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## LABOR AND INDUSTRIAL POLICY: A LONG-RUN PERSPECTIVE

by Robert E. Scott

Since World War II, America's trade balance in manufactured goods has gradually fallen and the number of industries facing import competition has slowly risen. Since 1980 there has been a sharp increase in imports, caused by macroeconomic policies. This article argues that the U.S. should respond to the long-run decline in manufacturing competitiveness by using microeconomic policies to develop innovative technologies and new products. The U.S. has the resources necessary for high-tech leadership but will be unable to realize this goal without conscious industrial policies to create comparative advantage with new technologies. Other authors, such as Bluestone and Harrison (*The Economic State of the Union for 1981*, San Francisco, Public Media Center), call for capital controls and short-run protectionism to save jobs and to relieve international competition. However, protectionism may prevent the creation of jobs in high-tech industries where the U.S. has its greatest comparative advantage.

**Why High Tech?** The U.S. specializes in producing goods that intensively use skilled labor, scientists and engineers. High-tech includes more than semi-conductors and biotechnologies. At least 20 industries from engines and turbines to electrical equipment are based on rapid technological change, according to Robert Z. Lawrence (*Brookings Papers on Economic Activity,* 1983). High tech firms accounted for 27% of all value added (and employment) in manufacturing in 1960. By 1980 their share had risen to 38% of value added and 33% of employment. Also by 1980, the average hourly wage of production workers in high-tech was $7.62, versus $7.12 for the rest of manufacturing industries. About 60% of production workers in both categories are covered by collective bargaining agreements, though high-tech industries employ more non-union, high-wage, non-production workers. (The computer industry is an anomaly with low wages and much lower unionization rates.

The U.S. needs high-tech industries because there is a tendency to lose competitiveness in basic manufacturing industries. The theory of the product cycle suggests that countries like the U.S. with large supplies of skilled labor and good research facilities will develop and export innovative products. As experience grows, standardized mass production techniques are developed, utilizing more capital and lesser skilled workers. Production then moves to less developed couuntries that have a comparative advantage in low-skill, low-wage mass production. Thus there is an inherent tendency for the U.S. to lose jobs in basic industries. The benefit is that this releases workers for more productive employment in advancing, high-tech industries. These gains occur in a dynamic economy, but there are adjustment costs involved that should not be born by displaced workers, because all of society gains from more high-tech production.

**A Slowdown in High-Tech Growth** – Since the U.S. specializes in high-tech products and processes, we should encourage innovation and rapid growth of new firms—along with rapid decline of old types of production. Again, according to Lawrence this process of shifting the pattern of production—what economists call structural change—slowed down by 25% in manufacturing in the late 1970s, compared to the 1950s. Consequently, the ratio of exports to imports in high-tech goods fell from 1.78 in 1969 to 1.52 in 1979. Thus, we have been losing competitiveness in high-tech manufacturing. On the other hand regional shifts in manufacturing employment increased by 25%, which may reflect attempts to avoid unions and may not be related to product cycle developments. Thus, more of the plant closings observed by Bluestone and Harrison are explained by regional shifts than by product cycle types of structural change. Protectionism (in steel and textiles, for example) may have contributed to the slowdown in high-tech growth by obstructing the movement of resources into advancing sectors (see *Labor Center Reporter* No. 84, March 1983: "Will 'Local Content' Help Labor?" by Kent Osband).

UNIVERSITY OF CALIFORNIA, BERKELEY
CENTER FOR LABOR RESEARCH AND EDUCATION
INSTITUTE OF INDUSTRIAL RELATIONS
BERKELEY, CA 94720
(415) 642-0323

**Government's Role in Innovation** – Recovery of U.S. manufacturing depends on our ability to create new products and processes in a wide range of industries. New technologies can increase the competitiveness of basic industries like steel (e.g., with development of new mini-mills and products such as metal ceramics), as well as the high-tech industries described above.

Private markets are inadequate for stimulating research and development (R & D). The patent system does not adequately reward inventors for the costs and risks of research, and is an inefficient way to distribute new ideas. New products such as electronics often have steep reductions in production costs as firms gain experience. Society would benefit from more rapid development of inventions and new products than we can expect from private markets. Furthermore, innovations in areas such as semi-conductors will often make other industries using semi-conductors (autos, radios) more competitive.

These examples reflect the standard arguments for government support of R & D and the commercialization of new technologies, which suggest that government's role is simply to accelerate the development of new ideas. However, recent research indicates that failure to promote innovation implies that other developed nations which have more aggressive industrial policies will make most of the important discoveries, and the U.S. will be closed out of many markets for high-tech goods. If left on its own, the private market will channel most new and displaced workers into low-wage jobs in such service industries as restaurants and long-term health care, the low-wage "growth-industries" of the 1970s. The following examples illustrate the power of coherent planning for structural change and industrial innovation.

**Agricultural Success** – Despite widespread U.S. opposition to planning, the most successful example of a coherent industrial policy is the post-war development of U.S. agriculture. Since World War II, U.S. agricultural policy has guided structural change, resulting in a competitive export industry. After the War the government expanded research at agricultural colleges and experiment stations. New innovations were developed and dispersed through a huge system of county extension agencies. As a result, agriculture now accounts for about 20 percent of all our exports.

**Semi-conductor Failure** – The Japanese used a complex set of import controls, labor market policies of lifetime employment security, and research subsidies to create advantage in semi-conductor memory chips. Production experience in semi-conductors leads to rapid efficiency improvements. Lifetime employment security can protect investment in workers' skills. Research subsidies yield large benefits. In the late '70s a glut developed in the market for 16k chips. Japanese firms shifted their workers to other projects. U.S. firms laid off highly skilled workers, who moved to new jobs. When the market recovered, the Japanese were able to increase output more rapidly, because of their experienced labor force, gaining an unbeatable edge in cost-reducing experience. At the same time they subsidized development of the 64k chip, and sold it (first) in their home market, where U.S. firms were excluded. These measures paid off, and the Japanese have been able to capture more than half of the world 64k market.

**Policy Choices** – Bluestone and Harrison's proposals would appear both to promote and to retard the rate of structural change in the economy. They support plant closure notification and adjustment assistance legislation that would help move workers to new jobs, and would cut the social costs of job loss. However, their protectionist proposals would result in stagnation and slow growth of the manufacturing sector, with rising costs for consumers. Alternatively, industrial policies to promote innovation could increase jobs in both basic and advancing sectors and lead to dynamic growth of high-wage, high skilled manufacturing industries.

-- Robert E. Scott