IV. U.S. GOVERNMENT PROGRAMS AND REGULATIONS THAT AFFECT THE MACHINE TOOL INDUSTRY

The U.S. Government has a number of programs and regulations that affect the machine tool industry. A brief description of their impact upon the industry's ability to meet emergency mobilization requirements is discussed below.

A. Trade Adjustment Assistance:

The U.S. Government is authorized by the 1974 Trade Act to provide trade adjustment assistance to firms and workers that are adversely affected by imports. Trade adjustment assistance to firms is administered by the Commerce Department and assistance to workers is administered by the Labor Department.

The Commerce Department, Office of Trade Adjustment Assistance has determined that the machine tool industry is being injured by foreign competition. Under the Commerce program, thirteen machine tool firms have been certified as eligible for assistance. These certified firms have received or are in the process of receiving a total of $120,000 in technical assistance, and it is possible that an additional $150,000 will be made available. The assistance provided is to help firms diagnose their problems and opportunities, and implement recovery strategies.

Under the Labor program, 56 petitions for trade adjustment assistance were received between April 1975 and March 1983. As of August 1983, the Department found that, in plants covered by seven of the petitions, 516 workers had been adversely affected by imports. In 33 of the petitions, the Department found that 2941 laid off workers had not been affected by imports as the primary cause for their unemployment. Between April 1975 and March 1983, the Labor Department paid $3.9 million in assistance to machine tool workers.

Impact: These programs have a minimal impact in preserving overall U.S. machine tool production capacity or in assisting the industry in meeting mobilization requirements.

B. Export Promotion

The Commerce Department has cooperated with the machine tool industry in a number of trade promotion activities. With the active participation of the NMTBA, the Department completed machine tool exhibits in Mexico, China, and Indonesia in 1983.

Impact: U.S. Government export promotion initiatives have had negligible impact on the industry's ability to preserve or expand capacity to meet mobilization requirements.

C. Export Controls

U.S. machine tool export controls are multilateral and are developed in consultation with our COCOM partners. (COCOM is a non-treaty voluntary export control organization that includes all the NATO countries plus Japan minus Iceland.)'

Although controls are multilateral, member countries occasionally have different interpretations of items on the COCOM list. In the machine tool area, the U.S. may tend to be more conservative than some other members. However, exact comparisons cannot always be made because machine tools manufactured in different countries are not always identified with precision and the COCOM list is subject to individual country interpretation. There have been allegations by the U.S. industry that other COCOM members allow machine tool exports to Soviet Bloc countries which cannot be exported from the U.S. The Commerce Department's Office of Export Administration notes that these allegations usually lack sufficient information for a follow-up investigation. Allegations that were investigated could not be confirmed.

Impact: U.S. export controls are not a significant detriment to the machine tool industry's ability to preserve or expand capacity.

D. Anti-Trust Laws

The Justice Department has informed us that "anti-trust laws are unlikely to impede continuing structural change in the U.S. machine tool sector through individual decisions to expand, merge, acquire or divest operations; only mergers and acquisitions that substantially lessen competition in some relevant market will be prevented." There are at present no pending Department of Justice or Federal Trade Commission suits involving the machine tool industry.

Impact: U.S. anti-trust laws do not hamper the machine tool industry's ability to make management decisions to preserve or expand capacity.

E. Machine Tool Trigger Order Program (MTTOP)

To help meet national security requirements, the Federal Government has in place the Machine Tool Trigger Order Program (MTTOP). The MTTOP is a cooperative effort between government and industry to cut mobilization lead-times by speeding delivery of machine tools essential to defense production.

Under the MTTOP, standby purchase agreements are negotiated between the Federal Government and individual machine tool manufacturers. Such agreements provide that in an emergency, a producer will manufacture particular machine tools, mainly catalog items, for delivery directly to defense contractors in a normal commercial manner.

The machine tool manufacturer and the government each have the right to withdraw from the agreement prior to the declaration of an emergency and the issuance of a Trigger Order. Once a Trigger Order is issued, a producer will be given priority access to materials and components to facilitate the private financing of production. If private financing is unavailable, the government may make advance payments to the producer, who will later repay the government.

The Federal Emergency Management Agency (FEMA) has overall responsibility for the MTTOP and is assisted in its efforts by the Departments of Defense, Energy and Commerce and the General Services Administration.

The utility of the Trigger Order Program is being eroded by loss of capacity of participating companies. In recent months, there have been major developments which have negatively affected the program. A manufacturer of numerically controlled (NC) punching machines consolidated two operations into one, thereby reducing capacity available to the program under mobilization. A leading domestic producer of NC turning machines discontinued production in this country and liquidated its assets at auction. A major domestic producer has decided to discontinue production of machining centers.

Impact: This program will assist the government in obtaining priority shipments in an emergency. However, it does nothing to preserve or expand domestic production capacity.

F. GSP (Generalized System of Preferences)

The GSP is authorized under Title V of the 1974 Trade Act and is a program of non-reciprocal tariff preferences granted by the U.S. to developing nations to assist their economic development. At present, machine tools (TSUS 674.30, 674.32, and 674.35) are included in the list of articles eligible for duty free treatment. The Office of the U.S. Trade Representative has informed us that GSP countries do not account for a major portion of the value of U.S. imports in any of these categories and that no petitions have been submitted requesting the removal of a country from GSP eligibility.

The following 1982 GSP trade information was provided by USTR.

TSUSA 674.30 Metal-cutting Machine Tools

1982 Total Trade $17.5 million
GSP Suppliers $ 1.1 million or 6.4 percent of the total.

The above noted GSP sales include machines valued at less than $2500. GSP sales of new machines valued over $2500 represented 6% of the value of imports under these TSUS categories and accounted for only 1.6% of domestic consumption in 1982.

TSUSA 674.32 Machine Tools, (Drilling and Milling)

1982 Total Trade $438.5 million
GSP Suppliers $56 million or 12.8 percent of the total.

TSUSA 674.35 Metal Working Machine Tools

1982 Total Trade $802.9 million
GSP Supplers $93.3 million or 11.6 percent of the total.

The above noted GSP sales include machines valued at less than $2500. GSP sales of new machines valued over $2500 represented 6% of the value of imports under these TSUS categories and accounted for only 1.6% of domestic consumption in 1982.

Impact: GSP has minimal impact on U.S. productive capacity.

G. Economic Recovery Tax Act (ERTA) and the Fiscal Responsibility Act of 1982 (TEFRA)

The Treasury Department has informed us that ERTA and TEFRA increased the total value of depreciation deductions and investment credits claimable on most new business investments. The result of these changes was a substantial reduction in the overall corporate tax rate applied to new investment for both the machine tool industry and many of its end markets. Furthermore, to encourage research and development, a tax credit equal to 25% of incremental R & D expenses is permitted through 1985.

Impact: The Treasury Department asserts that "the investment incentives provided by ERTA and TEFRA make it less costly for the machine tool industry to invest in new capacity and research and development. At the same time, similar reductions in capital costs should encourage investment in new plant and equipment by other industries, increasing the demand for machine tools."

H. Defense Industrial Equipment Center

Machine tools held by the Federal government would contribute to the

supply of tools in a national emergency. However, the majority of the 12,641 machines in the Reserve are old and would require extensive renovation to bring on line. (Less than 200 of these machines are numerically controlled.)

Impact: These machines add to the U.S. mobilization base. However, the extent of their utility is questionable.

NOTES TO CHAPTER IV

1. Specifically, these countries are France, West Germany, United Kingdom, Luxembourg, Netherlands, Belgium, Turkey, Greece, Japan, Norway, Italy, Denmark, Canada, Portugal, and the U.S.

This section provides a macroeconomic overview of market activity in the machine tool industry for the 1978-82 period, as well as a review of trends during the first six months of 1983.

Domestic Consumption, Shipments, Imports and Exports

Domestic consumption, producers' shipments, imports and exports for the 1964 - June 1983 period were reviewed to assist in the assessment of the domestic industry's ability to satisfy emergency requirements for metal-cutting and metal-forming machine tools. The Appendix contains tables on consumption, shipments, imports and exports for the period January 1978 through June 1983 for metal-cutting and metal-forming machine tools in the aggregate and for the specific 18 categories under investigation. Figure V-1 graphically portrays the considerable fluctuation in domestic consumption and shipments of machine tools in the period from 1964 to 1982.

A. Domestic Consumption and Shipments

Domestic consumption and shipments tracked each other closely in the period from 1964 to 1982. Peaks were witnessed in 1967, 1974, and 1980, with corresponding troughs in 1971, 1976, and 1982. These peaks and troughs reflected cyclical trends in the overall economy, albeit in an exaggerated manner. Machine tool demand served as a leading indicator of recession and a lagging indicator of economic recovery.

Both shipments and domestic consumption reached 19-year highs in 1967 and record lows in 1971. Shipments in 1982 dropped to their lowest levels witnessed since 1971, while U.S. consumption declined to a level approaching that for 1977. During the first six months of 1983, total U.S. shipments of machine tools declined by about 10,000 units below levels for the first six months of 1982.

B. Exports

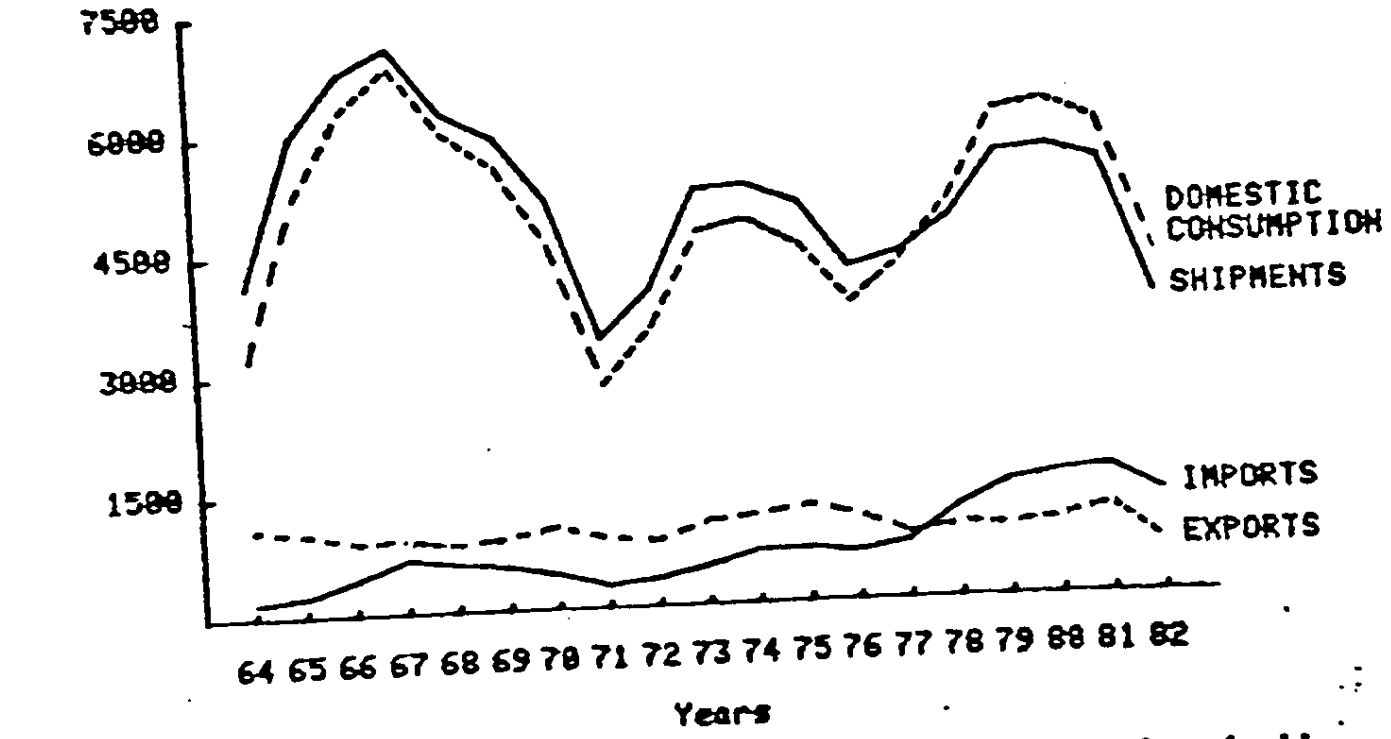
The U.S. lost its trade surplus in 1977, and by 1982, the dollar value of exports was only about half that of imports. In absolute terms, exports declined from 40,693 in 1964 to 9,517 units in 1982, a 77% drop. The drop in value of exports was also pronounced, though not quite as extensive as the unit drop. During the first six months of 1983, the U.S. exported only about half as many machine tools compared with the first six months of 1982. In view of the above, it is apparent that the U.S. position in foreign markets has become tenuous.

C. Imports

Overall imported units as a percentage of domestic consumption

Figure V-1

METAL CUTTING & METAL FORMING MACHINE TOOLS, 1964-1982. *
(millions of constant dollars, 1982=100)



* Includes new, used and rebuilt equipment and machine tools of all values.

Sources: U.S. Department of Commerce, Bureau of the Census, and
U.S. Department of Labor, Bureau of Labor Statistics.

increased steadily throughout the last decade. In 1982, import penetration for the metal-cutting category was highest for boring and gear cutting machines (79% each), lowest in the station-type (6%), and 47% for metal-cutting tools overall. In 1982, for the metal-forming category, import penetration was highest for forging machines (52%), lowest for presses (19%), and 25.7% for metal-forming tools overall.

In absolute terms, imports increased from 32,077 machines in 1978 to a high of 48,352 machines in 1980. Since that time, the number of imported machines has declined. During the first six months of 1983, the U.S. imported 12,909 machines compared with 21,071 during the first six months of 1983. Furthermore, imports as a percentage of domestic consumption declined from 42.2% in the first six months of 1982 compared to 37.4% in the first six months of 1983 for the overall industry.

A comparison of import share by country in terms of units and value (1978-1982) is shown in Figures V-2 and V-3, respectively. Specifically, these figures indicate that:

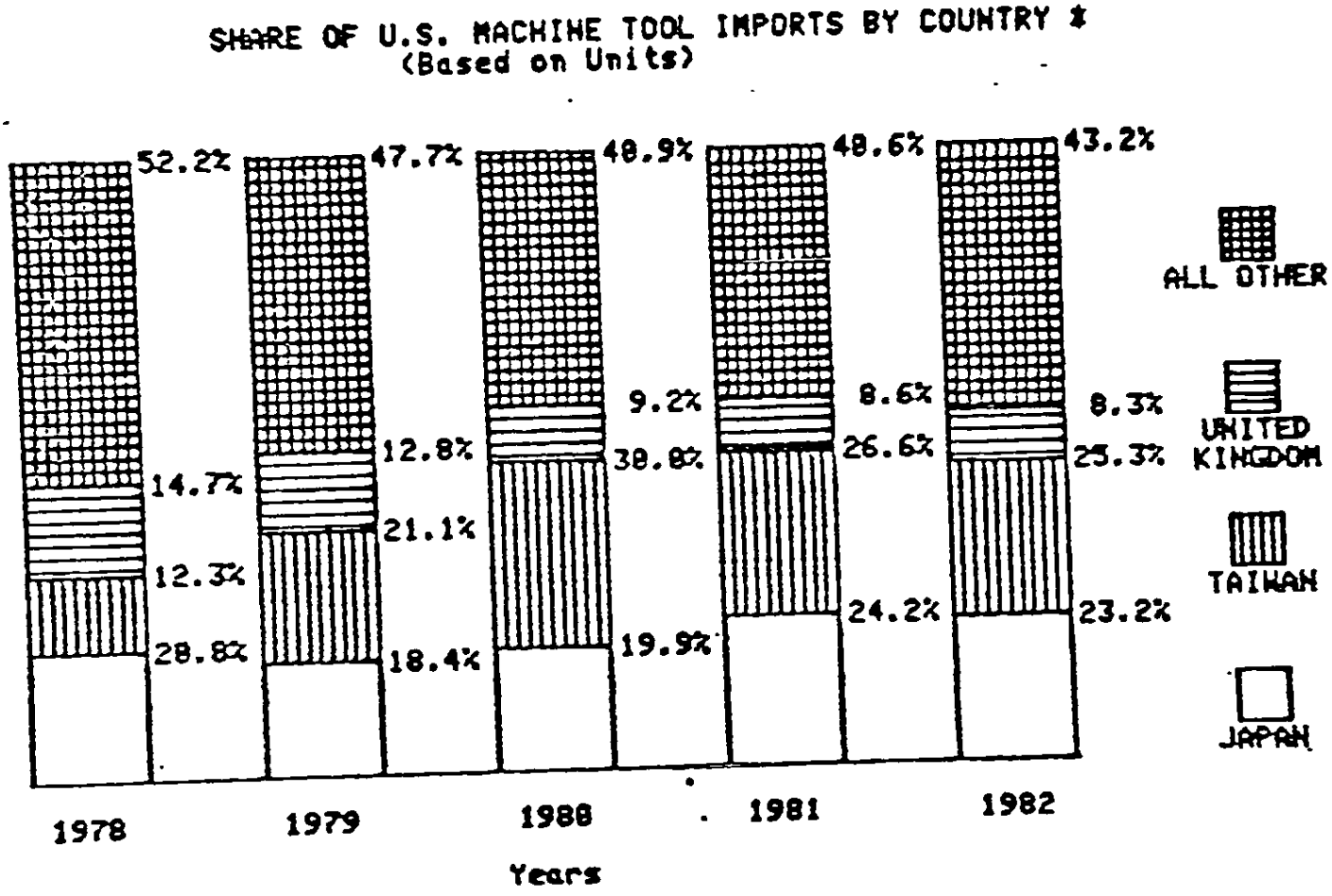
- o Japan, though slightly outdistanced by Taiwan in the absolute number of units imported, is by far the dominant force in value. Imported Japanese machine tools have accounted for an increasing percentage of import value, currently about half the value of all imports.

- o Although Taiwan is the number one source of machine tool unit imports, its products tend to be less expensive standard units and account for a much lower percentage of import value.

- o West Germany is an exporter of more specialized technically advanced tools. While its imports account for the second highest level of imports by value, it is not within the top three importers by units.

- o The United Kingdom ranks third in both the number and value of machine tool imports. Its share of the market by both measures has declined over the past five years.

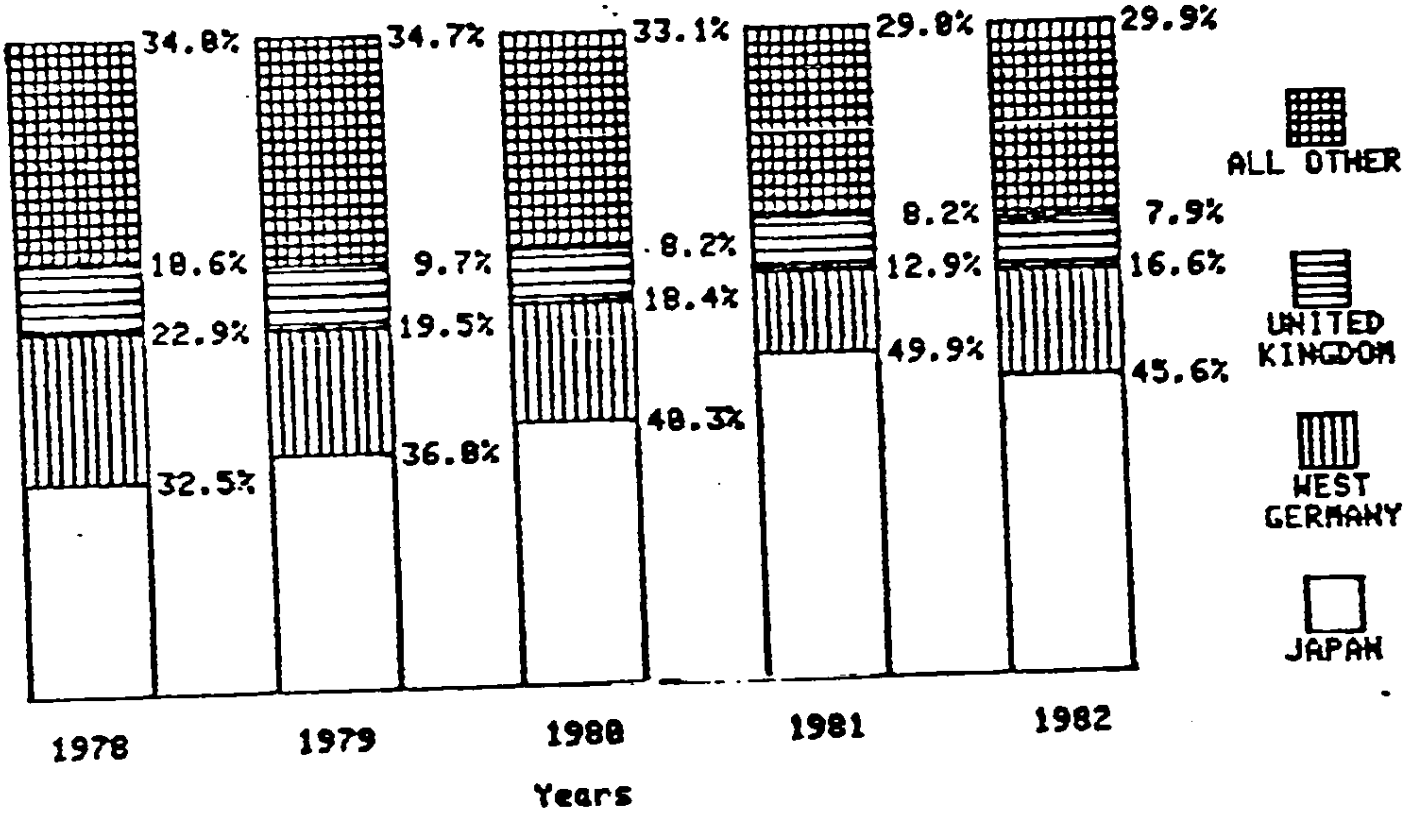
Figure V-2



* Imports from three leading suppliers and "all other" countries

Source: U.S. Department of Commerce, Bureau of the Census, IM145.

Figure V-3



* Imports from three leading suppliers and "all other" countries

Source: U.S. Department of Commerce, Bureau of the Census, IM145.

VI. NATIONAL SECURITY ASSESSMENT

The national security assessment for this investigation is based on a two-step process: 1) a determination as to whether the direct defense, indirect defense and essential civilian machine tool requirements for a three year global war preceded by a one year mobilization can be met by a combination of domestic production, inventories and reliable foreign supplies; and 2) in those cases in which requirements cannot be met by total available supply, a determination as to whether imports are a principal cause for the shortfall.

In order to perform this two part review, the following steps were taken:

- Scenario: NSDD-47 was approved by the President on July 22, 1982. It states that. . . "It is the policy of the United States to have a capability to mobilize industry in order to achieve timely and sufficient production of military and essential civilian material needed to prosecute successfully a major military conflict, to lend credibility to national strategic policy, and to respond to national security emergencies." On the basis of this policy directive, the Emergency Mobilization Preparedness Board scenario for a three year war preceded by a one year mobilization was selected as the basis for economic, industrial mobilization, geopolitical and national security determinations.[1]

- Requirements: Based on the above noted scenario, FEMA generated machine tool requirements for the mobilization year and each year of the conflict.

- Supply: In order to estimate total available supplies to meet the projected requirements, DOC conducted a survey of domestic machine tool manufacturers and importers to determine surge production capabilities and available inventories. Machines held in reserve by the Defense Department were also included as part of the domestic supply base.

- Foreign Availability: An assessment regarding availability of imports was made based on conditions specified in the scenario and on inputs from the relevant Federal agencies and departments.

A. Mobilization Requirements

The Federal Emergency Management Agency (FEMA) was tasked to provide machine tool requirements to meet the needs of industry during the

scenario of a three year global conflict preceded by a one year warning period, based on projected increases in defense expenditures as well as production to meet required civilian needs.

The Department of Defense (DOD) provided FEMA with military expenditure patterns for 50 DOD budget categories to meet specified mobilization requirements for wartime conditions set forth in the scenario. In addition, econometric studies were conducted by FEMA in order to determine the level of civilian consumption anticipated due to the mobilization requirements. In sum, these are the final demands for each of the 68 key industries' output.

The DOD expenditure patterns and the civilian consumption patterns were then converted into a form conducive to capital input-output analyses.[2] Commerce provided FEMA with existing data on the machine tool base and the output levels associated with the existing machine tool base. Using this information, FEMA calculated changes in capital stock necessary to meet the projected requirement levels of output for each sector.

FEMA set forth its mobilization requirements in terms of metal-cutting and metal-forming tools. These requirements were then disaggregated by FEMA into the 18 machine tool categories under consideration in this investigation as shown in Table VI-1. To accomplish this disaggregation, FEMA utilized Commerce Department data on average yearly machine tool consumption by each of the 18 categories and integrated this information with the average yearly industry (68 industries) investment totals for the two major machine tool categories (metal-cutting and -forming). The resulting ratios provided by the matrix were then utilized to generate machine tool requirements during the mobilization and conflict years.

In order to test whether civilian requirements were excessively inflated during a period of crisis, FEMA reduced personal consumption expenditures to zero. This experiment was devised in order to determine whether civilian austerity would significantly reduce the demand for machine tools. The FEMA experiment demonstrated that even the assumption of zero personal consumption expenditures would have only a minimal impact on machine tool requirements.

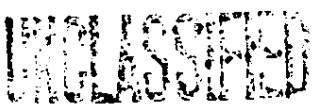
The requirements generated by FEMA anticipate that metalworking industries (the principal users of machine tools) double their capacity. Two-thirds of this expansion is anticipated to take place during the first two years. Under this scenario, GNP is projected to grow about 40% above the 1982 level by the end of the second year of the war.

Table VI-1

SECTION 232 INVESTIGATION
INTO MACHINE TOOLS
MACHINE TOOL MOBILIZATION REQUIREMENTS
BY MACHINE CATEGORY
(NUMBER OF UNITS)

METAL CUTTING MACHINE TOOLS	MOB YEAR	WAR YEAR 1	WAR YEAR 2	WAR YEAR 3
BORING MACHINES	4560	4406	2765	1378
DRILLING MACHINES	12172	11809	7252	4091
GEAR CUTTING MACHINES	1711	2063	1544	994
GRINDING MACHINES	54201	52014	34941	19559
HORIZONTAL NC TURNING	12854	11927	7793	4025
VERTICAL NC TURNING	1717	1996	1442	861
NON-NC TURNING MACHINES	58633	46627	27570	15044
MILLING MACHINES	38830	22538	10251	2991
MACHINING CENTERS	13271	14010	9763	5652
STATION TYPE MACHINES	3521	3297	1730	1023
OTHER METAL CUTTING	39599	37806	12310	13059
TOTAL METAL CUTTING MACHINES	241068	208492	117362	68677

METAL FORMING MACHINE TOOLS	MOB YEAR	WAR YEAR 1	WAR YEAR 2	WAR YEAR 3
NC PUNCHING & SHEARING	1559	1153	514	195
NON-NC PUNCHING&SHEARING	18326	14165	7154	3078
NC BENDING & FORMING	855	749	434	248
NON-NC BENDING & FORMING	18707	15262	8643	4004
PRESSES, EXCEPT FORGES	22128	18546	7734	4139
FORGING MACHINES	1507	1781	1141	693
OTHER METAL FORMING	13129	12585	6832	3303
TOTAL METAL FORMING MACHINES	76212	64241	32451	15659



B. Domestic Availability of Machine Tools Under Mobilization Conditions

As a part of this investigation, the Department of Commerce conducted a survey of U.S. machine tool manufacturers and a survey of U.S. importers to help determine the U.S. ability to meet its mobilization and wartime requirements through inventories and surge production. The statistical analysis of the survey results was performed by the DOC's Bureau of Industrial Economics.

1. Machine Tool Producers Survey

The survey of domestic machine tool manufacturers provided the Department with information that was essential in determining the availability or supply of machine tools in a mobilization. Its most significant elements include:

- Changes in maximum production capacity for each category of machine tool under investigation for the period 1978-82. This information assisted the Department in assessing the impact over time of imports on the U.S. ability to manufacture machine tools under emergency conditions.
- Anticipated changes in production capacity for the 1983-85 period.
- Lead times necessary for the expansion of production capabilities in excess of current levels. This information was used to project maximum production capabilities during the mobilization year and for each year of the projected conflict.
- Possible impediments to further expansions of production.
- Inventories being held by domestic producers that add to the total available supply of machine tools in a crisis.

a. Survey Responses and Methodology

A total of 192 domestic manufacturers of metalworking machine tools responded to the survey. Survey respondents reported total 1982 shipments of new, complete machine tools (valued at $2,500 or more) totaling 26,135 units valued at $2,913.1 million. This represents 45.7 percent of the total units reported by the U.S. Bureau of the Census in 1982 and 79.3 percent of the value. This response rate provided a comprehensive overview of the industry. Respondents not reporting capacity information were removed from the sample resulting in coverage of 25,884 units (45.2 percent of Census) and $2,873.0 million (78.2 percent of Census). The