer-assisted design, improved manufacturing of footwear molds, improved man-made upper materials, automated leather cutting, and fitting room improvements. According to Commerce, the Board has endorsed Commerce funding for projects designed to

- apply numerical control techniques to machining footwear molds;
- provide generic development of software and undertake demonstration projects to facilitate broader application of computer-aided design systems, as well as evaluate a "service bureau" concept which would allow small and medium-sized manufacturers to benefit from this technology;
- identify development needs that would "stimulate application of polymeric materials and process advantages" in footwear manufacturing; and
- identify ways to improve fitting room operations.

As of December 12, 1979, one feasibility study on applying numerical control techniques to machining footwear molds has been completed and another is near completion. A study of the "service bureau" concept which would allow small and medium-sized manufacturers to benefit from computer-aided design is underway. Finally, a study to develop a model which could be used to evaluate technological innovations for the fitting room is also underway.

Rather than undertake demonstration projects, Commerce decided to monitor private sector progress in developing computer-aided design systems applicable to footwear manufacturing. However, as part of its specialist team assistance program, Commerce is considering a proposal to help a manufacturer develop a computer-aided design system. Commerce also stated that the group technology concept described in chapter 3 has been incorporated in the footwear specialist team component of the Footwear Industry Revitalization Program.

Evaluation of the Footwear Industry Revitalization Program

As part of the 1978 review of adjustment assistance to firms, we evaluated Commerce's Footwear Industry Revitalization Program and stated that to reach conclusions about the program was difficult because (1) it had been initiated only recently, (2) few firms had gone through the program from certification to receipt of benefits, and (3) many program aspects had not been fully implemented. However, in addressing the need for special industry programs, we concluded that the Footwear Industry Revitalization Program fell short of an industry approach since loans were still available only to financially weak firms. We suggested that the Congress consider making provisions for special industry programs to complement the regular firm adjustment assistance program when industries have been seriously injured by imports and when it is believed the industry can be made internationally competitive. We felt that these programs should include financial aid to help stronger firms expand in addition to the help now given only to marginal firms (ID-78-53, Dec. 21, 1978).

From July 20, 1977, to December 12, 1979, 118 footwear firms--of approximately 340--applied for certification to receive trade adjustment assistance; 91 were certified. Specialist team assistance was provided to 78 firms or about 25 percent of the existing domestic manufacturing firms.

Commerce is currently evaluating the impact of the Footwear Industry Revitalization Program on the competitive position of manufacturers in the industry. The program is scheduled to expire in July 1980.

While we agree with the purpose and goals of the program, we believe the technology component should be expanded. We recognize that progress has been made through studies to help identify and evaluate potential technological applications. We also recognize the benefits of the specialist team approach as a way to improve operating efficiency through modernization of technology and management practices. However, we believe that the effort to improve manufacturing technology must be strengthened to have a significant impact on the industry's productivity growth and its long term prospects for survival. The revitalization program must increasingly focus on encouraging the diffusion and acquisition of productivity-enhancing technologies as a solution to the industry's economic decline. Furthermore, the program should focus greater attention on the technology needs of the entire industry while continuing to help trade-injured manufacturers.

IMPACT OF THE TRADE MONITORING SYSTEM

In addition to expanding the adjustment assistance program, which includes the Footwear Industry Revitalization Program, the Trade Act of 1974 directed that a trade-monitoring system be developed. According to S. Rep. 93-1298, the system was intended to "facilitate the operation of the community assistance program" by serving "as an early warning of serious dislocation from abrupt increases in imports."

In 1977 the Bureau of Labor Statistics and the Bureau of the Census agreed on a division of responsibilities for implementing section 282 of the act. Although both Bureaus developed a statistical monitoring system, responsibility for assessing the actual or threatened impact of imports on the domestic economy was assigned to those agencies (such as the Economic Development Administration) administering adjustment assistance programs. However, in trying to obtain import, production, and export data, we found that the current system does not contain data sufficiently disaggregated to make detailed analyses of market penetration by production and price. Also, it is not structured to provide sufficient early warning to domestic footwear manufacturers regarding further penetration of specific domestic market segments.

Our report entitled "More Can be Done to Identify and Help Communities Adjust to Economic Problems Caused by Increased Imports" (CEDD-79-42, May 15, 1979) supported these findings and concluded that problems in comparability of U.S.

import and production data and limited resources to deal with these problems have been primary impediments to establishing an effective trade monitoring system.

We are studying the status and use of Federal trade-monitoring activities. Our review confirms the need for more meaningful use of trade monitoring data, including its potential use in an early warning system. Our earlier work ("Manufacturing Technology--A Changing Challenge to Improved Productivity," LCD-75-436, June 3, 1976), combined with these findings, prompts us to emphasize that developing and implementing an effective early warning system is important to all American industries. We are considering recommendations addressing the need for a system which covers American industries engaged in international trade, including the footwear industry.

TARIFF AND TRADE REGULATIONS

The Department of Commerce surveyed the regulations of 32 foreign countries governing the importation of nonrubber footwear and issued its results in an April 15, 1977, publication. The data in the report was excerpted from official Bureau of Customs regulations and shows the range of import duties, supplementary taxes or charges, license requirements, quotas and other restrictions, special duty exemptions, and preferential tariffs of each country.

The survey revealed a wide disparity of tariff rates among the principal importing and exporting countries, which range from 2 to 170 percent of the imported value. Of the 32 countries surveyed, 31 have import duties and 23 impose supplementary taxes or charges in the form of value-added taxes (sales taxes, turnover taxes, equalization taxes), excise taxes, import quotas, license requirements, and other special restrictions. Value-added taxes are generally levied on domestically produced footwear as well as on imports.

The regulations of most of the countries provide for some type of preferential treatment, such as duty exemptions or other reductions, which have been negotiated multilaterally or granted unilaterally. Fourteen countries grant some form of general preferences to developing countries on imports of all or certain footwear.

The U.S. import duties average about 8 percent on non-rubber footwear. In contrast, the duties of our trading partners in this area are much higher on the average. In

developing countries, such as Brazil, the duties rise to 170 percent. In the Republic of Korea the duty is 80 percent and for Taiwan it is 91 percent. In addition, Brazil requires import licenses and has a 100-percent import deposit scheme; Korea prohibits all footwear imports; and Taiwan requires licenses plus a tariff based on cost, insurance, and freight value plus 20 percent. In summary, the developing countries, including the main footwear exporters, shield their local markets with high tariff and nontariff barriers of varying severity.

Recently France, Ireland, Sweden, and Australia have also resorted to quotas and restrictive customs procedures on footwear imports. These restrictions, in some cases, have prohibited the growth of export markets for U.S. footwear; in other cases, U.S. manufacturers have been deterred from even trying to develop an export market. While there is no guarantee that U.S. footwear would readily sell in foreign markets, the Commerce export promotion program has resulted in increased exports to Europe. Total U.S. footwear exports have increased from 5.4 million in 1977 to 7 million in 1978 and to an estimated 9 million in 1979.

CONCLUSIONS

Most Government assistance to the domestic industry has been reactive (after the fact) and has been perhaps rightly characterized as "burial insurance." For example, in many cases trade adjustment assistance programs have not been effective in helping workers, firms, and communities adjust to import competition. Orderly marketing agreements were negotiated with Taiwan and Korea to reduce shipments from these two major exporters and give the industry a "breathing space" to revitalize itself. However, according to AFIA, no effective action has been taken to stem the rise in exports to the United States from other countries.

Absent from Government's initiatives have been proactive mechanisms, such as effective early warning systems, to notify footwear manufacturers and producers in other U.S. industries of impending foreign competition for specific domestic markets segments. On a positive note, the Government has initiated a \$56.3 million revitalization program, which includes a number of efforts to assist the footwear industry. The Footwear Industry Revitalization Program contains an outreach program, a streamlined trade adjustment assistance program, a domestic retailer participation program, an export promotion program, and a technology component to identify and develop new technologies. The technology component includes technology studies, an effort to develop a permanent footwear center, and a Research and Development Requirements Board.

Commerce is currently evaluating the impact of the Footwear Industry Revitalization Program on the competitive position of manufacturers in the industry. The program is scheduled to expire in July 1980.

If the revitalization program is continued, it must be strengthened substantially to have enough impact on the industry's productivity growth to create a competitive advantage for U.S. manufacturers. In this regard, it is especially important to emphasize technology improvement by encouraging development, diffusion, and acquisition of productivity-enhancing technologies such as computer-aided design, computer-aided manufacturing, and group technology. These forms of automation offer the potential for creating a competitive advantage (by reducing costs and speeding up response time to produce new styles) which would not be immediately neutralized by transferring the new technology to foreign producers. A stronger Government effort to improve this industry's productivity growth could dissipate pressure for increased protectionism, reduce the future cost of trade adjustment assistance, improve the position of U.S. footwear manufacturers in international trade, and enhance the industry's prospects for long term survival.

Continued development of the export promotion program should also be emphasized. Since most domestic manufacturers have not been export oriented, a program to develop potential export markets and make them attractive to U.S. firms appears to be a particularly innovative way of assisting the industry. In the past, high trade barriers erected by developing and developed foreign countries have proven a significant deterrent to outward-looking U.S. manufacturers. Furthermore, even if trade barriers did not exist, there is no guarantee that U.S.-produced footwear would readily sell in foreign markets, although the export promotion program has helped boost exports to Europe. In promoting exports the Government does have a unique opportunity to assist footwear manufacturers in a way which would probably be interpreted by the industry as a step in the right direction.

RECOMMENDATIONS

For the most part, the solutions to the footwear industry's problems are beyond any single company's capability. Consequently, we recommend that the Secretary of Commerce strengthen the Footwear Industry Revitalization Program by directing that additional initiatives be undertaken to foster joint efforts by industry, the Government, universities, and labor to improve the productivity and to enhance the long term viability of the industry. These initiatives, as a minimum, should address:

- Economic and technical uses of both traditional and nontraditional process technologies, especially computer-aided design and manufacturing, group technology, and other forms of automation.
- Innovative methods to help footwear firms acquire new technologies, such as joint ventures among manufacturers and suppliers and firms from other U.S. industries.
- Mechanisms such as a permanent footwear center to rapidly diffuse new technologies which are deemed economically and technically feasible.

AGENCY COMMENTS

In general, the Department of Commerce commented favorably on our report. However, the Department did not feel that we had recognized sufficiently the strong and productive working relationship now existing between Government, industry, and labor in the area of nonrubber footwear trade and program policies. We agreed with many of the Department's comments and incorporated them to provide a broader perspective on the industry's problems and to more fully recognize the Government/industry relationship. Rather than evaluate the effectiveness of this relationship, our primary objective was to suggest additional steps the Federal Government could take to improve the productivity and competitiveness of U.S. footwear manufacturers. The Department's comments are included in full as appendix IV.

We also received comments from some private organizations representing various segments of the domestic footwear industry. Although some comments were negative, many supported our conclusions. The comments reflected the diversity of opinions held by manufacturers, suppliers, and retailers regarding the economic outlook for their industry. All written comments which raised substantive questions regarding our conclusions on the nature of the industry's problems are included in appendix V.

CHAPTER 5

LESSONS LEARNED FROM THE FOOTWEAR INDUSTRY EXPERIENCE

As explained in chapter 1, changes in economic conditions which have contributed to the decline of the U.S. nonrubber footwear industry have also hurt a wide variety of other domestic industries. We believe our approach for helping the footwear industry can be applied not only to industries which have already suffered serious economic decline but also to industries that are just beginning to experience competitive setbacks. This approach includes an attempt to (1) identify the reasons for the economic decline of the industry, (2) identify the role of technology and its impact on productivity, and (3) suggests ways to alter the decline.

To us the decline is clearly very much a function of one's perception. Certainly, from a domestic manufacturer's standpoint, the productive base has shrunk, leaving the industry with fewer firms and employees. Yet, from a retailer's standpoint, the industry has expanded to a worldwide inventory giving the consumer a broader selection of footwear. The following paragraphs summarize the events leading to this divergence of viewpoints and suggest ways for dealing with this industry's problems which may also apply to industries with similar characteristics which are now or will be at a competitive disadvantage.

Throughout the beginning of this century, the industry was composed of manufacturers, manufacturer-retailers, specialized retailers, and a few suppliers. The manufacturing process was geared to relatively stable runs of predictable styles and construction which provided economies of scale to the few large manufacturers. Although there was competition, the market was growing and the long-term pressures for economy and efficiency were not overbearing.

By the 1950s, the industry's milieu began to drastically change. A confluence of demographic, lifestyle, and income changes heightened retail competition. Discount outlets, department stores, and independent retailers invested in footwear inventories and began to compete for expanding suburban markets.

To meet demand for greater style variation, retailers pressured manufacturers to reduce the size of their production runs and provide a broader selection. Although total consumption began to level out in the 1960s, retail competition and the risk of successfully introducing new styles continued to increase, bringing additional pressure on domestic manufacturers, especially those without retail outlets.

In an apparent effort to compensate for high risks, both retailers and manufacturers sought ways to reduce costs and increase profits. Some manufacturers moved within the country to low wage rate areas (Arkansas, Tennessee, etc.). Others absorbed small manufacturers, and still others started to augment their product lines with shoes imported from low wage rate foreign countries. Foreign manufacturers and their governments quickly recognized the potential in the U.S. markets and became willing partners.

Meanwhile, many small and medium-sized manufacturers found themselves in a noncompetitive position and left the industry. Others carved out specialty markets and survived. But, on balance, a larger number could not maintain competitive operations. Therefore, the manufacturing segment became more concentrated. By 1975, 21 of 378 manufacturers were producing 50 percent of total industry output. The remaining 357 shared the other half.

Productivity growth for the industry has been lower than for almost any other U.S. industry throughout this entire period. Moreover, improvements in the process technology used by most manufacturers have been marginal. Consequently, with the high labor content remaining in domestic shoe manufacturing, low labor rate foreign countries have continued to effectively compete with domestic manufacturers. Retailers, on the other hand, have selected their product lines from a worldwide inventory and have offered the U.S. consumer a variety of footwear.

How can domestic manufacturers maintain their viability? The long-term prospects for success of such an effort are not entirely clear. While process technology exists which can provide the necessary productivity increases, there is little probability of reducing its cost to the point when all manufacturers could afford it. Therefore, use of the technology would be limited to the larger, more prosperous companies. Furthermore, given current U.S. free trade policy, it may be more attractive for manufacturers to continue to supplement their inventories with imports and rely on existing process technology for domestic production.

Because U.S. consumption of shoes appears to have plateaued, large increases in productivity must result in displacing foreign shoes from domestic markets in order to maintain existing jobs. Otherwise, the productivity increases will merely create further consolidations and aggravate unemployment in an already declining industry.

This means the industry must simultaneously undertake two initiatives. First, it must enhance its product technology to

ensure that domestically styled footwear remains competitive with foreign shoes produced for the medium- and high-price domestic markets. Second, it must enhance its process technology to the point when productivity gains make domestic manufacturers more competitive in the world market.

Obviously these are not easy challenges. Bigger industries than footwear have similar problems and have not found viable solutions (steel, color television, fasteners, etc.). Perhaps the footwear industry's small size and recent "can do" attitude can be worked to advantage.

CONCLUSIONS

No single company can undertake the solution to the industry's problems by itself. Moreover, no single company has either the perspective or neutrality necessary to accommodate the conflicting interests of the manufacturer, retailer, and supplier. Consequently, a new or an innovative approach must be developed to satisfy the diverse interests of the different segments and provide an environment in which productive solutions can be generated. 1/

A precedent for such an approach can be found in the operating procedures of the former National Center for Productivity and Quality of Working Life. 2/ Briefly, the Center brought diverse public and private interests together under its neutral sponsorship. And in a "catalytic mode" the Center supported the development of alternatives to solve problems and enhance productivity. As these solutions frequently involved eliminating or creating Government disincentives and incentives, the Center matched private sector interests with appropriate Government agencies. The Center, in its catalytic role, had no stake in the outcome of its efforts other than an interest in the general welfare of the participants and the enhancement of their productivity growth. The Center's methods should be reestablished to not only address the immediate footwear issues but also those of industries whose problems have not yet come into focus.

1/Through its Footwear Industry Revitalization Program, Commerce has already had some success in achieving this objective.

2/Although the National Center went out of business on September 30, 1978, these particular procedures were notably successful.

On October 23, 1978, the President signed Executive Order No. 12089, which established a National Productivity Council. A memorandum which accompanied the Executive Order created a Productivity Improvement Program and assigned productivity responsibilities to various Federal agencies. 1/ Commerce was assigned a leadership role in technological innovation, including improved management systems and production methods and collection and dissemination of productivity information. In cooperation with the Department of Labor, Commerce was also assigned responsibility for (1) raising productivity growth through improved and innovative use of employee capability and (2) protecting and improving the quality of working life of employees in conjunction with productivity improvement. The Department of Commerce, given its productivity responsibilities, is the most appropriate agency for a forum to bring together footwear manufacturers, retailers, and suppliers to address the industry's productivity-related problems.

RECOMMENDATION

The Secretary of Commerce, in cooperation with the Secretary of Labor, should establish a neutral, non-adversary forum (similar to that once provided by the National Center for Productivity and Quality of Working Life) to bring together diverse public and private interests to identify alternatives for enhancing industrial productivity growth.

Since this Nation's success in satisfactorily solving the footwear industry's problems will set the stage for working with other U.S. industries which are or will be at a competitive disadvantage, additional Government efforts to focus public and private interests on the industry's problems would be a desirable and an instructive first initiative.

1/See appendix III for a description of the responsibilities assigned under Executive Order 12089.

SHOEMAKING

Broadly speaking, the process of shoemaking changes essentially flat, one dimensional material to the three-dimensional shoe we all wear. Although the style and type of shoe determine the exact sequence of operations, there are normally seven steps: cutting, fitting, stock fitting, lasting, soling, heeling, and finishing. The diagram on page 63 describes the process. Below are some terms necessary for understanding the process.

Die--tool or device used to cut out the parts of the shoe upper. Dies are made from the patterns.

Shoe upper--the material that covers the upper portion of the foot.

Last--the mold (made of wood, plastic, or metal) over which the shoe is made. The last approximates a person's foot.

Sole--the structure upon which the shoe is built. The outsole is the portion that touches the ground and the part which wears. The insole actually comes in contact with the foot. The midsole, the portion between the outer and inner soles, cushions the shoe.

Welt--a narrow strip of leather stitched to a shoe between the shoe upper and sole.

Shoe manufacturing consists of several sequential processes.

Initially, a design is made into patterns representing the various parts of the shoe upper. Dies are then made and the upper material is cut into the proper shapes. This is the cutting process.

The next process is fitting. This consists primarily of stitching together the parts of the upper. The fitting process may include 60 or more operations. Once the parts are stitched together, they are placed over the last.

The stock fitting stage is next and refers to preparing the insole and outsole before installing them as part of the shoe. The insole is called the backbone of the shoe. Its quality and preparation are important to the life of the shoe and comfort of the wearer. Once prepared, the insole is temporarily tacked to the last along with the upper, which is

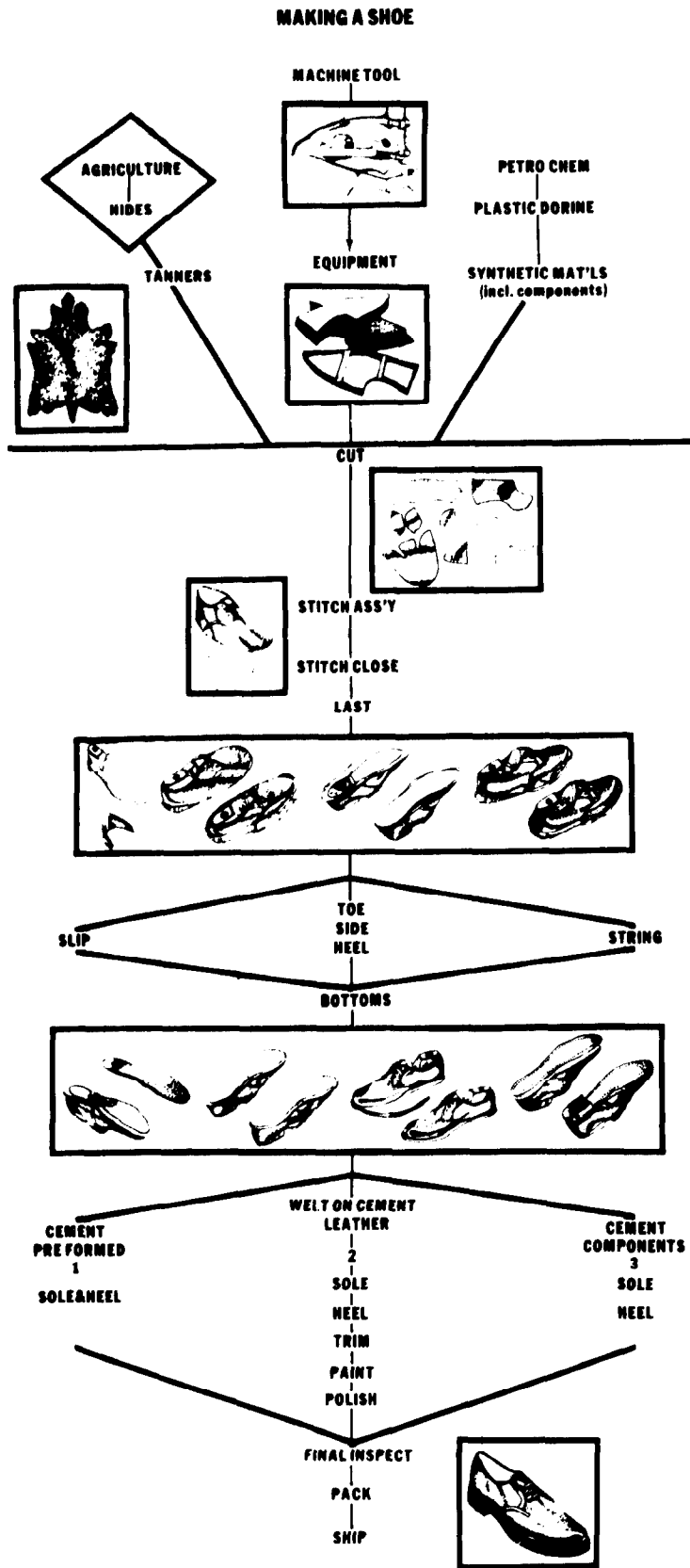
pulled over the last by machine. Machines then shape or mold the toe and heel of the upper to a snug fit around the last.

The shoe is now ready for lasting, a process whereby the upper is attached to the insole through any one of various methods. Thread lasting is the method depicted in the diagram. In this procedure a continuous chainstitched seam is used to fasten the upper to the insole.

"Soling" and "heeling" ("bottoming") refer to the operations necessary to attach the sole and heel to the upper. The method of bottoming pictured in the diagram (sewn construction) is an example of a procedure whereby the outsole is attached to the upper by a stitched seam. This type of sewn construction is known as welt construction, which has long been considered a standard of quality.

The final stage--finishing--includes trimming, sealing, filing, buffing, and spraying the outsole and upper. Ornamentation is then added and shoes are inspected, packaged, and shipped.

Although there are many variations in shoe-manufacturing operations, the steps briefly described above provide a general idea of how a shoe is made.



GROUP TECHNOLOGY--DEFINITION AND USES

Group technology is founded on the principle that similarities occur in designing and manufacturing discrete parts. Since its inception, it has been considered to affect all areas of manufacturing, including design, planning, manufacturing, assembly, and distribution.

In the typical manufacturing plant, the excessive setup time caused by the product mix and small lot sizes may be the most significant part of the total production time. Furthermore, plants typically have a functional layout of equipment; consequently, jobs take a nearly unpredictable path through the plant to reach all the necessary processing locations.

Group technology alleviates this mass confusion by first grouping parts into families having manufacturing similarities. For example, instead of using the current arrangements whereby all cutting, stitching, lasting, and bottoming operations are separately located, use of group technology would call for developing of cells based on the operations to be performed and their volume. Each cell, or group, would have a balanced arrangement of cutting, stitching, lasting, and bottoming operations. In this way, different parts requiring similar machines and tooling would be processed in a sequence that increased the quantity per setup, thereby significantly reducing setup times, inprocess inventories, and costs. This layout would reduce the scope of the problems of production scheduling, production control, material handling, etc., and at the same time tend to improve operators' morale.

In recent years, there has been a steadily increasing number of uses of group technology described in the technical literature. The following paragraphs summarize several of these.

The Langston Division of Harris-Intertype Corporation in Camden, New Jersey, was one of the first businesses in the United States to extensively use group technology. The Langston plant produces semicustom heavy machinery for the paper-converting industries and papermills. In 1969, Langston firmly committed itself to a program called Family of Parts Line Manufacturing. The primary benefits of the program included a 50-percent increase in parts produced per staff-hour, a reduction in floor space of 20,000 square feet (22 percent), and a greatly reduced throughput time--from 30 to 45 days down to 2 to 5 days.

Langston began the program by thoroughly analyzing the the 21,000 different parts produced by its small-parts

machine shop. Using a self-developed classification scheme which consisted of taking a Polaroid shot of every seventh part in stock lying on a grid of 1-inch squares, Langston found that 93 percent of its parts fell into one of five families. Beginning on a small scale with a single family, it grouped machine tools and conveyors in such a way as to form a line for producing the parts belonging to that family. The success of the first line led to the establishment of four additional lines, or groups of machines, dedicated to producing parts belonging to their respective families.

Program results included a reduction exceeding 50 percent in the number of employees required for the traditional central dispatch and expediting activities. Tooling kits were prepared for each line, which greatly reduced the number of trips to the toolcrib. A year after that program, productivity was up about 50 percent. This increase was attributed to many factors, including reduced setup time caused by using similar setups for similar jobs; the ability to reduce lot sizes because of shorter cycle times; improved operator performance due to familiarity of working on all similar parts within a family; fewer trips to the toolcrib; and more meaningful work assignments since each line was manufacturing a complete product, which the operator could observe and appreciate. Another tangible benefit was the ability to better determine required machine capacity.

The Universal Engineering Division of Houdaille Industries, Inc., Frankenmuth, Michigan, had a similar experience. Although Langston chose to go to several small lines, Universal decided to develop a production department on a flexible flow-through basis that accommodated the majority of its production. A main feature of this approach was that workpieces could enter the flow process at any appropriate point and leave the line whenever all the necessary operations had been completed.

Universal approached the workers with a positive attitude, explaining the facts of competition and the need for greater productivity. By using group technology during a good business period, no jobs were lost. This approach provided excellent insurance of competitiveness during business downturns. Besides noting results similar to those obtained by Langston, Universal reported other intangibles, such as improved customer relations, easier implementation of new and better equipment, more involvement of operators and other personnel in terms of suggestions, greater manufacturing flexibility, and the ability to give fast delivery on special orders.

A third example of a company deeply involved in using group technology is the Kansas City Division of Bendix Corporation. Its experiences were documented in detail. ^{1/} Bendix's project was initiated by a study to develop a recommendation concerning use of group technology in manufacturing machined electromechanical products. The first phase of this work involved using a commercially available classification system to code and group products into families. A comparison of manufacturing costs under the current procedure with the manufacturing costs under the group technology system brought about the decision to continue developmental work in this area. This case history documented the costs incurred in setting up, as well as potential savings from implementing, a group technology system.

Many other applications of group technology are documented in technical literature in greater or lesser detail. A widely quoted example of successful use of group technology by foreign firms is the case of Serck Audco Valves. G. M. Ranson has written an account of this case, a summary of which is presented here.

Serck Audco Valves, a British manufacturer of industrial stop valves and actuators, began its self-appraisal in 1959 in an effort to correct its bad delivery record and come to grips with competition from the continental countries, chiefly Germany. Interference from its sales force disturbed any attempt to develop a manufacturing plan. This led to an excess of work in process, which at that time was 52 percent of the annual sales value.

An early project was an analysis of the company's products. Classification and coding consultants aided over an 18-month span in developing an eight-digit numbering system which gave a clear and unique identity to each element in the production process. Almost immediately, because of this effort, a 20-percent reduction in workpieces and purchased items occurred through parts standardization. The development of drawings for each entry in the files led to reorganization of the drawing office and the ability to focus on those products that produced either a low or no profit. The classification and coding scheme led to the grouping of

^{1/}C. P. Rome, "Proceedings of CAM-I's Executive Seminar - Coding, Classification and Group Technology for Automated Planning," 1976, pp. 66-129.

similar parts into families, which were then released for manufacturing in larger batch sizes. Component standardization of tooling, jigs, and fixtures was then possible.

Rearranging the machines into cellular groups resulted in a drastic reduction in throughput time--about 12 to 1. A comparable reduction was measured for work in process. Considerable emphasis was placed on enhancing the production capabilities of the cells beginning with clearly defined work programs and including such items as preset tooling and online inspection. Production control moved to the cell from the works manager's office, and bimonthly work programs were developed that could be modified on the basis of any necessary last-minute adjustments (e.g., order cancellations).

Considerable attention was given to the management structure. For example, the multitude of forms previously necessary was reduced to only 18; other paperwork was reduced also. Serck Audco Valves restructured its management into a finance activity that operated between the sales and the production departments; consequently, some 95 percent of the work programs were achieved without trouble. Experience was acquired in handling the problems of communications and labor relations, and the influence of group technology on accounting, sales, and R&D was evident.

Successful uses of group technology have been achieved by other companies worldwide. The following table contains a representative sample of companies whose experiences with group technology have been documented in English-language literature.

<u>Company</u>	<u>Application</u>
Allis-Chalmers (USA)	Industrial and farm equipment
Ar-Dee Manufacturing (USA)	Screw machine components
Black & Decker (USA)	Power tool components
Boeing Commercial Airplane Co. (USA)	Aircraft components
Caterpillar Tractor (USA)	Housings and covers
Eaton Corp. (USA)	Hydrostatic transmission components
Houdaille - Universal Division (USA)	Tooling
Ingersoll-Rand (USA)	Motor cases and valve chests for air-powered tools
Langston (USA)	Paper winding and slitting machinery components
Pitney Bowes (USA)	Meters and paper-handling equipment
Rexnord (USA)	Construction machinery components
F. L. Smithe Machine Co. (USA)	Envelope-machining components
Sundstrand (USA)	Machining centers
TRW, Inc. (USA)	Valve bodies
Weil Pump Co. (USA)	Centrifugal pumps
Ferodo (UK)	Friction material products
Ferranti (UK)	Electronic components
Herbert Machine Tools, Ltd. (UK)	Machine tool parts
National Cash Register (UK)	Business machine components
Nelco, Ltd. (UK)	Electric motor components
Serck Audco Valves (UK)	Valves and actuators
Wildt Mellor Bromley, Ltd. (UK)	Knitting machine cams
Jeumont (France)	Electrical equipment

THE WHITE HOUSE
WASHINGTON

October 23, 1978

MEMORANDUM FOR THE HEADS OF DEPARTMENTS AND AGENCIES

SUBJECT: Productivity Improvement Program

Today I have signed an Executive order establishing a National Productivity Council. I have established this Council in recognition of the vital role productivity plays in the Nation's economy by helping control inflation, making U.S. goods more competitive in world markets, and increasing the real income of the American worker.

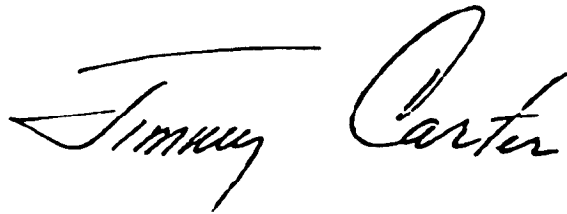
The Council will serve as the focal point in the executive branch for efforts to improve productivity in the private and public sectors of our economy. One of its major functions will be to assure that these efforts are themselves carried out in the most productive fashion.

I would like to highlight the major responsibilities for improvement that are assigned by statute to the executive branch, and identify the departments and agencies to which I look for leadership in carrying out these responsibilities:

- Technological innovation, including improved management systems and production methods--
Department of Commerce;
- Collection and dissemination of information on productivity and productivity improvement--
Department of Commerce;
- Productivity growth through improved and innovative utilization of employee skills and capability--
Department of Labor (in cooperation with the
Department of Commerce);
- Protecting and improving the quality of working life of employees in conjunction with productivity improvement--Department of Labor (in cooperation with the Department of Commerce);

- ° Productivity measurement--Department of Labor;
- ° Labor-Management cooperation in productivity growth--Department of Labor;
- ° Productivity of the Federal Work Force--Civil Service Commission (in cooperation with the Office of Management and Budget); and
- ° Assuring that productivity concerns are taken into account in regulatory policy--Office of Management and Budget (including assuring consideration of productivity in regulatory analyses provided for in Executive Order 12044).

Improved productivity is vital to the social and economic well-being of our Nation. The Federal Government can make a major contribution to improving productivity. I expect all agencies to cooperate with and assist the Council in meeting its responsibilities so we realize maximum benefit from the Federal effort to improve productivity growth.

A handwritten signature in cursive script that reads "Jimmy Carter". The signature is written in black ink and is positioned to the right of the main text block.



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Administration
Washington, D.C. 20230

89 JUN 1979

Mr. Donald L. Scantlebury
Director, Financial and General
Management Studies Division
U. S. General Accounting Office
Washington, D. C. 20548

Dear Mr. Scantlebury:

This is in reply to Mr. Eschwege's letter of May 7, 1979 requesting comments on the draft report entitled "Slow Productivity Growth in the U. S. Footwear Industry -- Is This The Future of U.S?"

We have reviewed the enclosed comments of the Assistant Secretary for Industry and Trade and believe they are responsive to the matters discussed in the report.

Sincerely,

A handwritten signature in black ink, appearing to read "Lisa A. Porter".

Lisa A. Porter
Assistant Secretary
for Administration

Enclosure



UNITED STATES DEPARTMENT OF COMMERCE
The Assistant Secretary for Industry and Trade
Washington, D.C. 20230

JUN 21 1979

Mr. Donald Scantlebury
Director, Financial and General
Management Studies Division
General Accounting Office
Washington, D.C. 20548

Dear Mr. Scantlebury:

This is in reply to the draft report on "Slow Productivity Growth in the U.S. Footwear Industry--Is This the Future of U.S. Manufacturing?" submitted by the General Accounting Office for our review and comment.

I would like to commend the constructive approach taken by GAO in developing its recommendations to assist in maintaining the future viability of the footwear industry. However, the conclusions and recommendations sections of the report and the Summary/General Proposal chapter do not recognize the strong and productive working relationship which exists among government, industry, and labor, particularly in the area of nonrubber footwear trade and program policies.

The enclosed comments note several areas where additional information would enhance the accuracy of the report as well as provide a broader perspective on the problems faced by the domestic footwear industry.

I hope our comments and information material will be beneficial to you and your staff in preparing the final report.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank A. Weil".

Frank A. Weil
Assistant Secretary for
Industry and Trade

GAO Report "Slow Productivity Growth in the U.S. Footwear Industry--Is This the Future of U.S. Manufacturing?"

This is in reply to the subject draft report submitted by the General Accounting Office for our review and comment.

The conclusions and recommendations sections of the report and the Summary/General Proposal chapter do not recognize the strong and productive working relationship which exists among government, industry, and labor, particularly in the area of nonrubber footwear trade and program policies. In addition, these sections (a) do not discuss significant inherent strengths of the U.S. footwear manufacturing industry which offer a potential natural competitive advantage over foreign producers; (b) do not identify causal factors leading to the industry's lack of investment in new process technologies, as well as new machinery and equipment; (c) may overemphasize the effect of sole adoption of process technology in improving productivity and making the U.S. footwear industry more competitive; and (d) suggest several initiatives which are already being implemented within the Department of Commerce.

The above comments are discussed more fully below and note several areas where additional information would enhance the accuracy of the report as well as provide a broader perspective on the problems faced by the domestic footwear industry. Other specific comments on the report are identified by page number and section in the attachment. Also included is the annual report and more recent 18-month report on the Department's Footwear Industry Revitalization Program. These will update information on elements of this program which are summarized in the draft study.

Government Assistance and Monitoring Efforts

The subject report (p. 53) characterizes government actions and assistance in behalf of the nonrubber footwear industry as being uncoordinated, without focus, reactive, "burial insurance," and insufficient in providing early warning of import competition.

Within the Department of Commerce, interagency cooperation has been established on trade adjustment industry assistance among the Industry and Trade Administration (ITA), the Economic Development Administration (EDA), and the Office of Science and Technology. A top-level inter-agency Trade Adjustment Oversight Committee comprised of the Deputy Assistant Secretaries of the designated agencies was established in October, 1977, and has served since then to coordinate Departmental trade adjustment activity for footwear and other industries.

Grant activities earmarked to assist trade-impacted industries are being coordinated and monitored by the three Commerce agencies. Thirteen grants totaling almost \$6 million have been awarded to provide industry-wide assistance to trade-impacted (or potentially trade-impacted) industries. Assistance includes improving the utilization and transferability of already existing technologies, as well as improving management and marketing strategies. Industries currently being assisted include apparel, textiles, footwear, steel, handbags, stainless steel flatware, industrial fasteners, consumer electronics, and commercial fishing.

EDA has also provided almost \$1 million to the Industry and Trade Administration to promote U.S. exports of footwear, apparel and textile products. The export promotion drive for American footwear is a key factor in making 1978 a record year for U.S. footwear exports (63 percent gain to European markets and 28 percent gain worldwide), and the accomplishments cited in the 18-month report should be noted in the GAO report.

The report discussion of the need for an early warning system suggests that this is an entirely new concept and one not now employed by the government in import policy formulation. This view fails to recognize the channels of communication currently maintained and utilized by the Administration and the domestic footwear industry. The Ad Hoc Inter-agency Committee to Monitor Nonrubber Footwear Imports has on a number of occasions issued alert notices to the STR regarding recent or expected surges in footwear imports from countries such as Hong Kong and Italy, enabling policy deliberations to be undertaken within the Administration on a timely basis. Such deliberations generally include consultations with representatives of domestic footwear industry management and labor, designed to apprise them of trade developments and to elicit suggestions for dealing with import problems -- particularly those concerning the current import relief on footwear.

In addition, suggestions for an "early warning system" for footwear, similar to efforts by BLS and Census to establish a monitoring system for imports of all products, is not pertinent at this point since imports already are acknowledged as a special problem for the industry.

It would be appropriate for the GAO report to include a reference to the special import monitoring system in effect as a result of the program to administer the Orderly Marketing Agreements (OMAs) with Taiwan and Korea. The OMAs apply to only two countries, but the monitoring system maintains surveillance on trade from all countries and in great detail. The system has been able to detect significant changes in trade patterns that have occurred during the OMA period. The Federal Register notice of the monitoring system and a summary of the latest monthly report are attached.

Several interagency mechanisms also exist to assure that international programs supported by the U.S. are not counter-productive to domestic programs, such as the footwear industry program. The Development Coordination Committee (AID) and its working group on multilateral assistance, and the National Advisory Council for International Monetary and Financial Policies are among those interagency groups in which the Department participates.

Industry Cooperative Effort

The report (p. 54) recommends, and we generally agree, that appropriate coordinated efforts be undertaken by industry, government, academia, and labor to enhance the long-term viability of the footwear industry; and further recommends specific initiatives to accomplish this end. The following specific activities, already underway in the Department, address the broader recommendations of the GAO report. These activities are omitted from the GAO report and should be incorporated in it to improve its accuracy.

An integral part of the Department's Footwear Industry Revitalization Program is the joint effort between industry representatives and government to (a) identify technological developments that will provide comparative advantages for the domestic industry; (b) evaluate the potential for facilitating application and transfer of existing technologies throughout the industry; and (c) create a Footwear Center to promote industry-wide adoption of new technology, to support employee and management training opportunities, and to offer product/materials testing programs. Industry representatives on the Footwear Research and Development Requirements Board have endorsed Commerce funding for specific projects to assist the entire industry. Among these projects are those designed to apply numerical control techniques to machining footwear molds; provide generic development of software and undertake demonstration projects to facilitate broader application of computer-assisted design systems, as well as evaluate a "service bureau" concept which would allow small-to-medium manufacturers to benefit from this technology; and identify development needs that would stimulate application of polymeric materials and process advantages in footwear manufacture.

In addition to the cooperative effort in the area of technology development, the Department is working closely with all segments of the footwear industry to create a Footwear Center to serve as a focal point to encourage industry-wide adoption of managerial, technical and marketing innovation. The Department and industry objective is to have the Center operational in late 1979. The primary services to be offered the industry by the Center will include ongoing evaluation of potential areas for future productivity improvement.

Although the Footwear Center concept is designed to meet the unique needs of the footwear industry, the Department's Office of Science and Technology, through the National Bureau of Standards, is conducting a cooperative technologies study to evaluate specific needs and support for a cooperative technology program initiative. Such a program would stimulate the cooperative development by industry, labor, academia, and government of critically needed industrial technologies which are basic to many firms, risky in nature, and otherwise unlikely to be developed in a timely manner by the private sector. Currently, the study is directed to eight industrial sectors and involves direct input from industry participants to identify primary opportunities for productivity improvement.

Group Technology

The group technology concept (p. 35, 55) which the report recommends to achieve efficiencies in the footwear industry is incorporated in the footwear specialist team component of the Commerce Footwear Industry Revitalization Program. Specialist teams organized from consulting firms with footwear industry expertise uniquely adapt the technical assistance available under the Trade Act to help certified companies deal with problems in operations, marketing, technology and management. Projects completed with individual footwear companies have achieved operational improvements in manufacturing costs, product and labor costing, materials control, inventory control and production planning, work-in process, employee turnover, incentive wage systems, product standards, plant layouts and machinery investments, marketing strategies, and product development to name a few. A total of nearly \$8 million has been directed to this effort in the past 18 months. This specialist team program is designed to improve the competitive position and establish long-term viability of trade-impacted footwear firms, and it complements the Department's financial investment in companies to help modernize and achieve greater operating efficiency. The specialist team program is discussed more fully in the attached annual report on the Footwear Industry Revitalization Program.

Opportunities for Improving U.S. Competitive Position

The comparative wage advantage of certain foreign competitors and the rate of industry adoption of automated technologies to increase productivity are not the sole factors that will determine the ability of the domestic footwear industry to improve its competitive position and remain viable, as the GAO report implies. Successful U.S. firms, both large and small, do not compete on the basis of price alone. Domestic manufacturers that capitalize on their inherent competitive advantages (i.e. more timely deliveries, reduced customer lead time, cost advantage relative to freight and duty costs, service capability, financial flexibility, manufacturing flexibility and capacity to respond quickly to style changes, quality and customer returns, market segmentation, and control of product lines and cost) can overcome wage differentials at certain price points and can maintain a competitive position with a minimum of capital investment. In fact, the Department's footwear consultants working with certified manufacturers conclude that an improved management process is more important at this time than improved equipment and new technology.

Domestic retailers recognize the many domestic manufacturers which display the above characteristics, and the outlook for those manufacturers committed to achieving their potential in these areas does provide an encouraging outlook for the industry. The footwear specialist team consulting effort addresses the specific needs of trade-impacted footwear companies to help achieve these competitive advantages. The attached "Summary of the Reports from the Footwear Specialist Teams," January, 1979, provides a comprehensive evaluation of the problems and opportunities in the industry, beyond technology related applications, that are perhaps equally or more critical to achieving greater productivity and competitiveness within the footwear industry.

To put the issue of productivity in proper perspective, it should be noted that this industry faces limited horizons for increasing its productivity through strictly automated techniques. The industry is a mature one. Unless there are significant breakthroughs in new technology that can be applied to the production process, there appear to be significant limitations on the ability of shoe manufacturers to increase productivity through automated means. That is one of the reasons this industry is among the lowest in productivity growth.

Productivity in the shoe industry also depends largely on the nature of the product. A simple shoe that can be produced in great volume can show a high level of output per employee-hour, whereas a more complex shoe which requires additional machine or hand operations will show low unit output. Because style is an important element in the shoe business, many types of shoes are limited to small runs, thus impeding

the opportunities for productivity increases through high volume production. What is successful in the shoe industry is a combination of technology application, design creativity, and aggressive marketing to produce a shoe that will sell in the mass market and lend itself to production with new technology.

Capital Investment and Technology Application

There are several inhibiting factors contributing to the footwear industry's (suppliers and manufacturers) relatively low level of capital investment and technology application which should be recognized in the report, and which can be diminished through government initiatives such as those contained in the Vanik Bill to improve assistance to trade impacted firms. In addition to those obstacles preventing progress toward automation in the industry which are cited in the report (p. 31), there is a growing recognition that improved management systems, product styling, positioning in the marketplace, and marketing/business strategy are equally crucial factors in maintaining a competitive position in the market. These requirements are all vying for existing, but severely limited available capital. Further, skyrocketing hide prices, resulting in substantially higher raw material costs, mean not only higher operating expenses for the industry but also less investment in new machinery and equipment. Firms need to buy the leather but can delay buying the new machine given the fact that only so much additional capital in loans is available. The Department's emphasis on modernization for the industry will obviously be affected by this strain on working capital funds; in fact many funds earmarked by companies for fixed assets will be shifted to meet working capital needs.

Several of the provisions contained in the proposed Vanik Bill would increase the availability of Government loans and guarantees, which would provide the incentive and better enable trade impacted firms to follow through with necessary capital investments to complement their overall revitalization effort. Faster depreciation for investment in new equipment in import impacted, fashion related industries would create additional incentives in support of new technology adoption and transfer to such industries.

GAO NOTE: Discussion of World Bank lending to footwear and other manufacturing industries in foreign countries has been deleted from this report. Specifically, we deleted the section which addressed the question of whether U.S. Government participation in certain international organizations conflicts with the Commerce Department's goal of strengthening the domestic footwear industry through the Footwear Industry Revitalization Program. We also deleted the related recommendation that Treasury develop a procedure requiring that appropriate officials from affected U.S. industries be notified when second tier loans are used by the World Bank to establish or support foreign firms which would compete with U.S.-based companies. A comprehensive review is under way which will more fully address the question of whether World Bank loans have been used to improve the position of directly competitive foreign manufacturing firms.



June 8, 1979

Mr. R.W. Gutmann
Director
US General Accounting Office
Logistics and Communications Division
Washington, D.C. 20548

Dear Mr. Gutmann:

Attached is a summary of our comments on the draft of the GAO Proposed Report entitled, "Slow Productivity Growth in the US Footwear Industry -- Is This the Future of US Manufacturing?" Also enclosed is a copy of the Report, throughout which we have corrected or updated the statistics.

As you will note, we take exception to several of the statements or assertions about the domestic footwear industry that are presented in the Report. We would like to elaborate further on our comments, and would very much appreciate the opportunity to meet with you to discuss the Report in greater detail.

We are pleased that the draft was submitted to us for our review, and hope that our comments are helpful to you in the preparation of the final Report.

Sincerely,



Fawn K. Evenson
Executive Vice President
National Affairs Division

FKE/pg

cc: Frederick Haynes

We have been asked to comment on the draft of the GAO Proposed Report entitled "Slow Productivity Growth in the U.S. Footwear Industry -- Is This the future of U.S. Manufacturing?" We have reviewed the Report and present here a brief summary of our findings.

1. The characterization of the domestic footwear industry is much too negative. The presentation of the industry as a "do-nothing" one on style and price is erroneous, as domestic manufacturers produce everything from high-fashion footwear to lower-price footwear. As the Report itself states on page 2, "...in the United States...shoes are produced each year for every man, woman and child; in sizes, widths and shapes to fit every foot, at prices to fit every purse, in constructions and materials to fit every purpose, and in styles to fit every occasion."

In addition, the industry is portrayed as one that has shown no initiative of its own, but rather has depended on the Government to take the lead in coming up with new ideas or beneficial programs.

In point of fact, the technical assistance program that we are working on with DOC is the direct result of a proposal submitted by the industry to DOC in February, 1978. Industry-recommended projects to strengthen the industry included such things as the Footwear Center, designed to promote industry-wide adoption of new technology and management systems. (No mention of the Footwear Center was made in the Report.)

As another example of action on the part of the industry, it was AFIA who approached DOC on an export promotion program. The Government did not come to us. We have been very involved with that program, which has been extremely successful. We have twice participated in the Dusseldorf International Footwear Fair (the largest in Europe) and have organized two trade missions to Europe (September 1978 and March 1979). Two more trade missions and participations at Dusseldorf are scheduled for September 1979 and March 1980.

Further, the Report implies that we were not interested enough even to participate in the annual meeting of the UNIDO Industrial Development Board. In fact, the U.S. Government never notified us of

this meeting. It was the Tanners' Council that notified us a week before the meeting, which was insufficient time to make arrangements to attend.

2. The Report also implies that advanced technology is available, but that the domestic industry has not taken advantage of it to improve productivity. In point of fact, the technology mentioned in the report as applicable to the footwear industry still is in the early stage of development and is not currently available. It will be some time before the technology actually is available for a final-product fashion industry such as footwear. Even DOC now understands this.

Also, it is misleading to assume that what works for "widgets" (i.e., group technology systems) can be automatically applied to the footwear industry where production is so varied.

Computer-aided design and computer-aided manufacturing (CAD/CAM) applications are being worked on and appear to offer promise for the future. Computer-aided design still is in the developmental stage. Some elements of computer-aided manufacturing (stitching and pattern-making, for example) have been in use for several years, but cannot yet be widely applied.

Much of the new technology is not well-diffused because it is still too expensive for most companies in the industry. Laser cutters, for example, can be utilized efficiently only in factories whose output is substantially higher than an average shoe factory. Computer-controlled stitchers are not needed by many manufacturers whose production does not utilize fancy stitching. These stitchers still cannot be applied to the basic stitching requirements of the industry.

It also must be pointed out that the footwear industry is unique and its productivity cannot be measured in the same way that productivity for "widgets" is measured. To meet consumer requirements, footwear production is extremely diverse. Indeed, the Report states (page 2), "...the making of shoes differs from many consumer

items. For example, while shirts, automobiles and many other items are mass produced in identical size, shape, color, material and function, less than one percent of the yearly production of the average shoe factory is identical."

Moreover, USM has developed automated systems but the industry is not in a financial position to invest heavily. It must be remembered that low profits and bleak outlook for the future (as a result of ever rising imports) provide little incentive to invest. In addition, USM believes that its expenditures on R&D indicate no lack of commitment to the development of improved technology, as the report asserts. The company also disputes the assertion that it controls fifty percent of the market, given the number of foreign and domestic equipment suppliers.

Another reason for the industry's hesitance to invest is that it is so easy to transfer technology abroad. After a domestic manufacturer pays the costs and takes the risks, the technology can be transferred abroad. Thus, the domestic manufacturer soon loses whatever competitive advantage the new machinery can provide.

3. A major shortcoming of the Report is the repeated reference to the fact that retailers seek out foreign sources for reasons of quality, quantity, or price. By far, the overriding factor is price and retailer profit margin. This was totally downplayed in the Report.

Retailers decide at what price points they will sell their shoes, then seek out the cheapest source of supply. Lower wage rates, illustrated in the following table, allow foreign suppliers to undercut domestic manufacturers, thereby enhancing the potential for higher retail profit margins.

Estimated Total Compensation Per Hour Worked
in Specified Industries Related to Footwear-1977*
(in U.S. Dollars)

<u>Country</u>	<u>Industry</u>	<u>Compensation</u>
Brazil	leather footwear	\$.88
Hong Kong	rubber footwear	. 87 - .91
Italy	leather footwear	3.83
Japan	leather and leather products	3.18
Korea	leather footwear	.48 - .50
	rubber footwear	.46 - .48
Spain	clothing, footwear & leather	1.62 -1.82
Taiwan	leather & leather products	.56 - .59
	plastic products	.72 - .75
USA	footwear, excluding rubber	4.31

* Including fringe benefits

Source:

U.S. Department of Labor, Bureau of Labor Statistics,
Office of Productivity and Technology, October, 1978.

Retailers enjoy greater mark-ups on imported footwear than on domestic footwear. Thus, it is not the consumer who benefits from low-priced imports, but the retailer.

The following table indicates that domestic manufacturers do produce footwear that is competitive at retail with lower-priced imports. A \$3.10 import f.a.s. is equal to a \$5.00 domestic at wholesale; a \$3.75 import f.a.s. is equal to a \$6.00 domestic shoe at wholesale; and a \$4.40 import f.a.s. is equal to a \$7.00 domestic at wholesale. Based upon the most recent available data, a substantial portion (42.9 percent) of domestic footwear is valued at \$7.00 or less (\$14.00 at retail).

DOMESTIC NON-RUBBER PRODUCTION AVERAGE FACTORY VALUE: 1977**

	Quantity (Million Pairs)	<u>% of Category</u>
<u>TOTAL MEN'S, YOUTHS', BOYS'*</u>	<u>115.1</u>	<u>100%</u>
Not Over \$6.00*	32.1	27.9%
Over \$6.00	83.0	72.1%
<u>TOTAL WOMEN'S AND MISSES'</u>	<u>199.9</u>	<u>100%</u>
Not Over \$7.00	106.1	53.1%
Over \$7.00	93.8	46.9%
<u>TOTAL CHILDREN'S AND INFANTS'</u>	<u>47.1</u>	<u>100%</u>
Not over \$5.00	18.3	38.9%
Over \$5.00	28.8	61.1%
<u>TOTAL PRODUCTION*</u>	<u>364.9</u>	<u>100%</u>
Not Over \$7.00	156.9	42.9%
Over \$7.00	208.0	57.1%

Notes:

* excluding work shoes

** assuming a 100% markup, double the average factory value is the retail price.

\$6.00 domestic shoe at wholesale = \$3.75 import f.a.s.

\$7.00 domestic shoe at wholesale = \$4.40 import f.a.s.

\$5.00 domestic shoe at wholesale = \$3.10 import f.a.s.

KEY POINTS:

- A substantial portion (42.9%) of domestic footwear is valued at \$7.00 or less.
- Thirty percent of men's, youths' and boys' non-rubber footwear was valued at not over \$6.00 per pair.
- Fifty-three percent of women's and misses' non-rubber footwear was valued not over \$7.00 per pair.
- Almost forty percent of children's and infants' non-rubber footwear was valued not over \$5.00 per pair.

It also should be pointed out that volume retailers frequently place orders representing total production of a supplier. It is exceedingly risky for a manufacturer to devote his entire production to one customer, for that customer can (and does) change suppliers for any number of reasons.

Additionally, it should be noted that domestic manufacturers import far less than is indicated in the Report. It is estimated that only about ten percent of imports are purchased by domestic manufacturers.

4. We also dispute the implication in the Report that domestic manufacturers set out to "concentrate" their production in the medium price range. The fact that the mid-price range represents the "guts" of the industry came about by a process of elimination. When retailers flocked to the Orient for cheap shoes and to Italy and Spain for high-priced shoes, the only substantial market we were left with was the mid-price range, although, as stated previously, a good proportion of our production is in the lower price ranges.

The high and low price ends of the market were not "additions" to the market. Imports of high and low-priced footwear did not simply supplement the medium-price domestic production. Rather, these imports have replaced domestic production. Government trade policy permitted these two "ends" to be wiped out. The following table illustrates the decline in domestic production between 1968 and 1978, from 642.4 million pairs to 403.3 million pairs, and the concurrent growth in imports and import penetration.

	<u>MARKET SUPPLY</u> (million pairs)						
	<u>1968</u>	<u>1970</u>	<u>1972</u>	<u>1974</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
<u>NON-RUBBER</u>							
Imports	175.3	241.6	296.7	266.5	370.0	368.1	373.5
Domestic	642.4	562.3	526.7	453.0	422.5	406.0r	403.3r
Total	817.7	803.9	823.4	719.5	792.5	774.1	776.8
Import Share*	21.5%	30.1%	36.1%	37.2%	47.0%	47.9%	48.5%

r -- revised

* Import share of the total excl. US exports

It also is inaccurate to imply that "in the medium price ranges...style and import competition have not been overly important." The natural upgrading that occurs continually pushes the low-price countries into higher price brackets, thereby competing with the "guts" of the domestic industry. The downgrading into cheaper footwear from Italy, combined with upgrading from other countries, further squeezes the domestic industry.

All imports are competitive with domestic production, for the domestic industry produces all types of shoes. Again, we quote the statement on page 2 of the Report: "...in the United States... shoes are produced each year for every man, woman, and child; in sizes, widths and shapes to fit every foot; at prices to fit every purse; in constructions and materials to fit every purpose; and in styles to fit every occasion."

5. We also take exception to the statement that domestic footwear probably would not sell abroad even if import barriers did not exist.

The fact is that exports have grown significantly since the export promotion program was begun. In the last half of 1978, exports increased by 37 percent from the comparable year earlier period. Total 1978 exports set a new record at 7 million pairs, a 28.2 percent jump from 1977 levels of 5.4 million pairs. For the first two months of 1979, non-rubber exports at 1.2 million pairs were 36.8 percent above year-ago levels, and represented 1.8 percent of production. These increases to Europe, basically, convince us that we have a great potential in other parts of the world. Those markets, however, are totally closed to us.

Furthermore, increased interest in American footwear from foreign buyers also was evidenced by foreign buyer participation at National Shoe Fair in New York. Over 1,500 foreign buyers registered at the February show, 14 percent of visitors at NSF. Prior tallies ranged from 600-800 per show.

6. It is misleading to divide the industry into "sub industries" according to category of footwear (athletic, slippers, work, mens', womens', and

childrens'). The industry cannot be so segmented, since it is in fact all one industry. Footwear is substitutable (athletic and mens', for example). Also, within one factory, several types of shoes may be produced.

7. It is unfair to characterize the industry as one that lags in investing in R&D by looking only at the figures for manufacturing alone. One would expect more R&D expenditures at the supplier end (for machinery, chemicals, materials) which the industry could then apply.
8. The Report also implies that the \$56.3 million assistance program was a kind of "handout" to the industry. It should be noted that \$42 million of the \$56 million is to be used for loans and loan guarantees at 2 points above prime. Many other industries get direct subsidies. Loan guarantees are not free.
9. We have updated/corrected the industry statistics throughout the report.

This is a brief summary of our key conclusions on the Report. We would appreciate the opportunity to meet with you to discuss more fully specific aspects of the Report.

Tanners' Council of America, Inc.

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May 25, 1979


Mr. Donald Scantlebury, Director
Financial and General Management
Studies Division
U.S. General Accounting Office
Room 6001
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Scantlebury:

On behalf of the Tanners' Council of America, I should like to thank the General Accounting Office for an opportunity to comment on the draft of the proposed report to the Congress on "The U.S. Footwear Industry--Is This The Future of U.S. Manufacturing?" Obviously, this is of vital concern to the leather industry.

As indicated in the enclosed comments, we believe that further study, in specific areas, is needed before the Congress undertakes a program designed to help preserve the domestic footwear industry. Should further study be initiated, we would wish to be included in additional discussions or testimony since the comments included were intended to be brief and to put forth general ideas rather than specifics to be examined.

Sincerely,


William Rapp
Director, Information Services

WR:am
Enc.

Comments By The Tanners' Council of America
 On the proposed report of the General Accounting office entitled:

"The U.S. Footwear Industry--Is This
 The Future of U.S. Manufacturing?"

The draft of the GAO's proposed report on the U.S. footwear industry is an impressive presentation and surprising as a piece of government or industry writing. Stylistically simple and clear in language, tightly organized and set in an historical matrix, the report's basic strength is the ease with which it can be read and understood. Its weakness is its failure to carry the historical analysis from the past into the present.

In its discussions of the shoe market sections lost and the portion still largely preserved by domestic footwear producers, the report has concentrated its analysis too narrowly. Its concentration on the industry's historical labor intensity to the exclusion of other factors leads to such distortion as the belief that labor productivity rates have to be improved 89% to make the domestic industry competitive, and that new technologies can solve such "formidable... (but) not unheard of" challenges. (See GAO note 1/ below.)

The report suffers from not having a complete cost sheet of all elements in shoe manufacture. Table 9, "Comparative Footwear Costs...", with its across-the-board figures for indirect labor and capital and its non-differentiation of "material" used in shoes, too conveniently restricts the search for a solution of the

1/This sentence was deleted from the final report.

2/Table 9 was deleted from the final report.

problems of the domestic footwear industry. It might prove very instructive if several different types of shoes -- requiring different length runs, differing materials and sold in different market areas -- were costed out in a series of models created upon suggested new technologies. Shoe marketing is a program of rifle shooting, not a scattergun pattern.

The report assumes that labor rates in a labor intensive industry is the chief difference and that therefore the solution lies in improvement of productivity rates through new and relatively more expensive technology. That might have won the last war, but not necessarily the current one.

Had the GAO report's historical approach continued into the present, it might have analyzed the forces which right now are eroding the last of the domestic industry's markets. The twin onslaught of cattlehide exports and growing shoe imports is losing the U.S. shoe industry further market share to such exporting nations as Italy, Spain and Brazil. Even as American producers turn to substitution as an answer to higher hide/leather prices, they are exposing their flanks to the nations that are strongest in the production of leather footwear. The great mass of American consumers has given ample evidence several times before that they want leather shoes -- not synthetics, regardless of price. Low-price plastics and high-price poromerics have each been boxed into a corner of the U.S. market.

Aside from the high costs of retooling the domestic shoe industry, redirection of the industry's manufacturing focus toward the new, computerized technologies may prove counter-productive if they are ever acquired. The new, automated technologies lend themselves to the manufacture of "chemical" shoes more easily sold to the poor populations of Asia and Africa than to the American consumer.

In its blind thrust toward glamor technologies, the GAO report appears to have overlooked lessons that might be learned within the domestic shoe industry itself. It might hunt for clues to survival and expansion among those companies which have carved a special market niche for themselves. Frye Boot, Acme Boot, Dexter Shoe companies have all beaten the trend in recent years. Sebago, Inc. seems to have achieved a formula for successfully exporting a product which had made its own market niche domestically.

And while the GAO staff interviews American shoe makers, it might remember that, in meetings held under the auspices of the Department of Commerce Footwear Industries Team, domestic manufacturers time and again identified their need as "marketing" information and expertise. This might prove a more fruitful area for solution hunting than transfer technologies. Also, a study of the Italian shoe industry might offer useful information on how an industry of small companies operating in the very antithesis of automation had extended its markets throughout the world.

Perhaps some of the GAO's difficulties stem from the Administration's hopes that a "solution" of the footwear industry's problems with imports will lead to simple answers for other U.S. import-impacted industries. Problems, solutions and technologies may have some common cross-industry characteristics, but in the main the shoe industry, at least, has its own unique problems which call for unique solutions. Nor is too much help likely to be derived from "early warning" systems of what the World Bank or other U.S. and United Nations agencies are doing in various industries. For the shoe industry, the immediate need is how to hold its current share of market before that goes the way the rest of it went in the last dozen years.

The GAO report further makes the mistake of accepting the Administration's "save the shoe industry" program as meaningful and walks right into the trap which helped re-direct foreign exporting nations into the last market stronghold of the U.S. footwear industry. The Orderly Marketing Agreements with Korea and Taiwan closed the wrong stable door: the one to the stall from which the horses had been stolen.

(In capping the Korean and Taiwanese producers with quota numbers which permitted wide flexibility to shift market emphasis, the OMAs encouraged the Far Eastern producers to switch into leather shoes and the higher-price ranges to make up for dollar losses in lost pairage of low-end footwear./ At the same time, the Administration's

failure to use the OMAs as a means of capping other exporting nations led to great increases in leather shoe pairage from Italy, Spain and Brazil in ruinous competition for the remaining market segment still held by American producers.

The GAO assumes that footwear material makes no difference in the markets, problems and solutions. Wrong! If the U.S. footwear industry is to be saved, it must be saved as a leather shoe industry. To do this, the GAO must face the problem of how to hold the U.S. shoe industry in place until it has time to reorganize itself -- perhaps to raise the capital and obtain the technology which may convert it to a capital intensive rather than a labor intensive industry.

First and foremost, a supply of hides/leather at stabilized prices is needed to keep the U.S. shoe industry from throwing away its last internal market. To do this, at a time when the cattle cycle is down in this country and most of the Western world, requires a domestic and international attempt to broaden the available market for cattlehides and thereby limit the wild price swings within the only large-scale free hide market in the world.

To accomplish this several things can be done: Our government must negotiate swiftly and determinedly either on a one-to-one basis or within an international forum for the opening of closed hide markets in developing countries such as Argentina, Brazil and India. At the same time, either by unilateral action or within

the framework of the same international forum, some further portion of the American shoe market must be reserved to U.S. producers. The creation of such a preserve would set up a negative or controlling feedback which would discourage the purchase of a substantial portion of the American hides now leaving the country and help create a hide/leather reserve within the country at stabilized prices.

Since speed is obviously needed, the means at hand could be the very OMAs which have thus far failed of their objective. If they are extended to nations such as Italy, Spain and Brazil, which now ship the lion's share (54% in 1978) of the leather shoes imported into the U.S., there is a possibility of holding the domestic industry long enough to set a longterm solution into motion.



Volume Footwear Retailers of America

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EDWARD ATKINS
EXECUTIVE VICE PRESIDENT

June 4, 1979

Mr. Donald Scantlebury, Director
Financial and General Management Studies Division
GAO
Room 6001
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Scantlebury:

This is in response to the recent submission of a draft copy of a forthcoming report to Congress on the U.S. footwear industry. Some of the points which follow are simply editing suggestions; others pose more substantive questions. In total I trust you will find them useful.

Since you have solicited comments from a number of persons, some of the answers sent you may result in changes from the draft copy. If you wish comment on such changes, please advise.

On page 3, the last line of the second paragraph refers to "constructions". These are not truly constructions but "product groupings". "Construction" is a manufacturing method or process utilized in making or assembling shoes.

On page 4, and again on page 17, the subject of "concentration" is dealt with. The trend to concentration is a highly important economic factor in the footwear industry. In our judgment it has accelerated noticeably since 1975. Every effort should be made to include more recent information.

Also on page 5 there is a reference to U.S. footwear manufacturers going into the retailing business. It should be understood that such developments did not come about as a result of import competition. Primarily such actions were undertaken to provide a manufacturing company with controlled distribution for some, if not all, of its factory production.

In citing reasons why retailers buy imported footwear, the capability of overseas manufacturers to handle short production runs is an important factor, and should be included.

On page 8 (table 1) and also on page 20 (table 5), does "athletic" footwear include basketball and tennis types, generally described as "canvas-rubber", and popularly known as sneakers?

Statistical tabulations show that consumption of men's and boy's footwear increased 25% between 1968 and 1977, while consumption of women's and misses footwear declined 20% in the same period. The improvement in footwear consumption by males can be explained by the relatively low per capita base to which purchases of casual, sports and other special purpose styles added significantly to individual footwear wardrobes. In the case of women's and misses footwear, the decline seems to have accelerated in the last four years for which data is shown. It was in that period that pants, jeans and extremely long skirts were in vogue, diminishing the visibility of shoes and therefore minimizing their fashion importance. These were also the years in which the popularity of sneakers grew so rapidly.

On page 13, I question that discount stores and supermarkets appeared because of the growth of footwear imports. Such retail establishments themselves generated the demand that caused imports to grow.

On page 19, the American Footwear Industries Association is characterized as the industry's principal trade organization. AFTA is the largest trade organization representing U.S. shoe manufacturers. It does not represent retailers or importers except to the extent that a manufacturing member engages in either or both of these businesses.

After reading pages 21 and 22 and table 6, one would not be able to perceive that the sharp decreases in production in North Eastern states shifted in part to a considerable number of "new" shoe producing states. It is suggested all shoe producing states be listed in the table.

On page 33 it should be pointed out that production of higher priced shoes in Taiwan and Korea is largely attributable to the institution of U.S. import quotas in the Orderly Marketing Agreements with those countries.

On page 56, the third paragraph on that page seems to state that formerly there only existed shoe manufacturers and manufacturing-retailers. Obviously a substantial portion of footwear was retailed through other channels, such as department stores, specialty stores, clothing stores, etc., etc.

I agree with the comments in your study of 12/31/78 that it was too soon to judge the value of the government's adjustment assistance program or the FIP project of the Department of Commerce. The respect and confidence in which I hold the GAO's work leads me to the hope that you will make such evaluations in the future.

This also prompts us to wonder as to the status of the GAO work on "early warning systems".

There seems to be a willingness in the draft to conclude that U.S. footwear consumption has reached a plateau and must be regarded as in a no-growth condition. Assuming the validity of the statistics, a judgment based on them is understandable but, if we are right in attributing so much of the decline in per capita consumption of women's footwear to fashion influences

(and women's shoes do account for about half of all footwear sales), then should the decline be considered an inevitable trend? In my judgment, it is quite likely that, when data is compiled for 1978 and 1979, a distinct upturn in per capita consumption of misses' and women's footwear will be discernible. This would again be attributable to a major change in apparel fashions and, therefore, not necessarily susceptible to the kinds of governmental programs now in place.

Very truly yours,


EDWARD ATKINS
Executive Vice President

EA:md

cc: Mr. R. W. Gutmann

Tom Biscardi
Vice President
Footwear Industry



United Machinery Group
Elliott Street • Beverly, MA 01915 • (617) 927-4200

June 27, 1979

Mr. Donald Scantlebury
Director
Financial and General Management Studies Division
United States General Accounting Office
Washington, DC 20548

Dear Mr. Scantlebury:

SUBJECT: General Accounting Office Draft Report, "Slow
Productivity Growth in the U. S. Footwear Industry--
Is This The Future of U. S. Manufacturing?"

Thank you for the opportunity to comment on the GAO
Draft Report. As mentioned in my letter of June 6th, we
hope our comments will be of assistance to you in giving a
more accurate reflection of the industry and its problems.

We are concerned that the report attempts to treat
an exceedingly complex industry in a simplistic manner.
Specifically we feel that there is insufficient recognition
that the footwear industry is a style industry, dependent on
rapid style changes for its existence. It must meet the wide
range of consumer's style preferences and foot shapes while
dealing with a wide range of materials: these materials not
only have irregular characteristics such as leather, they
range from rigid materials to soft pliable materials in 2D and
3D forms. To illustrate the complexity of the product mix,
random analysis of 13 different day sheets (daily production
runs) in a multi-unit company revealed that the 28,500 pairs
of shoes in the sample were distributed over 4,860 combinations
of last styles, sizes, widths and upper styles. Color treatments
and different component options would further increase the
number of combinations produced.

We are also concerned with the inference that those
outside the industry are aware of new technology and have
potential solutions which are not known to those of us serving
the industry. In contrast to others serving the industry, USM

has consistently spent 4 to 5% of its machinery revenue dollars on Research & Development directed at systems specifically for the shoe industry. We have investigated and experimented with technologies ranging from lasers to microelectronics. Where technically and economically practical new technologies are incorporated in our products. In actuality the introduction and diffusion of new technology in the footwear industry is severely limited by the characteristics of the industry, particularly the small size of individual sectors, and the requirements for reasonable payback to both the developer and the user. The introduction of new technology in the shoe industry and other industries would best be enhanced by shortened depreciation periods for tax purposes.

We continue to feel that efforts directed at the industry's problems are best overseen by knowledgeable industry personnel and in this regard we support the position advanced by the American Footwear Industries Association.

Attached are comments on specific sections of the report. We hope you will find these helpful.

Sincerely yours,



T. Bleasdale

mem

Attachment

GAO REPORT/USM COMMENTS

Page 2--"the actual footwear production process is essentially the same today as it was a hundred years ago."

This statement ignores the myriad advances now utilized because of changing technology in pneumatic, hydraulic and electronic controls as well as advances in chemistry, for example, the use of adhesives in lasting and sole attaching, and injection molding of the whole outsole.

To draw an analogy, it is similar to saying that wagons and automobiles are essentially similar forms of transportation because they have wheels.

Page 5--"industry has always been characterized by a high rate of turnover. One reason for this is that it requires very little capital to enter the manufacturing end-----once obligatory----leasing of necessary machinery has tended to put the small firm on a par with the larger corporation---"

The industry is primarily a style industry and small firms survive based on their ability to develop and keep a market niche. Several hundred thousand dollars is required to start up a shoe factory because of the investment in lasts, dies, upper materials, machinery, facilities, working capital, etc.

The obligatory leasing of machinery ceased in 1955. Many firms now own a substantial part of their manufacturing equipment.

Page 15--"footwear manufacturing productivity grew at an average annual rate of one percent during 1950-76; from 1971 to 1976 the growth rate was only 0.3 percent a year."

This statement ignores the relative volume, quality, and constructions of shoes produced during these time periods. In the sixties, over 200 million pairs of low-priced flatties were produced annually. This figure is close to 50 million today. Lawrence Maid who produced about 50,000 pairs a day is now producing about 10% of this amount. The standard flattie has been replaced by a wide range of styles in keeping with changing consumer demands.

In the meantime, there have been significant productivity advances. Lasting operations have been reduced 7 or more down to 2 or 3 depending on the construction. This means productivity increases of several hundred percent.

Injection molding, both direct and premolded, eliminates 15 to 35 operations reflecting a corresponding increase in productivity.

Page 24--"However, we believe that the disaggregated industry structure, the dependency of manufacturers on a relatively small group of machinery suppliers, and the low level of capital and technology applications with the resultant continued labor industry of the manufacturing process are all casual factors."

This statement goes to the heart of the report in that the conclusion contained in this sentence is the basis for the proposed cure. It is true that the industry is made up of many manufacturers and that there is a relatively small group of machinery suppliers, however, there has been an intensive effort to produce technology applications which would decrease the labor intensity of the manufacturing process. Insofar as the report relies on the premise that there has been minimal research and development aimed at reducing labor intensity, it is in error.

In Carl Kaysen's economic analysis of the USM antitrust case, United States v. United Shoe Machinery Corporation, Harvard University Press, 1956, he states on page 152 that a study in 1946 "shows that United had the 75th largest laboratory measured by number of technical personnel, in American industry. The only machinery manufacturer with a larger laboratory was General Motors..."

On page 150, he states "the most striking fact about United's research activities is its large scale. Total United research and development expenditures in fiscal 1950 were some \$4,300,000; total employment in research activity involved nearly 600 people."

We believe that in the face of such statistics, it is impossible to state that there was little effort to improve technology in the shoe machinery industry.

Page 27--"perhaps the necessary technology embodied in new equipment offering was either lacking or too costly."

USM is constantly exploring new technologies which might apply in the Footwear Industry. Unfortunately, the shoe factory product mix, working hours and production levels combine to severely restrict the amount of equipment expense which can be justified in a reasonable payback period. The recent advances in microelectronics are providing new opportunities in automation which heretofore were economically impractical.

Pages 28--"In 1953, the Justice Department initiated antitrust
29 action against USM. The case slowly progressed through the courts for sixteen years."

The antitrust action was commenced in 1947; in 1953 the Supreme Court ruled on the case. The initial decree was issued in 1954 and remained in effect until 1969 when it was modified by means of a consent decree (after substantial litigation) which will expire in 1981.

Page 29--"Until recently, this condition, along with substantial increases in the cost of bringing new technology to the market, inhibited the development and marketing of new process technology."

The antecedent of "this condition" is not clear from the text. If it refers to the significant market share of USM, we believe the statement is inaccurate. Through the years, USM has been a world leader in developing and marketing new process technology. If the GAO does have factual support for this statement, we would be pleased to review it. In regard to the shoe industry with its unique development problems, one cannot rely on the generality that market concentration leads to reduced development.

Page 29--"Since the early seventies, new technologies have begun to flow from both traditional and non-traditional suppliers."

It is obviously true that the traditional suppliers such as USM did not develop basic laser and computer technologies, but it is the traditional suppliers who have incorporated the new technologies

into shoe machinery and made them available to the domestic shoe industry. The CAMSCO "computerized gradomatic system" which is highlighted in the report, is to USM's knowledge used by only 16 large shoe companies. We are not aware of any other non-traditional supplier who has offered commercial new technology systems to the shoe manufacturer.

Page 29--"As table 8 indicates, labor requirements could be reduced through application of most of the listed technologies."

A generalization which ignores styling, a wide variety of materials, consumer demands, constructions, and payback criteria.

Page 34--"As technologies continue to become available, they will have to provide sufficient productivity increases to overcome the wage rate advantage exploited by producers in less developed countries."

The size of the gap continues to shift with currency fluctuations and the emergence of shoe manufacturing in new lower cost countries. Technology may never close the gap while meeting the constraints of the footwear consumer style demands.

The domestic manufacturer must recognize and capitalize on his inherent advantages.

- lower shipping costs
- less inventory in the pipeline
- quick response to changes in demand
- quick reaction to quality and other problems
- consistent quality product
- service to retailers and ability to interest through knowledge of domestic needs

He may also have to recognize that he may be unable to compete in some lower priced product categories.

Page 34--"Recent improvements in the process technology of labor intensive industries similar to footwear such as apparel and textiles are illustrative."

Page 35--"A parallel can be drawn between the current technical needs of the footwear industry and those of other industries such as aircraft components, machine tools, and automobile parts prior to the implementation of the above concepts."

The two sentences quoted above attempt to equate the footwear industry with the industries listed. In fact, there is little similarity to the apparel and textile industry and none to the aircraft, machine tool, and automotive. The first group deals with a range of sizes and materials but mostly with two dimensional applications. The second group deals with three dimensional applications, but using solid metal materials. USM is a manufacturer of each of the three products listed in the second group and is unable to utilize the technology it possesses from manufacturing these products in the manufacture of shoe machines. To restate the comments in the covering letter, the shoe machinery must be able to deal with an extremely wide range of soft, flexible materials each of which possesses unique characteristics shaping them into three dimensional objects of various styles, sizes and widths. This process is light years removed from producing aircraft components.

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