Contents

Glossary

Bit. A unit of information consisting of a binary digit that can have one of two values—e,g., “O” or “l, ” “$+ “ or “ – “. Digital circuits operate by manipulating bits which are represented by voltage levels.

CAFE—Corporate Average Fuel Economy. Fleet-weighted miles per gallon ratings for a manufacturer’s automobile production, Standards through 1985 for all cars sold in the United States have been set under the Energy Policy and Conservation Act,

Chip. A small piece of a semiconductor material such as silicon on which an integrated circuit has been fabricated.

Competitiveness. The relative ability of firms located in a particular country to develop, produce, and market goods or services of a particular type in competition with firms in other countries. As used in this report, costs of production are the most important single factor in determining competitiveness.

Continuous casting. A process for solidifying steel or other material in the form of a continuous strand rather than individual ingots.

Digital. Refers to electronic circuits or devices, the inputs and outputs of which are nominally discrete voltage levels. Analog or linear circuits, in contrast, have inputs and outputs that vary continuously over a range of voltages, Virtually all computers process informat ion in digital form.

Dumping. The sale of exported goods at less than the price charged by the manufacturer in his home market, or in some cases at less than cost. Dumping is restricted under the GATT as an ‘‘unfair’ trade practice.

DR—direct reduction. A family of processes for making iron from ore without exceeding the melting temperature. No blast furnace is needed.

Emissions. The most important contributors to air pollution from the crankcase and exhaust of automobile engines are carbon monoxide, hydrocarbons, and nitrogen oxides, The latter two can combine to produce photochemical smog.

EPCA—Energy Policy and Conservation Act. Passed in 1975, it set fuel economy standards for automobiles and also contained provisions for controlling oil prices.

Escape clause. Section 201 of the Trade Act of 1!374, which permits temporary restrictions on imports, in the absence of prohibited practices such as dumping, if sudden surges of these imports substantially injure a domestic industry.

Full costs. ‘Fixed plus variable costs. A full cost pricing strategy aims to cover all costs—those independent of the volume of production (fixed), as well as those depending on volume (variable costs).

GATT-General Agreement on Tariffs and Trade. An international organization, based in Geneva, that provides a forum for trade negotiations. Member countries are committed to reducing the barriers to world trade, and expanding its volume.

GDP—gross domestic product. The total value of goods and services produced by an economy over a given period, usually 1 year.

GNP—gross national product. GDP, plus the income accruing from foreign investment, less payments made to investors in foreign countries.

Hardware. The physical components of a computer system, such as the processor itself, input/output devices, and storage units,

IC—integrated circuit. An electronic circuit made by fabricating components such as resistors, capacitors, and transistors on a single piece of a semiconductor material, usually silicon.

Integration. See vertical integration.

ITC—International Trade Commission. An independent agency of the U.S. Government which investigates and rules on trade-related matters, primarily concerned with imports.

Lithography. Processes similar to printing used in fabricating integrated circuits, Lithography is used to expose chemical resists as part of the process of laying out circuit patterns. Light, X-rays, or electron beams can be used. All present commercial processes use light. The resists are analogous to the light-sensitive emulsions of photographic film,

Mainframe computer. One that typically costs over $100,000 and requires trained operators, special facilities, and permanent installation,

Marginal costs. The incremental costs associated with an increase in volume of production.

Market promotion policy. A public policy directed at a specific market—as for labor or capital. Generally intended to improve the operation of that market,

Microcomputer. A computer based on a microprocessor and using other integrated circuits

for support functions, or, alternatively, containing all functions on one chip (single chip microcornputer).

Microprocessor. An integrated circuit that can serve as the processing unit for a digital computer. Also used to provide particular digital logic functions as an alternative to custom-designed integrated circuits. Microprocessors vary in their word lengths—the number of bits in the words they manipulate-hence, 4-bit, 8-bit, etc.

Minicomputer. A computer that typically costs under $100,000 and does not need specially trained operators or special facilities.

Minimill, A small nonintegrated steel mill, typical-Iy scrap-based and using electric furnaces to produce a limited range of products.

MITI—Ministry of International Trade and Industry, Japan.

MOS—metal oxide semiconductor. Refers to both transistors and integrated circuits. MOS ICS are unipolar as opposed to bipolar; they are denser and dissipate less power than bipolar ICS, but are usually slower. The most widely used RAhfl's and microprocessors are MOS devices.

MTA—Multilateral Trade Agreement. The MTA represents the outcome of the most recent GATT negotiations on reducing trade barriers, known as the Tokyo Round.

Nonintegrated. Steelmaking firms that do not reduce iron from ore, but typically make finished products starting with steel scrap.

OECD—Organization for Economic Cooperation and Development. An international organization composed of industrial countries. Its aims are to encourage economic growth and employment and to promote the development of industrializing countries.

Offshore manufacture. The production of parts and components, and/or their assembly, in plants located in foreign countries, followed by shipment back to the home market or to third country markets.

OMA—orderly marketing agreement. A negotia ted limit on imports from a particular country, such as currently exists for color televis ion receivers from Taiwan and South Korea.

Peripherals. Computer hardware other than the processing unit itself. Typical peripherals are terminals, card readers, and auxiliary storage units.

plug compatible. Computer equipment—both processors and peripherals—that can be plugged directly into an IBM system.

Processor. The portion of a computer system that executes the program.

Productivity. Output per unit of input—used in this report exclusively to mean labor productivity, the physical quantity or value of goods produced per unit of labor input. Labor input is usually measured in worker-hours.

Quality. A statistical measure of the extent to which devices, products. or systems meet design specifications. For electronic components, quality can be expressed as defect fraction, For steel or automobiles, quality has a more complex meaning. For steel it might be expressed in terms of surface characteristics, physical properties, or chemical composition. For automobiles, quality could be measured by the number of defects present after final assembl y—e.,g., runs or orange peel in the paint, loose or missing parts, operating defects, misalined trim.

RAM—random access memory. An integrated circuit which functions as read/write memory for a digital processor. Each memory location can be addressed directly (random access) and its contents read and/or changed (written).

Reliability. A statistical measure of the extent to which devices, products, or systems perform satisfactorily in service—i.e., without failures. Reliability can be measured as mean time between failures-commonly used for electronic components such as ICS or systems such as computers. An essentially equivalent measure of reliability is the average number of failures over time or over some other measure of usage—for automobiles, reliability might be measured as failures per 10,000 miles. In a complex system such as a computer or an automobile, failures would often be further classified by type. For example, failures that prevented operation could be distinguished from those that only impaired operation,

Semiconductor. Electronic devices such as transistors or integrated circuits based on silicon or other materials that have electrical conductivities intermediate between insulators such as glass and conductors such as metals (the term semiconductor also refers to the materials—e.g., silicon—themselves).

Software. Computer program. Can also refer to other carriers of information such as books, film, phonograph records,

Solomon Plan. A program for revitalizing the American steel industry prepared by a commission headed by Anthony Solomon. The commission's report was issued in 1977.

Spark ignition engine. The conventional type of internal combustion engine used in most automobiles.

Teletext. A system for sending graphic messages (pictures and/or text) over hard-wired lines (telephone or cable) to home television receivers. Similar to videotext, which uses a broadcast signal.

Tonne. A metric ton, 1,000 kg or 2204.6 lb.

TPM—trigger-price mechanism. Sets a floor price for steel imports into the United States. The price is based on the production costs of the low cost producer (Japan), plus transportation charges, adjusted for currency fluctuations. Steel imports entering the United States below this price automatically "trigger" an accelerated antidumping investigation.

Transistor. An active semiconductor device that can function, for example, as an amplifier. Transistors have replaced vacuum tubes in many applications.

VCR—video-cassette recorder.

Vertical integration. An indication of the extent to which a given firm produces the materials, components, or subsystems that are inputs to its end products. A highly integrated automobile firm might produce its own glass, steel, spark plugs, radios, An integrated steel firm begins by making iron from ore, then converts the iron to steel.

VHSIC—Very High-Speed Integrated Circuit. Name given to a U.S. Department of Defense R&D program aimed at military needs for very large-scale integrated circuits. The designation refers to the high speed required for applications such as signal processing.

Video disk. Refers to systems for playing back video pictures from information mechanically encoded on a spinning disk. Analogous to a phonograph record.

Videotext. A system for broadcasting graphic messages (pictures and/or text) to home television receivers. Similar to teletext which is hard-wired.

VLSI—very large-scale integration. Refers to integrated circuits with of the order of 100,000 circuit elements.

VRA—voluntary restraint agreement. A negotiated limit on imports similar to an OMA. VRAS on steel negotiated by the United States with the EEC and Japan were in effect from 1969 to 1974, They limited steel imports to specific tonnages plus 5 percent annual growth,