TURN OFF THE LIGHTS

Post-Industrial Economy

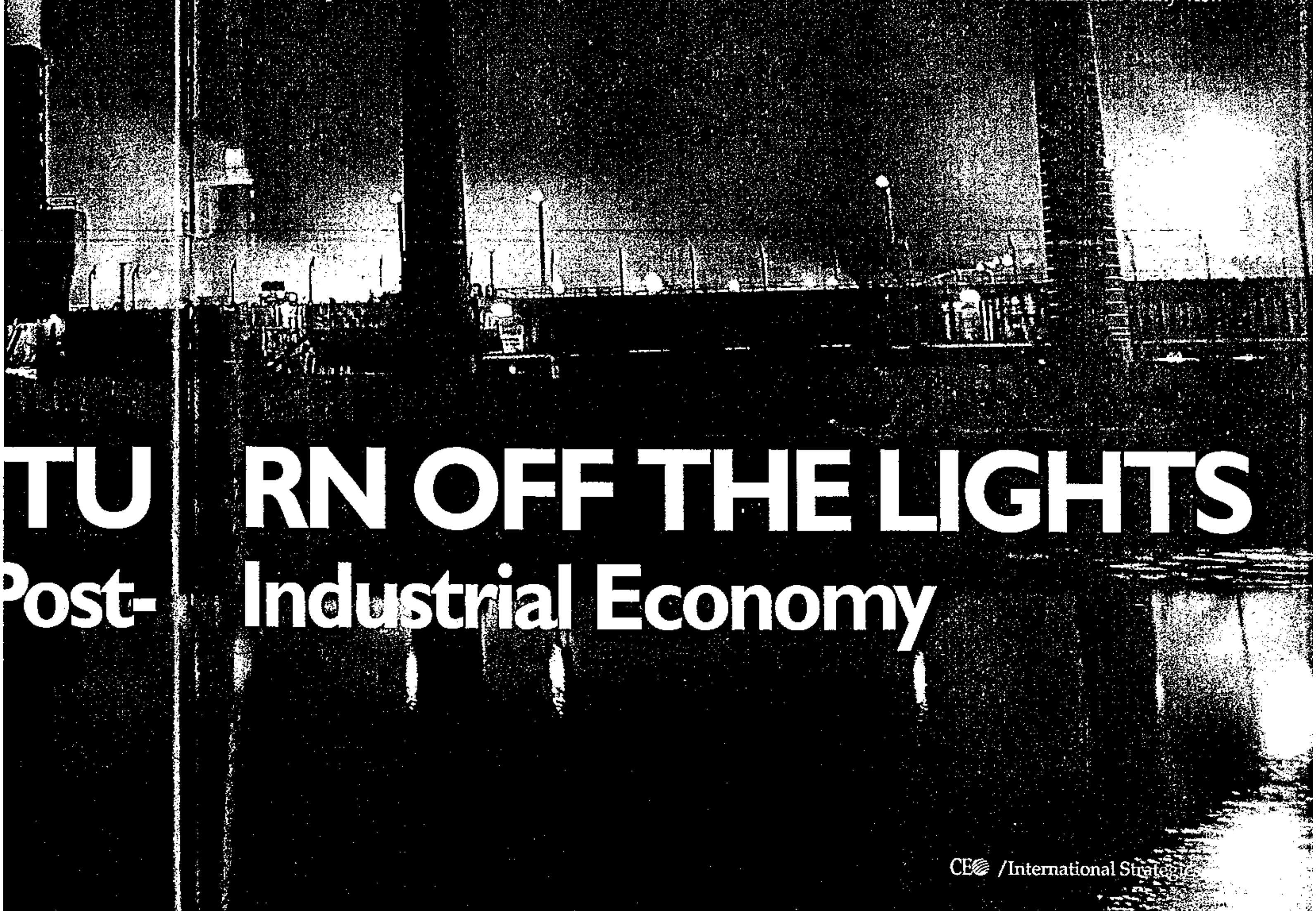
by William Milberg

America has entered its post-industrial phase. The facts couldn't be clearer: manufacturing employment fell 6.3 percent between 1973 and 1990, and in 1990 manufacturing accounted for only 16 percent of total employment, down from 26 percent in 1970. Employment in services (including government) grew to 69 percent of total employment, from 62 percent in 1975. These trends indicate the evolution of a very different economy from that of 20 years ago.

But the transition from an industrial to a post-industrial economy that appears to have begun in the U.S. in the 1970s is often viewed as a sign of the natural economic maturation process, akin to the transformation from an agricultural to a manufacturing economy that took place in the U.S. in the 19th and early 20th centuries. The fact that barely 2 percent of Americans are employed in agriculture today compared to well over 20 percent in 1925 is clearly not cause for alarm, but for wonderment at the dynamism of the U.S. economy. Similarly, the transition to a service economy, with all its high-tech and clean environment connotations, is, according to many, to be applauded and encouraged. Thus *Forbes* magazine proclaimed in 1983 that, "instead of ringing in the decline of our economic power, a service-driven economy signals the most advanced stage of economic development...Instead of following the pied piper of 'reindustrialization,' the U.S. should be concentrating its effort on strengthening its services." Even the 1992 Novel laureate in economics, University of Chicago professor Gary Becker, has written that "strong modern economies do not seem to require a dominant manufacturing sector."

But 20 years into the transition from a manufacturing to a service-oriented economy, the myth of the post-industrial economy is giving way to the reality of an economy with a weakened manufacturing sector: slow growth, declining real wages, high unemployment, a large foreign trade deficit and a vulnerability to foreign competition even in high-technology goods.

Not surprisingly, economists disagree about the effects of deindustrialization. Many view

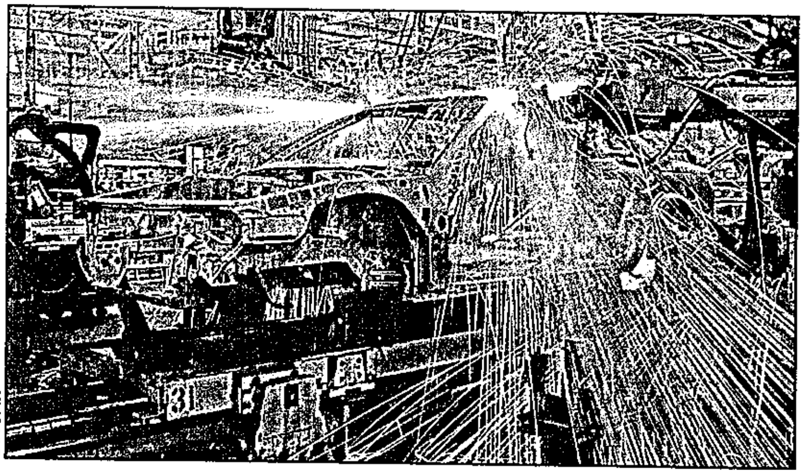


LAST ONE OUT, TURN OFF THE LIGHTS

the transformation as the inevitable and benign result of economic maturity and global economic developments. Others argue that manufacturing is the engine of economic growth and that the decline in living standards in the U.S. since the late 1960s can be attributed to a decline in manufactures resulting from inadequate investment in plant, equipment, R&D and human skills. Who is right?

Fast Food and High Wages

Before venturing an answer to that question, it is important first to define the terms, for even these are cause for dispute. The debate over the economic need for a strong manufacturing base is contentious, not least because there is no agreement as to what constitutes a "service economy." Services include everything from haircuts to brain surgery, from fast food sales to supercomputer operating system design and repair. Some of these require advanced skills and much equipment, and pay high wages. Others use only low-skill, minimum-wage labor. The notion of the service economy is further complicated by considering the relation between services and manufacturing. Many services, especially those paying higher wages, simply would not exist in the absence of manufacturing. Often the service industry is linked to a particular manufacturing activity and the movement of manufacturing to an offshore location will result also in the departure of those services that serve the manufacturing sector. An enormous number of service industries — insurance, financial, legal, consulting, machinery repair and maintenance, and information processing — are in large part based on serving a manufacturing sector.



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In their book *Manufacturing Matters*, Stephen Cohen and John Zysman argue that a significant portion of services output — and especially of high-skilled services — is dependent on these "tight linkages." The point is that because services are often complements, not substitutes, to manufacturing, a country cannot become competitive in service unless it also has a vigorous manufacturing sector. Moreover, the notion that an economy could be primarily reliant on services for its employment and growth — the idea of the "post-industrial economy" — is a myth.

In spite of the linkages argument, economists have for centuries argued that there is no inherently desirable production pattern, and that what a country should optimally produce is best determined by the forces of free international trade. This view dates back to the early 19th century writings of British economist David Ricardo and the principle of comparative advantage.

The Greatest Edge

According to Ricardo, under conditions of free trade it will be in a country's interest to produce and export only those goods for which it has the greatest relative productivity edge over rival countries. Other products are best produced abroad and imported. Assume, for example, the U.S. and Mexico each produce corn and computers and that the U.S. has unit costs one-fourth of Mexico's in computer production and one-half those of Mexico in the corn sector. Since the U.S. is relatively more efficient in the production of computers, each country will gain if the U.S. specializes in and exports computers while Mexico specializes in and exports corn. Ricardo showed that such a production and trade pattern would benefit each country and raise world output. Moreover, it will lead to balanced trade in all countries.

In this view, the problem of "competitiveness" disappears. No nation can be "uncompetitive" since even the most backward nation, by definition, will have a comparative advantage in something and will automatically achieve an equality of imports and exports, that is, balanced trade. Thus Paul Krugman, a professor of economics at M.I.T., claims that: "International competition does not put countries out of business. There are strong equilibriating forces that normally ensure that any country remains able to sell a range of goods in world markets." The acceptance of the doctrine of comparative advantage and the optimality of free trade brings with it an endorsement of the resulting pattern of resource allo-

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In a Perfect World

The problem with Ricardo's theory is that it assumes full employment and perfect competition. Rationalization of one sector necessarily brings expansion in another. But deindustrialization has brought a rise in the level of structural unemployment, and a lowering of real wages. The persistence of wage differentials across industries indicates that it is possible and desirable to focus production in high-wage sectors. Service sector jobs — the myth of post-industrialism notwithstanding — have been low-wage jobs compared to those in manufacturing.

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A strong case could be made that the U.S. needs a competitive manufacturing base to sustain its standard of living. Services simply do not have sufficient export potential to allow the U.S. to import the goods and services crucial to its production and consumption needs. In 1991, exports of services were only 27 percent of U.S. exports, with merchandise exports accounting for the other 73 percent. In 1990, only 19 percent of world trade was in services. As the U.S. share of world manufactures exports has fallen, U.S. import demand has not. The result has been trade deficits of a magnitude and persistence unprecedented in U.S. history.

But perhaps the strongest argument for maintaining a healthy manufacturing base is the technological dynamism of manufacturing compared to services production. While the post-industrial economy may be a myth, the high-technology economy certainly is not. High technology, like almost all manufacturing production, exhibits large economies of scale. That is, enormous productivity gains can be captured by producing at high levels of output. Services simply do not offer the possibility of such productivity gains. Health, education and cultural services are all examples of sectors in which productivity gains are difficult to attain beyond a certain point. Economist William Baumol calls this the "cost disease" of services production, an extreme example being the impossibility of raising the labor productivity in the "production" of a Mozart string quartet!

The difficulty of maintaining competitiveness in high-tech sectors is evidenced by the enormous effort required to be able to keep up with the state of the art. Rapid developments in transportation and communications and the globalization of production have shortened the diffusion lag for even highly-sophisticated technologies. But the payoff is there. In addition to the scale economies and resulting productivity gains, new technologies have traditionally had enormous spinoffs for product innovation in other sectors. To lose out on a basic technological innovation in microelectronics, telecommunications or biotechnology is to lose an opportunity to develop an entire flock of downstream products. Development of the first computer by the U.S. Defense Department can be attributed with a slew of downstream developments in semiconductors, personal computers, laptops and supercomputers.

Avoiding the Tough Decisions

The challenges to American manufacturing are many, including rapid technological change, intense international competition, both from low-wage, newly-industrialized countries and high-wage, innovative advanced countries. The myth of the service economy has allowed American business, labor and policy-makers to avoid these difficult and long-term challenges. But economic transitions also create opportunity. The new economy that is rapidly evolving will not be one where wealthy countries specialize in services, but where manufacturing competitiveness requires high-level skills and an environment conducive to rapid product and process innovation. Reversing the downward trend in the American standard of living will require an enhanced ability to capture the scale economies, positive spinoffs and productivity increases that are likely to be a by-product of manufacturing competitiveness in the 21st century. The question should move from whether we need a manufacturing base to how to retain a dynamic one.

William Milberg is assistant professor of economics at the New School for Social Research in New York.