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SILICON VALLEY VERSUS CORPORATE WELFARE

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Introduction

Two hundred twenty-two years ago, American colonists declared independence: to be free and to pursue their interests in free markets under a limited government. Americans hated taxes. They listed as a cause for rebellion in the Declaration of Independence "taxing us without our consent." Their new constitution limited government and banned personal income taxes. The Revolution produced the American Dream, during which the common man became better off more quickly than at any other time in history. For our first 200 years, from 1776 to 1976, America's per capita income grew at the rate of 458 percent per century, compared with the 3 percent per century growth rate of the pre-American world.

Since 1976 the per capita growth rate of the gross domestic product has steadily declined from 2.5 percent per year to 1.5 percent per year, and we hear people say, "America needs a raise." In 1913 the Sixteenth Amendment made possible a federal income tax, which began with a levy of 1 percent of GDP. Today, the American Dream is being eroded by the ever-increasing burden of federal, state, and local taxes, which consume a whopping 35 percent of our national output. Although we are at peace and the Cold War is over, our government is currently spending at a higher rate than the peak 30 percent of GDP rate of World War I and nearing the record 50 percent of GDP rate of World War II. There is a broad consensus that government spending must be cut.

Eliminating "corporate welfare" should be a priority in reducing government spending. The risks are minimal. Savings could reach $275 billion over five years.[1] And there is a moral imperative: we should not be asking our senior citizens to tighten their belts while our government is literally subsidizing the sale of Napa Valley Chardonnays to the French.

The current pork-barrel system of taxing and spending creates a downward economic spiral. With corporate taxes so high (the federal corporate tax rate is 35 percent), companies must lobby for givebacks to remain competitive. Congress is consequently put under extreme pressure to "bring home the pork" to home-state corporations, some of which are political contributors. Payouts to those corporations then lead the government to raise taxes, which, in turn, stimulates corporations and politicians to invent new subsidies, sometimes creatively labeled "government investments" or "government-industry partnerships." "Government-industry partnership" is Washington-speak that means Americans will be compelled to pay for more unnecessary corporate welfare programs like the Advanced Technology Program proposal to "rebioengineer" cotton to make cotton fibers more like polyester. We should break out of this downward economic spiral by ending corporate welfare now.

Technology subsidies to corporations are sold using technobabble to camouflage unjustifiable investments, which typically fall into four categories:

• Subsidizing the rich: Sematech. We gave $800 million over an eight-year period to 14 electronics companies that currently make more than $800 million in profits every month--and they don't have to pay the money back.

• Competing unfairly with private industry: the ATP video compression project. C-Cube Microsystems in Silicon Valley was venture funded and lost money for years before its video compression technology took off. C-Cube woke up one day and found a $1.2 billion rival entering its market with government funding. C-Cube's investors paid full fare.

• Spending that provides no benefit: gallium arsenide wafers in space. Vitesse Semiconductor in Camarillo, California, makes some of the world's fastest chips using an exotic semiconductor called gallium arsenide. Vitesse sees no value whatsoever in the $500 million National Aeronautics and Space Administration plan to make gallium arsenide chips in space.

• Spending that hurts the intended beneficiary: European semiconductor subsidies. The European Union put a tariff on semiconductor chips to protect its fledgling chip industry. European chip companies lost market share anyway. Now the EU is removing the tariff, but not before higher chip prices decimated its computer industry.

One common rationalization for corporate welfare is that Japan and Europe subsidize their corporations, compelling U.S. corporate subsidies to keep U.S. firms competitive. The rationalization is totally false. Objectively viewed, Japan's programs have been consistent losers. Western Europe's socialized economies are among the least healthy on the planet with double-digit unemployment rates. The industrial policy strategy

has been consistently selfdestructive to the economies of those countries pursuing it to any degree.

The best way to shut down corporate welfare is to have a yes or no vote on a package of corporate spending subsidies identified for elimination by an independent commission. That commission could be modeled after the successful military base closing initiative. Silicon Valley CEOs would support a fair proposal to cut corporate subsidies, as attested by the list of names in the Appendix. The commission mechanism allows Congress to avoid the lose-lose proposition of voting either for more corporate welfare or against a subsidy for a home-state corporation.

Corporate Welfare vs. The American Dream

The American Constitution guarantees the people's right to be free; they own themselves, their intellectual and physical property, and their money. The markets were to be free, and the new government was to be given only limited, enumerated powers.[2] Those powers not enumerated were specifically reserved to the people. It was unconstitutional to levy an income tax on individuals. Our forefathers wanted "the government off of our backs and out of our pockets," to use a Ronald Reagan phrase.

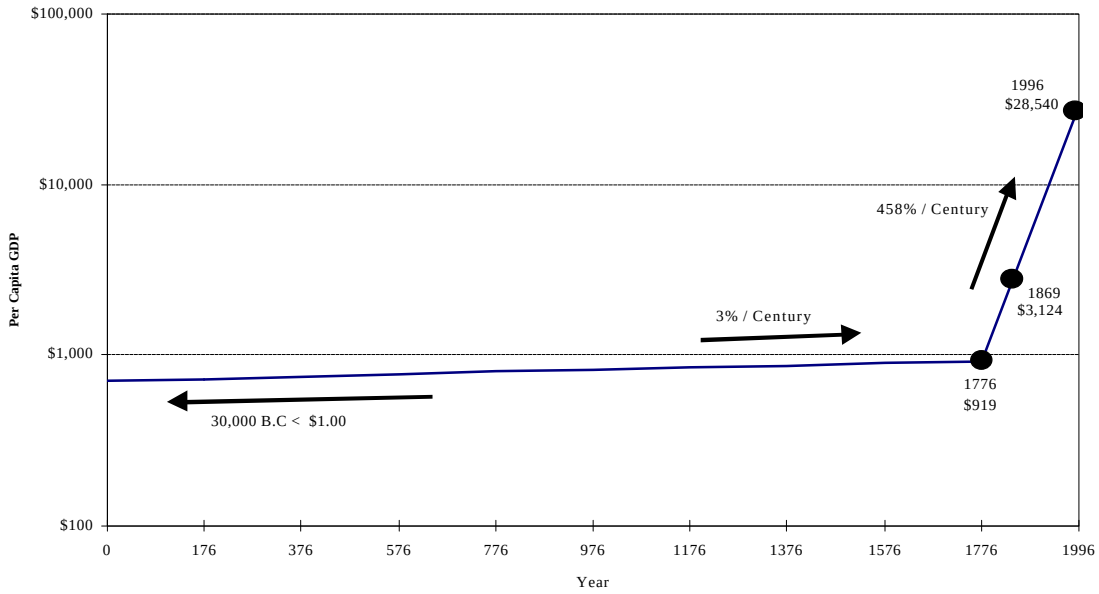
That first-ever, morally profound decision to organize a country "by the people, of the people, and for the people" led to the most rapid improvement in the well-being of the common man in history. During our first 220 years, the per capita U.S. GDP grew from $60 in 1776 (equivalent to $919 in 1996 dollars) to $28,540 in 1996.[3] GDP per capita grew at an unprecedented rate of 458 percent per century from 1776 to 1996, effectively doubling every 40 years. It took mankind 30,000 years to reach a per capita income level of $919 per year; then America catapulted its citizens from $919 to $28,540 in just 220 years (see Figure 1).[4]

The doubling of income every 40 years gave rise to the American Dream--the expectation that every new generation in America would be better off than the previous generation. Something special happened in America in 1776: the common people decided to stop serving government and to mandate that government serve them, and they prospered as never before.

Figure 1
GDP per Capita (1996 dollars)

The Growth of Government and the Economic Slowdown

A closer examination of GDP per capita over the last 20 years, from 1976 to 1996,



indicates a slowdown. Figure 2 shows that the 20-year compound annual growth rate of GDP per capita from 1976 to 1996 declined from about 2.5 percent per year to about 1.5 percent. The 2.5 percent growth rate of GDP per capita in 1976 corresponds to a doubling every 28 years. The slower 1.5 percent GDP per capita growth rate corresponds to a doubling every 46 years. The American Dream, the engine of our prosperity, has not stopped, but it has slowed down.

One important factor that is slowing the American economy is the ever-increasing consumption of our national wealth by government. In 1913 the Sixteenth Amendment lifted the constitutional ban on federal income taxes. As Table 1 shows, the first federal income tax in 1914 was almost insignificant in terms of the total and the per capita amounts paid, the percentage of GDP consumed, the percentage of the population required to pay taxes, and the size and complexity of the Internal Revenue Service.

Figure 2
GDP per Capita Growth (% per year)

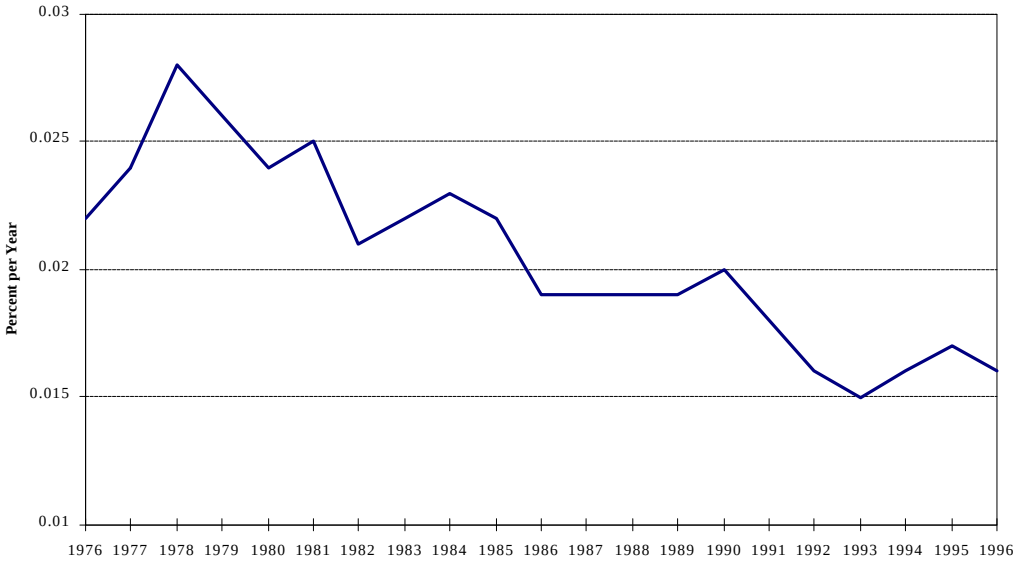
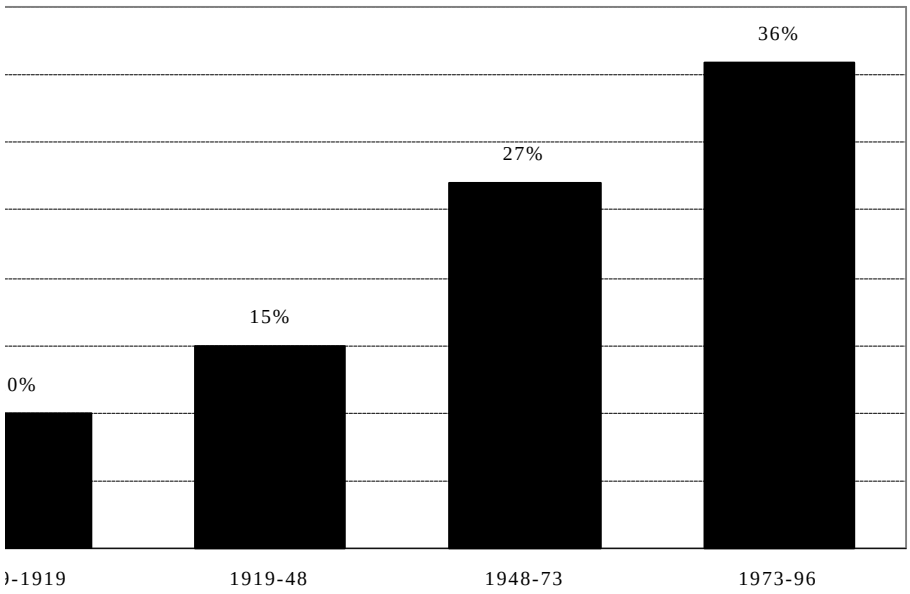


Table 1
Income Taxes Then and Now

	1914	1994	Percentage Increase per Year
Income taxes paid (billions)	$6.7	$683.4	6.0%
Income taxes as a percentage of GDP	1%	10%	-
Per capita income taxes	$69	$2,622	4.7%
Individual tax filers (000s)	360	113,829	7.5%
Percentage of population filing return	0.5%	45%	-
Internal Revenue Service budget (millions)	$110	$7,100	5.3%
IRS employees	4,000	110,000	4.2%
Pages of federal tax law	14	9,400	8.5%
Pages of IRS forms	4	4,000	9.0%
Top income tax rate	7%	40%	-
Income tax rate on median family	0%	28%	-

Source: Cato Institute.
Note: All dollar figures are in 1994 dollars.

Figure 3
Government Spending as Percentage of GDP



Source: Stephen Moore, Government: America's #1 Growth Industry (Lewisville, Tex.: Institute for Policy Innovation, 1995), p. 36.

During the last 80 years, every aspect of the federal income tax system has grown much more rapidly than the economy. In 1994 the per capita federal income tax levy of $2,622 reached 12 percent of the $22,216 per capita personal income of Americans.[5] The combination of federal, state,
and local taxes now supports spending that consumes a re-
cord-high 36 percent of GDP. Our government is currently consuming a higher percentage of our GDP than the 29 percent that it took at the peak of World War I, as reflected in Figure 3.

Despite rapid increases in tax collections, the government spends money even faster; it piled up a national debt of $4.7 trillion by 1994, over $18,000 for every American. The interest payments on the national debt now equal twothirds of the entire budget of the Defense Department. It's time to cut back.

The Case against Corporate Welfare

A good way to begin to reduce spending would be to immediately eliminate most corporate subsidies. So-called corporate welfare now amounts to an estimated $65 billion a year in direct federal outlays.[6] Many of the subsidies are intended to benefit America's high-technology industries. The truth is that Silicon Valley firms would be mostly unscathed if they lost all federal subsidies, although a few individual companies might be hurt. (Of course, it would be precisely the CEOs of those companies who would travel to Washington to make "end of the world" speeches.)

A historical parallel is the government protection from competition conferred on the U.S. airline industry in the 1970s. When U.S. airlines were deregulated, which removed subsidies in the form of higher fares, the industry got healthier; weak competitors were absorbed by better managed companies; and air travel became affordable for many Americans for the first time. The airline industry is healthier and better off without subsidies.

Unfortunately, our current pork-barrel system of taxing and spending has created a vicious downward economic spiral that will be difficult to break. If two corporations are taxed at a rate of 37 percent (my company's current total tax rate), but one of them receives a subsidy equivalent to a 10 percentage point rebate, the subsidized company will enjoy visibly higher profitability, higher share price, and an enhanced ability to raise funds at a lower cost. Consequently, companies must compete for government subsidies whenever those subsidies make a competitive difference. Even though I have made seven trips to Congress to oppose corporate subsidies, I would without hesitation pursue any important subsidies offered to my company, because it is my obligation to our shareholders to do my best for them, including obtaining any available low-cost funding. A company that failed to do so would be as foolish as an individual who refused to take income tax deductions because of a strong belief in a flat tax.

The spiral continues as corporations build lobbying organizations to pressure Congress to retain and expand subsidies to home-state corporations, which are often political contributors. As Congress succeeds in rewarding homedistrict corporations with their "fair share of the government pie," pressure builds for the government to raise the revenue to pay for all of those subsidies. The spiral is completed, as it was in 1993, when tax revenues are raised to pay the bills by hiking taxes on corporations, which then seek new and creative subsidies to offset their higher tax rates.

We can use popular Washington buzzwords such as "government-industry partnership" to describe the process, but the economics of the downward spiral is a slow-motion version of socialism; that is, the mandated movement of money from individuals and companies to central government control.

At one extreme, when all of the assets (save those of the black market) are controlled by central government planners, we have pure, Soviet-style socialism. At the

other extreme, when income taxes are illegal, we have American-style capitalism, circa 1789. That is a black-and-white representation. Today, Americans live in a gray world where the government takes and controls 35 percent of the country's yearly production. Western Europe's economies are more socialist than ours, and their mediocre performance is the end result. They have growth rates so low and unemployment rates so high--in some cases more than double the current U.S. rate of 5 percent--that they would cost any American president a second term. And, of course, the socialist disasters of Eastern Europe make even the ailing West European economies look strong.

Sometimes it is difficult to see the big picture because of incremental thinking. An increased tax of only a nickel a day per American supports a $5 billion per year subsidy. With easy money and companies promising breakthroughs in health care, pollution control, or electronics for "only" a few billion dollars, government often makes the wrong choice. The road to socialism is paved with nickels-trillions of them--each taken with the best of intentions.

The descriptions of Department of Commerce programs, such as the ATP, dazzle us with possibilities: next-generation video compression; high-definition television (HDTV); new-generation laser-based welding; a less polluting, more cost efficient painting process; super-hard coatings of boron nitride; and so forth. All of those ostensibly compelling and cost-effective reasons for corporate subsidies beg the question: if General Motors has annual sales of $160 billion and $20 billion in the bank, why does GM refuse to fund those research projects itself, and patent the results? GM is prominent in the ATP programs. So are Ford, Chrysler, General Electric, AT&T, IBM, Black and Decker, Honeywell, 3M, U.S. Steel, duPont, RCA, Phillips, MCI, Goodyear, Amoco, Kodak, Polaroid, Xerox, Caterpillar, Westinghouse, and even Time Warner--apparently, Bugs Bunny needs the taxpayers' money.

All those Fortune 500 corporations maintain that they need nickels from the American taxpayer to bring their products to market.

There are two commonly cited reasons why such subsidies should continue. First, some of the projects really are worthy and businesses are simply seeking a subsidy from the government to get value from their extensive lobbying groups and the high taxes they pay. The second reason is risk avoidance--companies want the government to help fund projects that are long shots.

I believe that the "high-risk" argument used by the Commerce Department is usually just an excuse for underwriting poor investments. Breakthrough ideas often involve great risk, that is, a significant chance for failure. The important evaluation is really not about risk but about return on investment. Risky ideas can be great, if they offer huge returns. It is like gambling: A bet that has only a 1-in-10 chance is very risky, but it is a big winner if it pays 100 to 1. Conversely, a bet that wins 9 times out of 10 has very

low risk but is not worth making if it pays back a very low return. In Silicon Valley, we have become rich (San Jose has the highest per capita income in the United States) by making many very risky bets, some of which turned out to be colossal winners, like the microprocessor chip. No company in Silicon Valley has ever had the size or assets of General Motors, yet most of us have taken big risks--to get even bigger returns. Analyzing return on investment rather than risk shows which poor investments get foisted off on the government: the ones that have high risk and an ordinary return. The corporate mentality of investing "free" government money is straightforward: "We would never invest our corporate money in this Edsel of a project, but if the government invests in it, great. If the Edsel succeeds, it will be a nice business; if not, we have not lost anything."

Medium-return, high-risk investments are sold to the government using technobabble. For example, I have a Ph.D. in transistor physics. I could convince Congress that there is a national imperative to build gallium arsenide wafers in the near-perfect vacuum of space to achieve near-perfect tetrahedral crystals with very high electron mobility. I would persuade Congress by using a modified form of the classic "Russian missile gap" argument, which worked so well for the Defense Department during the Cold War. I would paint a picture of a potentially catastrophic technical threat, with which our foreign competitors could wipe out an entire American industry segment. Federal lawmakers would support the project. (As a matter of fact, Congress did.)

Then I could come back later and tell you that my original technology calculations were in error and that a more refined version of an existing technology--indium antimonide--could save the day. Given that I am a credible scientist from a credible corporation and that few members of Congress are scientists, lawmakers would be hard-pressed to challenge my assertions. Washington's technical experts would be of no help in dealing with me--they are the ones Silicon Valley companies like mine did not hire.

I would not even have to be dishonest or a cynic to mislead Congress. I spend many working hours exercising my skills as an engineer-businessman to figure out which 1 in 10 of the ideas presented to me is a worthy investment for our shareholders. I often say no to well-meaning engineers in our company who are convinced that their high-risk, medium-return idea is really a medium-risk, high-return idea. Indeed, most Silicon Valley entrepreneurs don't start new companies to become technomillionaires but to prove their old bosses wrong, to show that their great ideas were misjudged. I founded Cypress Semiconductor Corporation 14 years ago precisely for that reason. Making difficult technology decisions professionally is what Silicon Valley is about. Whenever a dollar is transferred from San Jose to Washington, that dollar's chances of being invested productively diminish greatly.

High-Tech Corporate Welfare

Let's look at a few case studies of corporate welfare for high-tech businesses.

A Subsidy to the Rich: Sematech

By 1986 the Japanese were starting to take over the semiconductor industry, once dominated by American companies. The Semiconductor Industry Association lobbied for a $500 million federal subsidy for a technical consortium called Sematech.[7] They used the classic arguments to justify Sematech: "critical industry," "Japan has subsidies so we need subsidies," and "jobs will be lost." Sematech was funded, and my company inquired about joining, but the 14 Sematech charter members (12 of the 14 were billion-dollar-plus corporations) effectively excluded us and America's other 100-plus small semiconductor companies by charging a $1 million yearly minimum membership fee. Although Sematech was sold to Congress as a consortium open to all companies willing to pay dues of 1 percent of sales, the $1 million minimum meant that a $20 million semiconductor company actually had to pay 5 percent of sales. Big companies got a break, paying maximum yearly dues of $15 million. For a $3 billion semiconductor company, the dues amounted to 0.5 percent of sales--10 times lower than the dues paid by the small companies. That is why so few companies joined Sematech, even though it had $500 million to spread around.

My battles with Sematech started when our engineers were denied access to an advanced piece of wafer-making equipment, a chemical-mechanical polisher (CMP) machine manufactured by an Arizona company then named Westech. Sematech contracted with Westech to develop the CMP machine and asked that the machine be held off the market and offered to Sematech members only for one year. The president of Westech assured me that the equipment would be on the open market and that there was no deal between his company and Sematech, but Cypress was denied access to that critical piece of wafer-making equipment, which could have differentiated between winners and losers in the next-generation technology. At that point I became a vocal critic of Sematech, the "government-industry partnership" that attacked all competitors, including American corporations like mine. There were rumors about other Sematech deals with equipment manufacturers, but Sematech assured me that there were no "hold-back" equipment contracts. It turns out that there really were contracts to hold back new equipment. Sematech's new president, Bill Spencer, finally ended that practice voluntarily.

Several years later, I agreed to become an expert witness in a trial in Austin, Texas, in which Travis County sued Sematech for failure to pay local road and school taxes. Sematech had claimed on its tax exemption form that it was a "charity." I used my position as a witness to subpoena documentation from them, requesting any contracts between Sematech and the manufacturers of wafer-making equipment, including Westech and others, as well as any contracts between Sematech and its own members. Sematech's lawyers were fast asleep and provided me with a six-inch stack of contracts, including the contract between Sematech and Westech Corporation to develop and manufacture a "chemical-mechanical polisher," which was to be sold exclusively to Sematech members "for a period of one year after the point of normal product introduction." There were also

other hold-back contracts. A bonus of the fishing expedition: Sematech had also granted development contracts to its own members, casting doubt on the fairness of the 50-50 "partnership" between its members and the government.

The behavior of the Sematech members was neither illegal nor unethical. Sematech asked for and received an antitrust exemption at its formation. It used the combined resources of its members and the government to create a competitive advantage, and it kept its secrets from its competitors. Sematech did what rational people do when the government gives them free money and an exemption from the rules.

A few years ago, Sematech announced that it was not going to accept the last $200 million of its second $500 million grant. Thanks to my discussions with Sematech leaders, I know that they desired to be independent of government restrictions and not to accept government subsidies when their industry was doing better financially. Consequently, Sematech's budget was cut in half, yet its performance remained essentially unchanged. Bill Spencer changed Sematech from an expensive 800-employee manufacturing organization to a leaner research center and information clearinghouse that relies more on the manufacturing resources of its members. I believe that if Sematech had been formed as a private consortium with a smaller budget, it would have come to its current, more efficient model of operation much more quickly. But with government money, an organization can afford to be inefficient.

To be fair to Sematech, I should note that the abuses I have mentioned are more than five years old and that the new regime at Sematech is doing a good job. Sematech's initial membership of 14 has now dwindled to 10, but the consortium appears to provide value to those remaining companies--it simply never should have been funded by the taxpayer. Sematech falls into the "subsidies for the rich" category because its members include Intel, Motorola, Digital Equipment Corporation, IBM, AT&T, Texas Instruments, Advanced Micro Devices, Rockwell, and National Semiconductor. Those companies make enough profit every month to pay back the government's eight-year, $800 million investment. At the very least, Sematech should have been funded by a loan, not a gift from the taxpayer.[8]

Unfair Competition: The ATP Video Compression Program

Video compression is the technology that makes possible digital TV and small-dish satellites. Conventional television requires one satellite transponder per channel and a 10-foot dish to receive the weak analog signal. Digital TV signals are clearer, and 10 channels fit on one satellite transponder (think of the billions of dollars saved on the extra satellites we won't need). The basic concept of video compression is that, frame after frame, most TV pictures don't change much. When Dan Rather presents the evening news, he moves, but the set behind him does not, which raises the question, Why not just transmit the differences from frame to frame rather than retransmitting the entire picture?

The concept is obvious and simple, but the mathematical algorithms and special-purpose computers required to implement it are decidedly not. The leader in video compression technology is C-Cube Microsystems Inc., a quarterbillion-dollar Silicon Valley start-up company, which has received an Emmy for its contribution to the television industry. C-Cube is the largest and most technologically potent company in a new industry that will reshape picture transmission not only in television but also in computers and on the Internet.

Alex Balkanski, a brilliant mathematician and businessman, is C-Cube's CEO. I am a member of its Board of Directors. Despite C-Cube's leading technology, becoming a successful business in the video compression market has been a struggle. Changing the way pictures are transmitted in a government-regulated market is a prolonged task. The venture-funded company lost money for years while waiting for its technology to take off. Shortly after C-Cube started making a profit, we were shocked to find out that the government had funded one of our competitors. An ATP grant went to LSI Logic Corporation, one of America's top 10 semiconductor companies, to help fund their effort in video compression.[9]

Spending for No Benefit: Gallium Arsenide Wafers in Space

Gallium Arsenide (GaAs, pronounced "gas") is a semiconductor 5 to 10 times faster than silicon. GaAs chips are used to transmit data at very high speed on the so-called electronic data superhighway. GaAs chips are capable of transmitting and receiving signals on a single fiber-optic cable at the rate of 10 billion bits per second, fast enough to transmit 250,000 typed pages of information per second.

The Space Vacuum Epitaxy Center is billed as "a NASA center for the commercial development of space." It is funded to grow GaAs wafers on space shuttle flights using a process called epitaxy. NASA's Wake Shield was designed to grow GaAs crystals behind a shield sweeping through space some 30 miles away from the contaminants surrounding the space shuttle. The theory: the vacuum in space is much better than the vacuum earth-bound equipment can provide, thus offering the potential to grow more perfect crystals in space.[10]

The Wake Shield became one primary objective of five NASA missions. No one at SVEC would say exactly what the cost of the space wafer experiments was, but a ball-park estimate is $200 million per flight, shared among several experiments. The management of the Wake Shield claimed that although the initial wafers would be astronomically expensive, later production of GaAs wafers in space would cost only $10,000 per wafer, an amount declared to be commercially viable. Congress bought off on SVEC, and at least two missions have been flown.

Lou Tomasetta, the CEO of Vitesse Semiconductor Corporation in Camarillo, California, is an expert in transistor physics, data communications, and GaAs integrated circuit manufacturing. Neither Tomasetta nor I can figure out why our government is making GaAs wafers in space. He calls the program a "solution looking for a problem." We both sit on the Board of Vitesse, one of America's Big Three GaAs companies. Given the possibility that we were missing something, I called Steve Sharp, who runs TriQuint Semiconductor, another of the Big Three, in Oregon. Sharp said that he was buying GaAs wafers for $175 each and that the very highest performance GaAs wafers sold for $1,000. He said that it would be very difficult to figure out how to make money on a $10,000 space wafer.

In response to criticisms I published in an industry publication, Electronic News, challenging the commercial value of the space wafers, the head of the SVEC project said the wafers "could be useful for technologies not yet developed" and then listed numerous commercial products with technology derived from ordinary terrestrial wafers, including CD players and optic fibers, that already are on the market.

Maybe we are all missing something, but I think our government has taken several hundred million dollars from American taxpayers to subsidize an exotic technology manufactured in an exotic place for a super-high-tech industry that neither needs nor cares about the investment.

Spending That Cripples: European Semiconductor Subsidies

One form of modern corporate welfare that almost always produces unintended consequences is protectionism. Particularly in the high-tech area, trade barriers help some firms only at the expense of raising the costs and lowering the U.S. competitiveness of others. A recent case in point is the tariff that the European Union placed on semiconductor chips imported into Europe.

Currently, semiconductors make up about 20 percent of worldwide electronic shipments. In other words, the average personal computer contains about 20 percent of its value in semiconductors. Or, put another way, for every $1 in semiconductor sales, there is $5 in computer or home electronics sales.

When the European Union decided to protect its fledgling semiconductor industry by imposing a stiff 14 percent tariff on imported chips, it also raised the price that the European computer industry had to pay for its most important raw material, chips. The EU policy to protect its small semiconductor industry had a devastating impact on its much larger computer industry. Europe's largest computer company, Great Britain's ICL, had to sell a 50 percent stake to Fujitsu to stay afloat. Nixdorf, a prominent German computer company, was acquired by Siemens after a financial crisis. Italy's Olivetti, Europe's biggest PC producer, still sells PCs, but it stopped manufacturing, triggering big

layoffs. The market share of European computer companies as a group declined. And what happened to the fledgling European semiconductor industry while it was being protected? Its market share dropped from 10.2 percent to 5.4 percent from 1988 to 1996. In this case, government "help" damaged all parties concerned.

Recently, most of the European nations were forced to acknowledge their costly policy mistake and remove the trade restrictions.

The Hidden Costs of Technology Subsidies

A standard economic rationale for Washington's corporate welfare programs goes like this: If a tax of a nickel per day per American supports $5 billion in yearly subsidies, the whole $65 billion per year tab for corporate welfare can be viewed as a "mere" 65 cent tax per day per American. Shouldn't Americans be willing to pay 65 cents a day to make U.S. companies the most competitive in the world? The answer to that question should be no, because subsidy programs don't make industry more competitive. Moreover, the argument ignores the opportunity cost of that huge amount of spending. For example, with $65 billion, the capital gains tax and estate tax in America could be eliminated.[11]

Moreover, there is a basic equity issue at stake here. Consider the tax levy for corporate welfare as it applies to two groups, average Americans and rich Americans. That 65 cents per day is $237.25 per year per household, a non-trivial sum for the average American. It means less money in the pockets of families struggling to make ends meet: a bicycle not bought, a vacation not taken, or missing the monthly college fund payment. It is unconscionable and un-American to tax working families to fund dubious corporate subsidies.

On the other hand, it is much easier to talk about funding corporate welfare by "taxing the rich" (who pay "only 50 percent" of their income to the government). I am one of those rich people who can afford to pay more taxes. Although I came to California with only $700, I became a founder of a start-up chip company that employs more than 2,000 people. My personal wealth comes from the 2 percent of the shares of our company I still own, most of them held since our founding in 1983. The market value of our company is now $1.5 billion. Two percent of $1.5 billion is $30 million. I am rich. What does it matter if the government takes an extra million dollars from me in order to fund corporate welfare or other programs?

As do many Silicon Valley entrepreneurs who have created wealth, I consume very little of my net worth. I'm interested in transistors, companies, and competition--not yachts and airplanes. Consequently, I plow almost all of the money I earn right back into Silicon Valley. I have already described two of the companies that I not only invest in but help to run as a board member. There are numerous other companies that I invest in because I know what they do and why it will add value. In aggregate, I hold shares in

over 100 companies, almost all of them Silicon Valley high-technology companies whose names you would not recognize. When Congress and the president voted to raise my personal taxes in 1993, I paid the extra amount by selling some of those Silicon Valley stocks. That money then went to Washington to be "invested" in "government-industry partnerships" related to the "electronic data superhighway" (at least that's the way the public relations people described it at the time).

The point is this: When government raises taxes on wealthy individuals, it is simply taking investment dollars from those individuals and moving them to Washington. Proven moneymakers and job creators lose control over the investment of their funds, and unproven Washington amateurs take over. The real question for Americans is, If you had to bet the creation of your job on investment by wealthy people in the private sector or on investment by the government, which would you choose? The answer is obvious. Although it is good stump rhetoric to fume about "tax breaks for the rich," the fact is that the average American loses out every time a dollar is taxed out of the private sector. If Congress really wants to enhance the competitiveness of American corporations, it should cut the capital gains tax and let me invest my own money--I'm very much better at it than is government.

There is one final hidden cost of government interference in the free market: the inefficient use of human resources, the most devastating cost of all. All CEOs know one fundamental truth: the human knowledge and energy collected in a company are what drive profit. It's not assets, or factories, or cash, but people that separate one company from another. Consequently, in Silicon Valley, we fight titanic battles to woo employees in an area where unemployment is less than 2 percent. When Cypress was a start-up company, we wooed numerous employees from Intel with the lure of a more prominent position (in a much smaller company) and the potential wealth from stock options. Intel, now the largest semiconductor manufacturer, has counterattacked with a new campaign promising--in writing--a Hawaiian vacation as a sign-on bonus for working at Intel. Recently, when one of our competitors, Cirrus Logic, suffered a problem that prompted layoffs, we hired an airplane to fly over Cirrus's headquarters carrying a banner with the message that we had jobs open and our Internet address.

Corporate welfare can have a devastating effect in an environment like Silicon Valley. While companies are using salary, stock, and promotions to woo the best and the brightest, the government sometimes uses corporate welfare to prop up sick companies. Consider this hypothetical case: What if the government had decided to "protect jobs" by subsidizing carburetor companies when the automobile industry was moving from mechanical carburetors to electronic fuel injectors? With American fuel injector companies starving for human talent, and Japanese competitors taking market share, the government would have been spending money to keep people at the failing carburetor companies in order to "save jobs." Subsidizing losing companies traps people in dead-end jobs, prevents other companies from getting the talent they need, and gives our

international competitors an advantage.

Why We Shouldn't Imitate Japan

One of the most common--and erroneous--rationalizations for corporate welfare is that foreign governments give it out; America must do the same to remain competitive. Perhaps Europe is not an immediate threat, but what about Japan?

Sematech was formed at the height of the Japanese attack on the American semiconductor industry. The American semiconductor industry dominated the market from its origin in the 1960s through the 1970s. As late as 1982, America held a 57 percent to 32 percent chip market share advantage over Japan. But in the 1980s fortunes reversed, and by 1989 Japan actually took a 50 percent to 37 percent lead. Clyde Prestowitz, a long-time champion of corporate subsidies, wrote the book Trading Places,[12] and testified before Congress that Japan's semiconductor subsidies, channeled through its Ministry of International Trade and Industry, were responsible for the defeat. Prestowitz declared that the American semiconductor industry was lost to the Japanese and pondered whether or not the American computer industry could survive (both assertions were wrong). In 1993 I debated Prestowitz at the Cato Institute, where he went so far as to declare that the semiconductor industry was created by defense spending.[13] Nothing could have been further from the truth, yet Prestowitz was presented as an expert to justify subsidies to Silicon Valley, about which he knew very little.

I also debated Michael Maibach, the chief lobbyist for Intel Corporation, on public television in 1993. Maibach said that Sematech was needed to maintain the domestic supply of military chips. What if our military had to depend on Japan? That was another scare tactic used to justify corporate welfare. Even at its lowest point in 1989, America still manufactured 37 percent of the world's $49.7 billion worth of chips. The military rationalization for corporate welfare sounded sensible in Washington, but it had no rational basis. My company, Cypress Semiconductor, shipped 20 percent of its production to the military and had chips in the F-14, F-15, F-16, and F-18, as well as many of the guidance and weapons systems aboard those airplanes. My position was vindicated a few years later when Intel announced that it was voluntarily exiting the military chip business, despite its Sematech subsidy. Cypress still ships a wide variety of chips to the military.

Did MITI subsidies to the Japanese semiconductor industry hurt our chip companies? Were Japanese companies sharing secret data in a way that would violate American antitrust laws? The answer to both questions is no. In 1992 I convinced Yoshio Nishi to testify to that effect at a congressional hearing. Nishi, then the head of chip development at Hewlett Packard, had been head of the Very Large-Scale Integration program at Toshiba, one of the few MITI-
sponsored programs that seemed to work. The VLSI program was targeted at entering the dynamic random access memory, or DRAM, market, the biggest chip market in the

world. Japanese companies successfully entered that market en masse, causing Silicon Valley's three largest companies, Intel, Advanced Micro Devices, and National Semiconductor, to abandon the DRAM market. Intel later acknowledged that it felt it could have weathered the storm but chose to abandon DRAMs in order to put its full force behind microprocessor development. What a great decision that was. I was working in the memory group at Advanced Micro Devices at the time. We did exit the DRAM business because we could not make money in it. We felt that Japan was dumping DRAM chips into the United States, selling them below manufacturing cost.

In retrospect, I believe that Japan simply got better at manufacturing than we were for a while and was able to produce the chips at extremely competitive costs. Charlie Sporck, then president of National Semiconductor, was the father of Sematech. Sporck used the U.S. DRAM failure as a rallying cry.

Nishi ran the Toshiba DRAM program, which was the most successful of the Japanese efforts. He testified that there was very little financial aid from MITI to the Japanese semiconductor industry and also that the Japanese semiconductor companies--intense rivals--never shared secret information but only general "road map" information that allowed the companies to gauge the effectiveness of their programs and make sure they were headed in the right direction. Three important American semiconductor companies did remain in the DRAM race: Motorola, Texas Instruments, and thenstart-up Micron Technology in Boise, Idaho. Texas Instruments now manufactures DRAMs in plants around the world, and Micron has grown to be a $3 billion company known to be able to outmanufacture any of its Japanese rivals. The domestic military chip supply was never in danger, and MITI had very little to do with the Japanese success in the mid-1980s. Superbly managed Japanese companies simply beat us--for a while.

The tables have now turned. America again leads Japan in semiconductor market share. Intel's decision to focus on the microprocessor business, combined with its excellent execution, has propelled it to become the number-one semiconductor company in the world. America's semiconductor manufacturing capability has caught up with Japan's. Our focus on designing innovative chips has proven to be more important than Japan's focus on grinding out commodity chips at very low cost. Many of the American semiconductor companies that were very small start-ups at the time of Sematech's formation--Cypress Semiconductor, Altera, Xilinx, Linear Technology, Maxim, Micron Technology, LSI Logic, and VLSI Technology--are now substantial corporations with revenues of from $500 million to $3 billion. Those companies manufacture a dazzling variety of products. We all export to Japan. The innovativeness and resilience of the American semiconductor industry enabled it to react to the attack--and win. That success cannot be attributed to Sematech. None of us were members.

Although the MITI VLSI program was successful, the fact is that MITI has also

wasted huge amounts of money and has had many more failures than successes. For example, MITI's HDTV program spent $1 billion to define and dominate nextgeneration HDTV. Some American executives immediately appealed to Congress to get their corresponding piece of corporate welfare. The realities: (1) the United States won the HDTV race with a superior digital design, and (2) the only digital TV deployed today is not that burdensome, FCC-approved HDTV system but a digital enhancement of ordinary television.[14] MITI caused Japanese taxpayers (who live in homes with half the square feet per person of American homes) to lose $1 billion on its HDTV boondoggle.

TRON was a nickname for a fifth-generation computer partially funded by MITI that threatened to wipe out the U.S. computer industry. It turned out to be a loser, and the U.S. computer industry remains dominant. MITI support of the Japanese aircraft and biotech industries has also produced no tangible results.

MITI focuses on 13 Japanese industries. The four areas of heaviest emphasis are textiles, mining, basic metals, and chemicals. Despite that, those areas ranked low--13th, 12th, 10th, and 9th, respectively--in growth rate among the 13 industries. In response to the theory that MITI was not striving for growth in those industries but simply subsidizing declining industries to ease their pain, Harvard economist David Weinstein stated, "But if that is true, that makes Japanese industrial policy very like its French and American counterparts over the past four decades--political-ly driven, favor-based, [and] non-helpful to the nation's overall economic functioning."[15]

The economic model that says, "They've got subsidies; we need subsidies," is exactly wrong. America will be relatively much more competitive if we allow the nations with whom we compete to squander their taxpayers' money, while we encourage our companies to win without subsidies. It's like the Olympics: there comes the day when an athlete must walk alone into the arena of competition. The government cannot lift the weights and run the miles that one must to be a champion--only an individual can.

The fact is that, in West European nations and Japan, the choice to take money from citizens to pursue the "good ideas" of government has been consistently self-destructive to the economies. Socialism does not work. Socialism is immoral. We should abandon socialist programs like corporate welfare.

The Corporate Welfare Juggernaut and Its Lobbyists

One of the biggest barriers to eliminating the corporate welfare drain is the pork-barrel system itself: members of Congress are put in a lose-lose situation, forced to choose between voting down a significant subsidy for a home-state corporation or voting to continue corporate welfare. Congress recently faced the same situation in the downsizing of the military. Individual senators were very reluctant to vote to close major bases in their home states, yet everyone agreed that the Soviet collapse provided a great opportunity to reduce spending on obsolete bases. The solution drafted by Rep. Dick

Armey (R-Tex.)--to appoint an independent panel to bundle military cuts in a single bill for a yes or no vote without amendments--turned out to be a winner. It got the job done, and even in California where we were hit very hard by military downsizing, most of us believe that we are all better off. We should follow the same procedure with corporate welfare.

As the letter in the Appendix indicates, as a general rule, Silicon Valley CEOs like smaller government and lower taxes and are willing to forgo subsidies to achieve those goals. The popular impression that CEOs cling strongly to their corporate welfare is completely inaccurate and stems from two sources: (1) a few CEOs whose companies receive massive subsidies and who do fight for them and (2) industry lobbyists who are out of touch with the companies they allegedly represent.

In 1995 I testified before a House subcommittee;[16] my opponent was a lobbyist from the American Electronics Association. His testimony started with, "We represent 10,000 corporations. . . ." What struck me was that my company was a member of AEA and that we were paying this man to argue against me! The AEA was out of touch with the Silicon Valley CEOs I know and absolutely misrepresented my position. Furthermore, the AEA had never polled me to determine whether or not our company wanted them to lobby for maintaining Commerce Department subsidies. The AEA started as a Silicon Valley-based electronics organization. Now, like many other lobbying organizations, it has moved to Washington and been co-opted by the pork-barrel process. One unspoken assumption behind the AEA seems to be, "Our job is to bring home the pork for electronics companies." Although many of us agree with tactical positions taken by the AEA on workplace or technical issues, I know that there is no consensus support for pork-barrel politics among high-tech CEOs. When I returned home I fired the AEA; we are no longer a member.

We were also a member of the National Association of Manufacturers. As I noted earlier, I do not believe the American taxpayer should be compelled to subsidize the sale of American products overseas. A recent cover story of the NAM newsletter was titled, "NAM Report Proves Export Financing Is Critical to Job Creation." NAM favors taxing people to subsidize exports. They argue that the Japanese, French, and Spanish do it, and we must also in order to be competitive. In other words, they are using every tired argument I debunked in my testimony to justify their favored form of corporate welfare. I fired NAM after I saw that article.

Conclusion

Our government did best for its people when it stayed near its founding principles of free markets, limited government, and enlightened self-interest. It did better economically, and it did better morally.

The rationales for government's now taking more than one-third of what

Americans produce are couched in Washing-ton-speak and technobabble about American competitiveness and do not stand up to scrutiny. The words rationalize the workings of a system in which taxing and spending drive us in a downward economic spiral.

Congress should stop taking money from Americans for socialist subsidies. Companies do not need or want that kind of money. Capitalists make money from customers who voluntarily trade their money for the higher value we provide them.

We in Silicon Valley wish to declare our independence from the corporate welfare state. The difference between it and free-market capitalism is the difference between taking and giving, immorality and morality, poverty and wealth.

Appendix--Declaration of Independence: End Corporate Welfare

The high taxes that our company and its employees pay to support the current local-state-federal government tax burden of 35% of GDP hurts our economy more than any possible corporate benefit from government spending. If an independent commission similar to the military base-closing commission identified a fair and substantial government spending cut in the area of so-called "corporate welfare," I would support that cut, even if it meant funding cuts to my own company.

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Gale Aguilar, President, Mitem Corporation
Jim Ashbrook, Chairman of the Board, Prism Solutions, Inc.
Alex Balkanski, CEO, C-Cube Microsystems
Dado Banatao, Chairman, S3 Incorporated
Robert G. Barrett, Managing Partner, Battery Ventures
Allen Batts, President & CEO, Hello Direct
Don Bell, CEO, Bell Microproducts
Fred Bialek, Director, Cypress Semiconductor
John Blokker, President & CEO, Luxcom
Ted Buttner, President & CEO, Coastcom
Chuck K. Chan, General Partner, Alpine Technology Ventures
Robert Cohn, Chairman & CEO, Octel Communications
Samuel D. Colella, General Partner, Institutional Venture Partners
Scott Cook, Chairman, Intuit
Wilf Corrigan, CEO, LSI Logic
Joe Costello, President, Cadence Design Systems
Charles Crocker, Chairman, President & CEO, BEI Electronics Inc.
Frank DeRemer, President, MetaWare, Inc.
James V. Diller, Chairman & CEO, Sierra Semiconductor John Doerr, Partner, Kleiner, Perkins, Caufield & Dyers
Bruce Dunlevie, General Partner, Benchmark Capital
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John East, CEO, Actel Corporation
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Jack Gifford, CEO, Maxim Integrated Products
Michael L. Hackworth, President & CEO, Cirrus Logic
J. Emmett Hammond, President, Wireless Data Corporation
William L. Harry, CEO, Exclusive Design Company
Jim Hawkins, President & CEO, Invivo Corporation
Richard Hill, CEO, Novellus Systems
Mark B. Hoffman, CEO, Commerce One
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Norbert Laengrich, CEO, Embedded Performance, Inc.
Pierre Lamond, Partner, Sequoia Capital
Ray Latham, CEO, Computer Graphics Systems
Edward M. Leonard, Partner, Brobeck, Phleger & Harrison LLP
Jess R. Marzak, Managing Director, BankAmerica Ventures
Del W. Masters, President, Maxstrat Corporation
Michael McCarthy, President & CEO, Web Publishing, Inc.
Burton J. McMurtry, Venture Capitalist
Scott McNealy, CEO, Sun Microsystem
Gene R. Miller, President, Astec Semiconductor
Herman Miller, President & CEO, INET Corporation
Dubose Montgomery, Managing Director & General Partner, Menlo Ventures
James C. Morgan, Chairman & CEO, Applied Materials, Inc.
John Mullen, President & CEO, Dynamic Network Solutions, Inc.
Jack F. Nicholson, Managing Partner, Fell & Nicholson Technology Resources
M. Kenneth Oshman, CEO, Echelon Corporation
Len Perham, CEO, IDT
Richard Previtt, President, Advanced Micro Devices
John M. Richards, Chairman & CEO, Potlatch Corporation
Paul Rogan, President, Equipe Technologies
T. J. Rodgers, CEO, Cypress Semiconductor Duane J. Roth, Chairman, President & CEO, Alliance Pharmaceutical Corporation
Jerry Sanders, CEO, Advanced Micro Devices
Bryan Sheets, Principal, Paul Capital Partners
Al Shugart, Chairman, CEO & President, Seagate Technology
Phillips Smith, CEO, Zycad Corporation
Rodney Smith, CEO, Altera
John A. Sobrato, General Partner, Sobrato Development Companies
Robert M. Stafford, President, Stafford Capital Management
Tom Stemberg, Chairman & CEO, Staples
George Still, Partner, Norwest Venture Capital
Bob Swanson, CEO, Linear Technology
Ronald Swenson, Partner, Western Technology Investment
Robert L. Tillman, President & CEO,

Sunshine Medical Instruments, Inc.
Lou Tomasetta, President & CEO,
Vitesse Semiconductor
Michael Troy, CEO, Knowl edgePoint
Thomas Van Overbeck, CEO,
Cornerstone Imaging
Ken Virnig, President, Devine and
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Bernard Vonderschmitt, Chairman,
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Thomas W. Weisel, Chairman & CEO,
Montgomery Securities
William H. Welling, CEO, Xiox
Corporation
Robert White, Principal, Montgomery
Securities
Curt Wozniak, CEO, Electroglas, Inc.

Notes

1. Stephen Moore and Dean Stansel, "Ending Corporate Welfare As We Know It," Cato Institute Policy Analysis no. 225, May 12, 1995.

2. Roger Pilon, "On the Folly and Illegitimacy of Industrial Policy," Stanford Law and Policy Review 5, no. 1 (Fall 1993): 103-18.

3. U.S. Department of Commerce, Bureau of the Census, Historical Statistics of the United States: Colonial Times to 1970 (Washington: Government Printing Office, 1975), part 1, p. 224; and U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business 77, no. 8 (August 1997): 138, Table 8.3.

4. Jeremy Atack and Peter Passell, A New Economic View of American History from Colonial Times to 1940 (New York: W. W. Norton, 1994), estimates U.S. GDP per capita in 1775 as $60, equivalent to $919 in 1996 dollars.

5. U.S. Department of Commerce, Bureau of Economic Analysis, p. 138, Table 8.3.

6. Moore and Stansel.

7. Brink Lindsey, "DRAM Scam: How the United States Built an Industrial Policy on Sand," Reason, February 1992, pp. 40-48.

8. Jerry Sanders, for 28 years the CEO of Silicon Valley's third biggest chip company, Advanced Micro Devices, is a board member of Sematech. He would disagree with a lot of what I've said. Also, it was his company that I left to start my company. He challenged me on that issue, too. Cypress and AMD are competitors who have disagreed in court--twice--on intellectual property issues. But Sanders and I agree on one statement, the one he and I and more than 50 other Silicon Valley CEOs signed asking Congress to cut off corporate welfare.

9. LSI Logic's CEO is Wilf Corrigan, a friend and competitor. Wilf and I agree on ending corporate welfare, as his signature at the end of the corporate welfare letter attests.

10. NASA's technobabble is award winning: "molecular beam epitaxy" doing "ordered growth" in an "atom by atom manner" of "near theoretical" atomic quality in an "ultra-vacuum of 10^{-14} torr" as part of a "cost and time-efficient program," which "could be a model for future commercial space endeavors."

11. Dean Stansel and Stephen Moore, "Federal Aid to Dependent Corporations," Cato Institute Briefing Paper no. 28, May 1, 1997.

12. Clyde V. Prestowitz, Trading Places: How We Are Giving Our Future to Japan and How to Reclaim It (New York: Basic Books, 1989).

13. T. J. Rodgers and Clyde V. Prestowitz, "Is Technology on the Right Track?" Cato Institute Policy Forum, March 25, 1993.

14. Prediction: I have a 2,000-line, super-enhanced TV in my house that qualifies as HDTV but uses a normal TV input signal. That system will be deployed commercially, and the expensive new HDTV being pushed on a reluctant industry by the FCC will stall; no wonder CBS and NBC want ATP grants to build the first HDTV station.

15. Richard Beason and David Weinstein, "The MITI Myth," International Policy Economist, July-August 1995.

16. T. J. Rodgers, Testimony on H.R. 1765, the Department of Commerce Dismantling Act, before the Subcommittee on Government Management, Information and Technology of the House Committee on Government Reform and Oversight, September 6, 1995.