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# GLOBAL ELECTRONICS

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## COMPUTER PRODUCTION LABOR

Computer manufacturers, like the owners of auto, textile, and virtually every other kind of factory, are using computer technology to reduce their labor needs. The *Boston Globe* (September 10, 1985) cites Kenneth Olson, head of the Digital Equipment Corp. (the world's second largest computer firm), "We doubled our size in dollar volume in the last three years with a decrease in manufacturing volume." DEC says that it now takes 20 to 25 hours to make a printed circuit board that five years ago took 100 hours. The company expects to reduce its manufacturing workforce by 5,000 from its peak of 28,000, over a three to five year period.

The *Globe* reports that production line labor accounted for \$750 of the \$43,437 cost of building a super-minicomputer in 1982. In 1985, it estimates that direct labor costs \$462 for a machine now costing \$28,030 to make.

Though individual companies may be cutting their production workforce, computer manufacturing employment, as well as the high-tech workforce in general, is growing in the long run. The market is likely to keep expanding, for the industry is governed by its own "Parkinson's Law." Major customers are perfectly willing to maintain or enlarge their spending levels, buying more sophisticated and larger computers rather than reducing their dollar-value purchases to obtain machines with the same capabilities as their older, more expensive equipment.

Meanwhile, DEC is planning to manufacture computers in Mexico for the Mexican and Spanish-speaking Latin American market. Digital decided to set up shop in Chihuahua after IBM successfully pressured the country to loosen its rules on foreign operations. The plant, which will employ 100 to 200 people, will also ship assemblies to Puerto Rico for inclusion in DEC U.S.-market machines. (*Boston Globe*, reprinted in *San Jose Mercury News*, September 18, 1985)

## INCOME PRIVACY THREATENED

Ostensibly to catch welfare cheats, the Reagan administration has authorized the Internal Revenue Service to share its computerized income data with state agencies responsible for checking welfare, food-stamp, and other benefits eligibility. The computer network is called Statewide Income and Eligibility Verification (SIEV), and critics worry that it will "leak like a sieve," putting confidential data in the hands of the wrong people. (Knight-Ridder, printed in *Peninsula Times Tribune*, September 12, 1985)

## LABOR RIGHTS PROVISIONS

A coalition of labor and human rights groups may win Congressional approval for legislation preventing the Overseas Private Investment Corporation from insuring new investments in countries denying fundamental labor rights. OPIC, a U.S. government agency, provides the overseas subsidiaries of U.S.-based firms with insurance against war, civil unrest, expropriation, and currency inconvertibility. Numerous U.S. electronics plants are currently backed by OPIC.

If the measure passes, new subsidiaries in several countries with such investments would be ineligible for such coverage. In many cases, this would discourage new operations. *Fortune* (September 2, 1985) reports, "OPIC would rely on State Department reports to determine whether a given country met all the labor rights requirements. If the House bill becomes law, it's unlikely that OPIC could insure investments in South Korea, Haiti, or the Philippines."

Following approval in a House Foreign Affairs subcommittee, the labor rights provision - authored by Howard Berman (D-California) - is likely to be included in the final bill. Berman told *Fortune*, "OPIC will go out of existence if it's not reauthorized, and that gives us lots of leverage."

Berman's proposal, as well as conditions that Congressman Otis Pease (D-Ohio) inserted into the Generalized System of Preference for imports, represents the most sensible approach to the threat to the American economy and American workers posed by the artificially low wages earned by workers in many Far Eastern and other Third World countries. It is likely to benefit workers in those countries as well.

## THE BOOK IS IN THE MAIL

Finally, *The High Cost of High Tech: The Dark Side of the Chip*, is available. PSC is awaiting its first shipment from the publisher, Harper & Row. Written by *Global Electronics* editor Lenny Siegel and John Markoff, technology writer for the *San Francisco Examiner*, the book should be found soon in most major bookstores.

The book may also be ordered from PSC at its retail price, US\$16.50 plus shipping and taxes. The sales tax, for purchasers within California, is \$1.07, except for Santa Clara County, where the tax is \$1.17. Postage and handling, at book rate, is \$1.25 within the U.S. and US\$1.50 abroad. We will be glad to bill extra postage charges to those who wish to receive their copies via air mail. Checks and money orders should be made out to the Pacific Studies Center.

## ECONOMISTS CHALLENGE TWO-TIER THEORY

Harvard economist James Medoff and Paul Strassman, of the Xerox Information Systems Group, have published two papers challenging the assertion that the U.S. workforce is becoming polarized economically. In a November, 1984 survey of companies belonging to the Computer and Business Equipment Manufacturers Association (CBEMA), Medoff and Strassman found that most wage and salary earners were concentrated in middle-range pay levels. 35.9% of the employees earned 81% to 120% of average (mean) pay. 25.4% earned 61% to 80%, while 15.2% earned less. They conclude, "the computer industry can be characterized as having a solid 'middle class' compensation profile."

The economists report that none of the firms surveyed employ workforces corresponding to the two-tier pattern - that is, without many mid-level workers. However, they note, "There are isolated instances where a 'two-tier' high-tech wage and salary structure can be found. Such cases involve mostly manufacturers of components or of sub-assemblies who depend upon others in the economic chain to deliver high-tech products to their ultimate customers." ("About the 'Two-Tier' Work Force and Growth of Low-Pay Jobs," March, 1985, available from CBEMA, 311 First St. NW, Washington, DC, 20001.)

Medoff and Strassman do not offer any data to indicate whether the computer industry pay structure is leveling over time, or polarizing. This would be valuable, since the two-tier analysis is generally considered a trend away from America's existing middle-class pay structure. Within high-tech industry, manufacturers of large computer systems - IBM, DEC, etc. - are those most likely to retain a flat "compensation profile," since they do little mass production. At most of those firms, skilled labor is still a major requirement.

However, IBM's personal computers and microcomputer disk drives are assembled by subcontractors with a few well-paid professionals and numerous low-wage production workers. Semiconductors, the building blocks of all high-tech equipment, are made by companies with a two-tier domestic workforce. Of course, if foreign assemblers are included, there is a large, extremely low-wage third tier. Therefore, a complete profile of their compensation structure would show a r in the middle.

Medoff and Strassman's paper, as well as another report by Medoff ("The Structure of Hourly Earnings Among U.S. Private Sector Employees: 1973-1984," December, 1984) argues that the U.S. workforce as a whole retains a large, relatively constant middle-pay component. Medoff points out that this finding "is not inconsistent with evidence that inequality in the distribution of family income in the U.S. has become greater."

## NUCLEAR WAR FALSE ALARMS

The Accidental Nuclear War Prevention Project (c/o Dean Babst, 7915 Alta Mesa Way, Citrus Heights, CA, 95610) has obtained new data from the Pentagon to bolster its argument that the U.S. should not automate its missile-launching in response to a perceived Soviet attack. Less complete data appeared in a 1980 report by Senators Gary Hart and Barry Goldwater describing false alarms at the North American Aerospace Defense Command (NORAD) in 1979 and the first half of 1980.

The Prevention Project has received and circulated an Air Force letter listing "emergency action conferences" from 1977 through 1983. Such conferences range from what we have designated level 1 (routine missile display conferences) through level 3 (threat assessment conferences). Threat assessment conferences involve senior U.S. military officers, such as the Chairman of the Joint Chiefs of Staff. In 1980 at least, such conferences occurred as U.S. nuclear forces went on alert - for example, B-52 bomber crews rushed to their planes and started their engines.

Year	Level 1	Level 2	Level 3
1977	1567	43	0
1978	1009	70	2
1979	1544	78	2
1980	3815	149	2
1981	2851	186	0
1982	3716	218	0
1983	3294	255	0

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## CALIFORNIA STILL UNITARY

Despite a powerful lobbying effort by foreign corporations, the state of California failed to eliminate the unitary method for taxing corporate profits, in which firms pay state taxes based upon the percentage of their global business done within the state. The state legislature adjourned in September without passing legislation on the subject, which will of course come up again in 1986.

Domestic electronic firms lobbied against the measure, by San Jose State Senator Alfred Alquist, because it would have benefited their foreign competitors, while offering U.S.-based companies little or nothing. To emphasize its concern, IBM, one of the largest employers in Alquist's Silicon Valley district, announced plans to hire 1,000 new workers in Tucson, Arizona, instead of San Jose (*San Jose Mercury News*, August 16, 1985).

Foreign lobbyists probably would have prevailed, but Assembly Speaker Willie Brown - a liberal black from San Francisco - refused to move the unitary tax bill forward unless legislators and Republic Governor George Deukmajian promised to enact legislation designed to divest state funds from corporations doing business in South Africa.

## INDIA LIBERALIZES

Rajiv Gandhi, India's technology-oriented Prime Minister, has established new policies designed to stimulate the South Asian countries anemic computer industry. Though Indian electronics production totalled only US\$1.6 billion in 1984, Gandhi wants India to produce \$8 billion worth of electronic equipment each year by 1990, upping the annual output of computers from 5,000 currently to 100,000 in that year.

Gandhi, who personally likes working with computers, has taken over India's Department of Electronics. The government has liberalized its rules on both electronics imports and foreign investment in high-technology production. In addition, India has signed a memorandum of understanding to assure the U.S. government that it will not leak advanced Western technology to the Soviet Union, but *Electronics* (September 2, 1985) reports that snags have appeared in India's attempt to implement that agreement.

## PHILIPS - THAILAND

Philips, the Dutch electronics giant, is a major force in the computer industry in Thailand. Not only does it have a reported 50% share of the minicomputer workstation market there, but it is manufacturing personal computers in Thailand for the local market. It is even developing a Thai-language microcomputer.

## EUROPEAN STAR WARS RESEARCH

The government of France, hostile to the Reagan Administration's "Star Wars" Strategic Defense Initiative (SDI), is proposing a cooperative European research program as an alternative to the billions of dollars in contracts that the Pentagon is dangling before Western high-tech companies. Known as Eureka, funding for the program could reach several hundred million dollars or more. A group of seven Italian high-tech companies has formed a consortium called CITES to bid for SDI contracts, and it is prepared to seek Eureka funding as well (*Aviation Week*, July 22, 1985). However, *Electronics* (July 22, 1985) suggests, "most European electronics industry officials do not believe that Eureka and SDI will be able to coexist in Europe."

## CIRCUIT BOARD AUTOMATION

Aerospace contractor Hughes Aircraft has developed a software package to automate the assembly of the printed circuit boards that it builds into military electronic systems. Unlike the producers of personal computer circuit boards, which need thousands of copies of identical boards, Hughes requires flexibility, for designs are frequently changed. Hughes' software determines the steps necessary to assemble a given board, and it guides production workers, each at a computerized work-station with foot-pedals for hands-off control, through the process. (*Aviation Week & Space Technology*, September 2, 1985)

## ELECTRONIC CHEMICALS

Market research firm Frost & Sullivan reports that the value of materials used in semiconductor manufacture approximates 11% of semiconductor shipment value, or about \$2.5 billion a year. In 1983, it reports, chemical consumption in wafer fabrication reached \$355 million. Anticipating, rather optimistically, that worldwide semiconductor will double from 1984 to 1988, it projects that wafer fab chemical consumption will surpass \$1 billion in 1988.

### A MARXIST VIEW OF AUTOMATION

Tessa Morris-Suzuki, in "Robots and Capitalism" (*New Left Review*, September-October, 1984), offers some refreshing insights on current trends in the utilization of technology. She draws upon comments by Ernest Mandel, who argued that fully automated production is impossible under capitalism because there is no way to create surplus value. Morris-Suzuki concludes, "automation causes the centre of gravity of surplus value creation to shift away from the production of goods and towards the production of innovation - that is, of new knowledge for the making of goods." That is, to continue to generate surplus value, capitalists must constantly introduce more productive methods.

Further, she suggests, the "perpetual innovation economy" means that fewer and fewer workers will be engaged in direct production - a visible phenomenon in many sectors - and that "information which contributes to productive processes will become a commodity churned out by corporate enterprises almost as routinely and monotonously as cars flowing from an assembly line."

The perpetual innovation economy demands flexibility from the workforce. Morris-Suzuki writes, "It is therefore likely to be characterized by growing insecurity of employment and increased reliance by companies on a large pool of part-time, temporary and contract labor."

Finally, Morris-Suzuki argues that perpetual innovation will likely result in the "disappearance" of the scientist, rather than the conversion of most or all workers into scientists. She believes that the de-skilling of intellectual labor is a dominant trend. This is her weakest point. While it is true that much technological work has been routinized, numerous industries still need ever-increasing numbers highly trained, creative personnel.

### FEDERAL POLICY

Amidst the rhetoric of high-tech executives and "Atari politicians" it is sometimes difficult to determine what role Federal policy plays in encouraging the growth of high-tech industry. The Congressional Budget Office has prepared a report that sorts out and describes in detail the effects of tax policies and Federal research funding. The CBO study looks at the research and experimentation tax credit, R & D limited partnerships, capital gains tax treatment, and programs providing funding for technology-oriented private research.

As a balanced review of policies, the report pulls its punches. It does conclude, however, that high-tech firms receive tax treatment at least as favorable as other industries. And it finds, as *Global Electronics* reported last month, that the capital gains tax preference has provided only a marginal impetus to venture capital investments. It even asks a question heard too rarely, to what degree is the electronics industry of strategic importance to the U.S., worthy of support from the Federal government because its continued success is important to the economic future of the entire nation. (*Federal Financial Support for High-Technology Industries*, June, 1985)

### MAGAZINES WANTED

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