

Semiconductor industry studies call for junking 'free market' economics

by Anthony K. Wikrent

Continued U.S. government *laissez faire* economic policies will result in disastrous obsolescence of the U.S. electronics industry, a growing chorus of industrialists, scientists, and researchers is warning, as a highly significant debate erupted in November over indications that the Bush administration is planning to cut funding for high-technology research.

Though not openly articulated at this time, underlying the debate are the irreconcilable differences between the axioms of "free market" policies, and those of the "American System" policy of dirigistic development of the national economy.

Fueling the debate were two separate studies issued on Nov. 20. One report, by the National Advisory Committee on Semiconductors, warned that the U.S. electronics industry was in danger of falling one generation behind its Japanese counterpart in basic semiconductor manufacturing and applications technology, if government support were not forthcoming within two years. In an implicit condemnation of the national shift to speculative financing over the past two decades, the NACS urged the creation of a Consumer Electronics Capital Corporation, that would provide low-cost, long-term loans to help industry develop new technologies.

The NACS was established, and its report mandated, by the U.S. Congress in 1988, and is headed by Dr. Ian Ross, president of AT&T Bell Labs.

The second report, issued by the Economic Policy Institute (EPI), estimates that government failure to support the development of high-definition television and related technologies could result in a \$225 billion trade deficit in those areas alone, and the loss of 2 million jobs, within 20 years. The EPI also noted that lack of a coherent national communications policy makes it almost impossible to plan nationwide improvements, and that U.S. telecommunications have been shaped more by anti-trust and rate regulation considerations, than by upgrading the technological condition and global competitiveness of the industry. The EPI board includes Robert Reich and Lester Thurow.

This emerging debate indicates the growing potential to challenge and overthrow the hegemony of the "free market" doctrines of British opium trade apologist Adam Smith, and

reestablish the pro-development dirigism of the "American System" of economics. As Harvard economist Reich told the *New York Times* on Nov. 17, "American business is beginning to say things that would have been anathema five years ago."

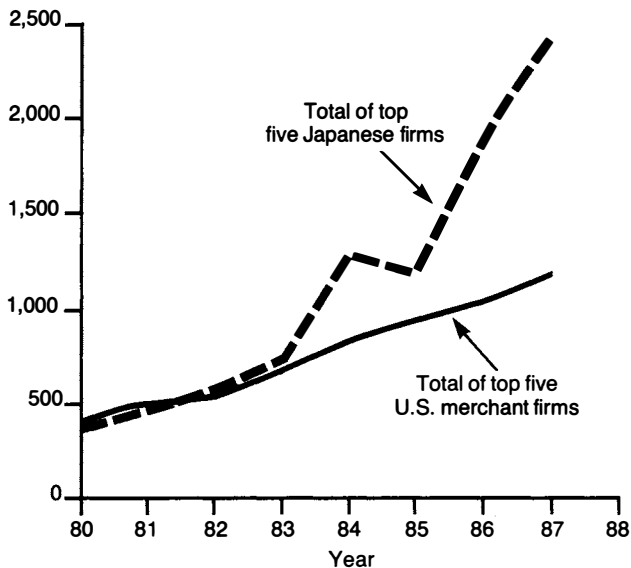
At the very least, a key fault of current U.S. financial policy assumptions has been openly, if indirectly, identified: the hostility exhibited by capital towards the long-term pay-back of basic scientific research, under a "free market" regime. The NACS report states, "The single most important consideration for the current and future health of the semiconductor industry is the availability, cost, and patience of capital."

The crucial importance of this point is highlighted by the two accompanying figures. As the NACS report notes, "Despite high investment rates relative to other U.S. industries, the U.S. chip industry is being substantially outspent by its major Japanese competitors in R&D and the gap is growing larger," as shown in **Figure 1**. "In addition, Japanese firms have led the U.S. firms in capital spending since 1982, although the United States had greater semiconductor sales until 1986. In 1988, Japanese capital spending was nearly \$2 billion higher than that of the United States."

Further amplification of this point is warranted. First, note that the population and economy of Japan is only half that of the United States. Second, if the U.S. chip industry has higher R&D investment rates "relative to other U.S. industries," then the investment rates in other sectors of the U.S. physical economy must be abysmal indeed. Thus, we have some indication of how badly skewed in favor of usury and speculation the U.S. financial system has been left by the shift, over the past three decades, to a "post-industrial," "environmentally safe" economy.

The net result is illustrated by **Figure 2**, which details the frightening level of dependence a "post-industrialized" (actually "de-industrialized") U.S. economy has on foreign suppliers of high-technology manufactured goods. This dependence holds true for the entirety of the economy, and lawfully must result when a nation refuses to produce for itself. It is a fitting irony that the U.S. now finds itself depen-

FIGURE 1
World semiconductor R&D spending
 R&D spending (\$ millions)



Source: Dataquest.

dent on semiconductors, the basic building blocks of the much touted “information society,” or “post-industrial” economy the United States is supposed to be.

Unfortunately, the NACS does not draw the obvious conclusion—a condemnation of the “free market” and the financial chaos it spawns. While the NACS does make certain excellent recommendations—for example, making the Research and Engineering Tax Credit permanent rather than temporary, reinstating the investment tax credit, and revising the depreciation schedule from eight to five years (the NACS notes that the depreciation schedule in Japan is as short as one year)—the NACS says it is opposed to a tax on short-term turnover of securities in financial markets, and other measures designed to restrain leveraged buyouts and other predatory financial practices.

The NACS report also points to the horrifying condition of the nation’s educational system, and the decreasing skill level of the workforce, as a major impediment to reestablishing U.S. excellence in electronics technology. Unfortunately, the NACS seriously errs in its recommendations by failing to recognize that the cultural deterioration of the population is a lawful result of the abandonment of a national commitment to scientific and technological progress. This is a point that has been eloquently articulated by U.S. political prisoner Lyndon LaRouche, on the many occasions he has argued for the adoption of a Moon-Mars colonization program and a crash development program of the Strategic Defense Initiative, as the “science drivers” needed to save the U.S.

FIGURE 2
U.S. dependence on critical foreign semiconductor equipment and materials

Equipment	1988 Percent Imported
Stepping aligners	68
Resist Processing	69
Scanning electron microscopes	>80
Wafer saws	75
Die bonders	80
Tape automated bonders	81
Mold and sealing equipment	65
Molding presses	75
Lead trim and form	80
Materials	
Silicon wafers	97
Mask blanks (share of U.S. market only)	91
Sputter targets	96
Lead frames	>95
TAB tapes	85
Molding compounds	78
Ceramic packages	96
Ceramic multilayer packages	84
Ceramic substrates	97
Hybrid packages	80
Bonding wire	>95

Source: Sematech.

economy.

The major weakness of this debate so far has been the unwillingness to attack the underlying philosophy of “free market” economics. To an extent, this unwillingness is probably attributable to lack of knowledge of an alternative—in other words, historical ignorance of the American System. However, it is wondrous that no one has yet commented on the glaring hypocrisy of the Bush men, such as chairman of the Council of Economic Advisors Michael Boskin, or Budget Director Richard Darman, who are opposing government support of cooperative research and development efforts by joint government-industry consortia—such as Sematech, the effort to develop advanced semiconductors—or urging cuts in funding of the Defense Advanced Research Projects Agency. If the Bush men are so keen on keeping government out of the economy, what were they doing when they used virtual dictatorial powers of government to stave off another financial market meltdown on Oct. 16?

The U.S. Constitution assigns the federal government an active role in the nation’s economy to promote the general welfare.” A major point Alexander Hamilton made in forcefully arguing for the adoption of the Constitution, was that the central government must be strong enough to fashion a *national* framework for the industrial and agricultural development of the continent. It is instructive to review his argument in the *Federalist Papers* for government encouragement of a merchant marine, and the need for building a world-class navy.