Currents

Overlooking Gompers

My office in the new Cato building overlooks a memorial to Samuel Gompers, one of the founders of the American labor movement. In his honor, let me express what would be a shared concern about current conditions in the American labor market:

• Average real weekly earnings for nonsupervisory employees have declined about 17 percent since 1973, the combination of declines in both average real wages and hours worked per week.

• Total employment has only recently recovered to the level of the spring of 1990, the combination of a decline in full-time employment and a roughly offsetting increase in part-time employment. In the meantime, however, the labor force increased by about 2.5 million and the unemployment rate from 5.3 percent to 6.8 percent.

As a rule, such conditions are limited to recessions, reflecting a general but temporary decline in final demand. Real earnings, however, have now declined for 20 years, a period in which total output increased more than 50 percent. And full-time employment has now declined for three years, a period in which total output increased about 3 percent. Other anomalies of the current recovery include a continued increase in part-time employment and the highest rate of overtime in manufacturing since World War II. Something quite different has happened in recent years.

The most important general condition affecting the U.S. labor market has been the slow rate of productivity growth. Output per hour in the business sector has increased at a 0.9 percent annual rate since 1973, about one-third the rate of the prior 20 years. The reasons for this substantial decline in productivity growth are not thoroughly understood but include at least the following conditions:

• The average test scores of new high school graduates have declined almost continuously since 1963.

• The net saving rate declined sharply in the 1980s, reflecting both a substantial decline in the private saving rate and the substantial increase in the federal deficit.

• And the rapid increase in health, safety, environmental, and energy regulations reduced the share of new private investment that is productivity enhancing.

The slow rate of productivity growth, in turn, set an upper limit on the growth of the average real compensation per hour.

The increased role of international trade increased the demand for high-skilled labor and increased the effective supply of low-skilled labor, a condition that has affected all of the advanced economies. The result has been a reduction in the real compensation per hour of nonsupervisory employees relative to average real compensation.

The payroll costs of health insurance, social security, and workers compensation increased rapidly. That reduced real wages relative to real compensation per hour. The increase in the real cost of fringe benefits appears to be the major reason for the increased relative use of part-time employees (who are not eligible for some fringe benefits) and overtime labor (which does not increase the cost of some fringe benefits).

Each of these conditions would have substantially changed conditions in the American labor market in the absence of changes in labor legislation and regulation. Over the past decade, however, the federal and state governments have initiated a new round of restrictions on labor contracts, usually for noble objectives but without apparent concern about the side effects. Those measures overlook the insight of Samuel Gompers that "the greatest sin that a businessman can commit against a worker is to operate a business without a profit because then there is no security for the worker." State courts

have progressively restricted the conditions for which employees may be dismissed. In 1988, Congress approved legislation requiring advance notice of plant closings. Such measures, by gradually transforming labor from a variable cost to a fixed cost, have reduced the growth of full-time employment and increased the unemployment rate. Those effects are more apparent in Europe, where such measures were implemented earlier. Since the 1970s, for example, the unemployment rate in Europe has increased from several points below the U.S. rate to several points higher.

The amount of new labor legislation increased during the Bush administration. Bush, for example, endorsed an increase in the minimum wage, the Americans with Disabilities Act, and the Civil Rights Act of 1991. Late in 1992, Bush appointees to the National Labor Relations Board ruled that labor-management cooperation may be illegal unless organized by a union. Those and other policies, of course, had severe consequences during the Bush years, with the lowest rate of output and employment growth of any administration since World War II.

"Jobs" was a major issue during the 1992 presidential campaign, and Clinton won that election, in part, because Bush's record was so weak. Both Bush and Clinton, however, seem to share a strange economic theory that the way to increase employment is to increase the cost of labor. Consistent with this perspective, the first bill signed by President Clinton was the Family and Medical Leave Act. And Clinton will probably endorse another increase in the minimum wage, restrictions on striker replacement, mandated training, and mandated health insurance. Each of these measures will increase the cost of labor and reduce the growth of employment. There is little reason to expect the Clinton record to be better than that of Bush, except that he begins his term during the early stages of a moderate recovery.

Stay tuned. "Jobs" will probably be a major issue of the next campaign. More on these topics in future issues of your favorite magazine.

William A. Niskanen

NAFTA and Creative Destruction

In our previous issue we featured an article by Roberto Salinas-León on environmentalist opposition to the North American Free Trade Agreement (see "Green Herrings," Winter 1993 issue). Unfortunately, the article apparently went unread by U.S. District Judge Charles Richey, who recently cast NAFTA into legal limbo on the ground that it threatened the environment. The ruling is being appealed, but a decision by the D.C. Circuit is not expected until sometime this fall.

Assuming the legal obstacles are cleared, a difficult political battle in Congress still remains to be fought. Environmental issues will of course be important, but here I would like to address the other main focus of the NAFTA debate: fear of massive job losses. To quote Ross Perot, who still outranks Judge Richey as NAFTA's best-known detractor: "If this agreement is signed as it is currently drafted, the next thing you hear will be a giant sucking sound as the remainder of our manufacturing jobs . . . get pulled across our southern border."

Opposition to free trade in the name of "saving jobs" is, of course, nothing new. But in the NAFTA context this stock protectionist argument has taken a novel twist. Usually the worry is about what foreign companies will do to their U.S. rivals if trade barriers are removed; with NAFTA, though, the worry is about what U.S. companies will do to their own workers.

According to NAFTA opponents, the agreement will result in an exodus of American manufacturing down to Mexico to take advantage of its low-wage labor. Over time, they say, the migration of jobs from the United States to Mexico will drag wages and living standards in the former down to the level of the latter. Walter Russell Mead, in an article last fall in *Harper's* attacking the whole agenda of trade liberalization, pungently summarized this viewpoint: "GATT and NAFTA are about more than sending First World factories into the Third World; they are about importing Third World economic pressures and social conditions into the West."

The usual rejoinder by supporters of the agreement is that NAFTA will also also create jobs in this country—high-wage, high value-added jobs no less—by boosting U.S. exports to Mexico. What then ensues is a statistical food fight as the two sides hurl a seemingly endless barrage of job-loss and job-gain estimates at each other, estimates that range from the hopelessly speculative to the utterly bogus.

The Clinton administration, meanwhile, is trying to split the difference. It supports NAFTA in principle, but at the same time is watering down the agreement with a side deal on labor issues (as well

as an additional side agreement on the environment).

All the controversy over possible job losses and gains is misplaced. While the net job-gainers appear to me to have the better of the argument, the argument is better avoided altogether. The case for greater economic integration with Mexico (or any other country, for that matter) does not rest in the balance of direct employment effects. The proper aim of trade policy (and economic policy in general) isn't job creation; it's wealth creation. Increase the productivity of U.S. businesses and "good jobs at good wages" will take care of themselves. By that standard, expanding the opportunities for Americans to invest in Mexico—including moving production operations there—is an unalloyed benefit for the U.S. economy. It need not be apologized for or explained away or compensated for by benefits to other sectors of the economy.

Before examining how U.S. investment in Mexico benefits us here at home, I think it would be useful to get a few facts straight on the general subject of U.S. foreign direct investment (FDI). (Direct investment refers to actual ownership or control of foreign companies, as opposed to portfolio investment in foreign securities.) There is a widespread belief that over the past decade or so, U.S. manufacturing companies have been evacuating the country and staging a massive relocation to low-wage Third World countries like Mexico. This is part of the "hollowing out" or "deindustrialization" of the U.S. economy alleged by the America-in-decline camp. The belief, though, is unsupported by the facts.

U.S. gross private nonresidential investment in 1991 was $550 billion; by comparison, total direct investment abroad by U.S. companies in that year was only about $28 billion. Of that $28 billion, $19 billion—or 67 percent—went to developed countries (only about $2 billion went to Mexico). This was by no means a one-year fluke: industrialized countries presently host about 75 percent of total U.S. foreign direct investments.

Yes, some American companies have moved offshore for lower labor costs—for example, moves to Mexico by Zenith and Smith-Corona have grabbed attention in recent months. In the overall picture, though, the scale of such relocations has been relatively modest. Most FDI by U.S. companies is motivated by other goals: getting closer to key customers or suppliers, keeping in touch with what major competitors are doing, avoiding foreign-exchange risks, slipping underneath protectionist barriers. If cheap labor were the dominant consideration, most U.S. FDI dollars wouldn't be going to Europe and Japan.

Worldwide, the most popular target for FDI has not been low-wage developing countries; it has been the United States. During the period 1978-1989, the United States received FDI totalling $403 billion (in 1989 dollars), compared to only $188 billion received by developing countries. Foreigners have been building more factories here than Americans have been moving abroad—no surprise, since a capital surplus is the flipside of our much-ballyhooed trade deficit. And more generally, the takeoff in FDI during the past decade has been overwhelmingly an intra-OECD affair. From 1980-1989, approximately 83 percent of total FDI went to the following five countries: the United States (49 percent); the United Kingdom (17 percent); France (6 percent); Spain (6 percent): and Australia (5 percent).

Even investment in developing countries does not generally fit the stereotype of offshore cheap-labor assembly for the U.S. market. Mexican affiliates of U.S. firms made 70 percent of their total sales revenue from *local* sales in 1990. Clearly, access to the booming Mexican market has been a bigger factor in U.S. investment decisions than reducing the costs of serving the home market. Indeed, many of the fastest growing American enterprises in Mexico are in the service sector—hotels, restaurants, banks, insurance companies, and so forth. In 1990, over 30 percent of U.S. FDI in Mexico was in the service sector.

Finally, it should be pointed out that companies seeking to use Mexico (or other cheap-labor countries) as a low-wage assembly platform have had that opportunity for a long time. Since 1965 the Mexican *maquiladora* program has allowed foreign-owned assembly plants to locate in Mexico and import components duty-free, provided they then export what they manufacture. Many other countries have similar arrangements. And the U.S. tariff code allows companies to import goods assembled offshore from U.S. components and pay duties only on the value added in the country of assembly. Given that the value added consists

only of cheap labor costs, U.S. companies are able to assemble offshore with a very minor tariff burden. NAFTA would eliminate those tariffs altogether, but that does not amount to a dramatic change in the currently prevailing incentive structure. For those who panic that NAFTA will transform Mexico into one huge sweatshop for the American market, relax—if that were in the cards it would have happened already.

Now, on to the meat of the issue. So far, all I have done is show that a wholesale move of U.S. industry to Mexico and other developing countries hasn't been occurring and, furthermore, isn't going to occur just because of NAFTA. Nevertheless, many U.S. companies are globalizing their production operations, and part of that process involves moving labor-intensive operations to low-wage parts of the world. NAFTA will, if only moderately, further stimulate that trend. The question remains, then, how substituting cheap foreign labor for American workers—to whatever degree it occurs—benefits the American economy.

Ask a simple question, get a simple answer. Moving production operations to where they can be performed more cheaply lowers the costs—and thus raises the productivity—of the companies making the move. In general, economic productivity increases along two different axes: either creating new value for customers, or reducing the cost of supplying existing value. Either way, the pursuit of increased productivity—or what amounts to the same thing, the pursuit of wealth creation—is a game of trying to get more for less. More value for less cost or effort is the whole point of economic activity. The only way real wages can rise sustainably, the only way that living standards can rise sustainably, is if people become more productive, *i.e.*, if their efforts create more value. Reducing labor costs through plant relocation is part of the overall wealth-creating endeavor of getting more for less.

Most people grasp this point much more readily in the analogous case of labor-saving machinery. Suppose your company manufactures widgets, and intermediate assembly requires one man-hour of labor per unit at a cost of $15 per hour. Now suppose that you automate that intermediate assembly stage with new robotic equipment whose cost per unit works out to only $10. Obviously your company is now more efficient, more productive: a stage of production that once cost $15 per unit now costs $10. The productivity improvement made possible by your company's capital investment, combined with similar investments by countless thousands of other companies, all help to power economic growth and raise American living standards.

Moving assembly operations to Mexico can accomplish precisely the same beneficial result. Replace $15-per-hour American labor with $2-per-hour Mexican labor, assume constant assembly man-hours per unit, and assume per-unit costs of building and operating the new Mexican plant of $8 per unit. Relocating to Mexico gives your company exactly the same cost reductions as the hypothetical robot above. This is not to say that plant relocations are a panacea; on the contrary, they only pay under certain limited conditions. But they can play an important part in improving the productivity of a company's production operations; combined with capital investment, and new product development, and new organizational structures, and new management techniques, they are the stuff of economic progress and rising prosperity.

NAFTA opponents do not grasp this basic point. Consider the following remarkable passage from an article in the Milken Institute's *Jobs & Capital* by University of Wisconsin-Madison economist John M. Culbertson (to exonerate the Milken Institute, let me say that the article was run in a debate format, with James Bovard taking the pro-NAFTA position): "Improving genuine economic efficiency requires producing a given output with fewer inputs. Cutting costs by shifting production to a low-wage, low-standards economy, exploiting differences among nations in regulatory standards, population pressures, and wage levels does not free up any resources for other uses."

That is the sheerest nonsense. Shifting production does lead to "producing a given output with fewer inputs"—that's the whole point. It is as "genuine" a way to improve productivity as any other. Furthermore, of course resources are freed up by shifting production: dollars are saved, and manpower and resources cut loose by the relocating company are now available to contribute to other sectors of the economy. Dr. Culbertson, more explicitly than most, demonstrates the economic illiteracy on which the case for protectionism rests.

But what about the workers who lose their jobs? In either case—the investment in new equipment or the move to Mexico—assembly workers lose their jobs, and may suffer dislocation and hardship as a result. An unemployed widget assembler is no

less unemployed because he was replaced by a robot than he would be had he been replaced by a Mexican. Such dislocations, though real, are localized and short-term costs; moreover, they are necessary to the ongoing process of creative destruction. Our society grows richer because less productive ways of doing things are constantly being replaced by more productive ways of doing things. A necessary corollary is that costs fall on those who built their careers on the superceded old ways.

And what about the argument that American wages are undermined by Mexicans' and others' effective underbidding? Quoting Mead's article in *Harper's* once again: "The knowledge that factories could move to the Philippines has caused American workers to moderate their wage demands even in factories that did not move. Despite rising productivity, real U.S. wages for non-supervisory private-sector employees peaked in 1972 and have dropped ever since—20 percent in 20 years."

Leaving aside Mead's dubious wage statistics, the argument is a loser. By Mead's logic all capital investments and corporate restructurings that reduce payrolls should be equally as malignant as foreign direct investment, since they, too, hold wage demands in check through the threat of layoffs. Underbidding by new equipment and new organization charts is just as real as underbidding by Mexicans; indeed, the former dwarfs FDI in magnitude. What Mead fails to notice is the new wealth created by FDI and other productivity improvements, wealth which ripples through the economy and bids up demand (and wages) in other sectors. He also fails to see how payroll reductions in some sectors, from whatever cause, free up resources that can then be absorbed by expanding, more productive sectors. In short, he doesn't understand how creation and destruction are intertwined in a dynamic, growing market economy.

In the end, for those who care about good policy, the NAFTA jobs debate is a bogus diversion: a blue-collar herring to accompany the green herrings of the debate over NAFTA's environmental effects. When one focuses on the real economic issue—raising American living standards by improving productivity—the case for NAFTA is straightforward and simple. Of course, the real *political* issue is something different: usually, as here, it's patronage. Casting the NAFTA debate in terms of jobs puts politicians in the role of distributing spoils and sinecures—jobs won or lost based on their votes. From that perspective, the NAFTA jobs debate, and the Clinton administration's mushy side-agreement compromise, makes perfect sense.

Brink Lindsey

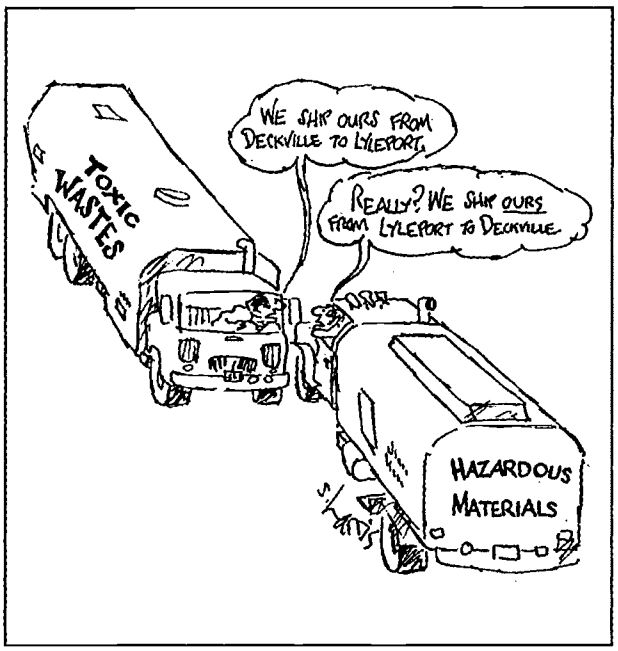
The Hazards of Regulating Hazardous Waste

The direct annual costs of the government's programs to regulate the management, storage, treatment, and disposal of hazardous waste—implemented under the authority of the Resource Conservation and Recovery Act (RCRA) of 1976 and its 1984 amendments—may be as high as $30 billion. Should the 103rd Congress opt to "strengthen" RCRA's hazardous waste provisions, those costs would be even higher.

While analysts typically focus on the costs of those regulations to businesses, few consider their negative effect on the environment. Indeed, while hazardous waste regulations are intended to preserve environmental quality, the environment actually suffers from many of the mandates enacted for its protection.

Federal officials have repeatedly expressed the view that landfilling is the least desirable option for hazardous waste. While that preference may well be based on overly conservative assessments of the risks posed by hazardous waste, it is understandable why they would prefer other disposal methods—particularly reuse and recycling—to landfilling. When permitted, such activities can reduce the costs of both waste disposal and production inputs.

Because several Superfund sites are former hazardous waste recycling facilities, however, there are stringent state and federal regulations governing all aspects of hazardous waste management. Indeed, to address those concerns, Richard Fortuna, executive director of the Hazardous Waste Treatment Council, has called for Congress to "establish a comprehensive system of preventive controls over waste recycling practices." Others have called for the establishment of an additional RCRA subtitle to deal solely with the recycling of industrial materials.



Under existing regulation the transportation, storage, use, or disposal of any material that is classified as a hazardous waste is immediately subject to a wide range of stringent permitting requirements—everything from land-use restrictions to requirements for particular types of security systems at hazardous waste facilities. In many cases permits are required even when those materials are to be reused or recycled in the same industrial facility in which they are produced. Obtaining a hazardous waste permit can be tremendously expensive—anywhere from $10,000 to $1,000,000 per permit. Moreover, the Environmental Protection Agency has reported that obtaining the necessary permits takes an average of two to three years, and the appeals process is similarly long. State implementation of RCRA's "corrective action" provisions can even impose such costs on firms seeking permits for hazardous waste cleanup or mitigation.

Because permitting for hazardous waste activities is so expensive in both time and money, firms understandably seek to avoid being subject to those regulations. Companies try to minimize their activities involving hazardous waste and opt for the disposal methods covered by the least onerous permitting requirements. Thus, simple land disposal becomes preferable to other disposal options that, although more environmentally benign, are regulated by more stringent requirements.

Those regulatory hurdles also inhibit the development of cleaner and more advanced disposal technologies. While developing a new incinerator, for example, expensive permits throughout the construction process increase the costs of developing more advanced facilities relative to other investments. Similarly, as the permitting process becomes increasingly subject to political pressures—as demonstrated by the controversy concerning the WTI waste incinerator in East Liverpool, Ohio—business executives will decline to invest in developing advanced environmental technologies.

Hazardous waste regulations often apply to substances that would normally not be recognized as either "hazardous" or even "wastes." As the EPA has itself acknowledged, "the definitions of 'solid waste' and 'hazardous waste' are exceedingly difficult to understand even for the most experienced staff." Nonetheless, businesses are expected to be aware of the regulatory requirements and to comply on time. The EPA's RCRA Implementation Study declared that "a regulated hazardous waste handler must do hundreds of things correctly to fully comply with the regulations, yet doing only one thing wrong makes the handler a violator." As the reach of the RCRA program has expanded, small businesses, from film developers to dry cleaners, have been forced to bear a portion of RCRA's costs.

Any discarded material that the EPA judges to be sufficiently ignitable, corrosive, reactive, or toxic is classified as a "hazardous waste." The result is that many common items, from charcoal lighter fluid to household cleaners, would be classified as hazardous wastes if firms rather than private homes disposed of sufficient quantities of them. But the management of those substances before disposal is rarely the subject of stringent regulation. It is generally accepted that environmental harm in those cases can be addressed through penalties and required cleanups after the fact.

Similarly, any substance that is mixed with or derived from a listed hazardous waste is automatically classified as a hazardous waste as well. Interestingly, that presumes that hazardous waste treatment is a failure, since the end-product from such activities is still considered hazardous. To get a substance removed from classification as a hazardous waste requires petitioning the EPA and demonstrating that the substance no longer fits the definition of hazardous. That, in itself, is no easy task. The EPA acknowledges that the process is "slow, onerous, ineffective, and at times controver-

sial."

Moreover, there is confusion as to what actually constitutes the "disposal" of a substance. Many firms wish to reuse or recycle the by-products of certain industrial practices for other applications. If those activities require the reclamation of recyclable industrial by-products, however, the firms are typically regulated as if they were engaged in the handling of wastes as opposed to industrial materials. For firms that do not wish to have their manufacturing procedures regulated as hazardous waste management there is only one option: use raw materials instead of "waste" from other processes. That inevitably results in an increase in hazardous waste disposal as well as an increase in resource use—all because of regulatory overreach.

Consider the experience of one company in New England that manufactures paints, inks, and other coatings. One of the materials used is methyl ketone. When the machinery is cleaned, a sludge that includes significant quantities of methyl ketone is recovered. In some cases the sludge is collected for distillation so that the methyl ketone can be reused. The company typically distills the sludge within a week of collection in another part of the coating plant. The sludge is classified as a "waste" merely because the firm is incapable of demonstrating conclusively that it recycles all of the sludge collected within one year of collection and that it does not collect sludge with the intent of profiting speculatively on resale.

In response, the firm sought an exemption from some of the hazardous waste management regulations under the RCRA provision that exempts recycling processes that are "an essential part" of the industrial production process. Yet because the still in which the sludge is recycled is located in a separate part of the coating plant, regulators did not allow the exemption. As a result, the firm is subject to an additional round of reporting, labelling, and handling requirements. For a small firm with a few dozen employees even such "unburdensome" requirements can impose significant costs, particularly in work hours spent filling out regulatory permits instead of filling product orders.

To address many of the current problems, some have proposed adding an additional layer of regulation to accommodate those firms wishing to engage in reclamation, recycling, and reuse of hazardous wastes. In essence those analysts would impose additional regulations to rectify an existing problem of overregulation. The major problem with the current regulatory regime, however, is an overly restrictive and rigid system that forces affected parties to focus more on fulfilling bureaucratic requirements than on protecting public health and the environment from significant threats.

A more productive approach would be to shift the emphasis of hazardous waste rules from preemptive action to punitive sanctions against those who materially harm individuals or property. Environmental harm, after all, does not result from misfiling a permit, but from polluting land, water, or air. Essentially, that would shift hazardous waste management away from administrative regulation and toward tort law.

The purpose of RCRA should be to protect human health and the environment, not to burden industrial activities with red tape. Disincentives to pollute should arise from liability for damage done, not from petty fines from misfiling permits. Such an approach would give business owners the ability to innovate and develop new industrial processes—many of which would benefit the environment through their use of recycling and increased efficiency—without requiring prior approval from EPA bureaucrats. Moreover, the EPA needs to ground its regulatory activities in sound scientific assessments of environmental risks.

Policymakers need to recognize that the solution to every environmental problem is not always the creation of more regulations and more bureaucratic oversight of economic activities. Indeed, the contemporary reliance on centralized regulatory approaches to environmental protection often compromises the very goals it seeks to attain.

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Industrial Policy by any Other Name

An interventionist technology policy represents, as Samuel Johnson said of second marriages, "the triumph of hope over experience." As history amply shows, government's real talent lies in thwarting new technologies at the behest of vested interests claiming "unfair competition."

The government initially suppressed radio at the behest of the newspapers, strictly limiting news broadcasts and requiring stations to refer listeners to their local newspaper "for more details." Then radio became established and joined with newspa-

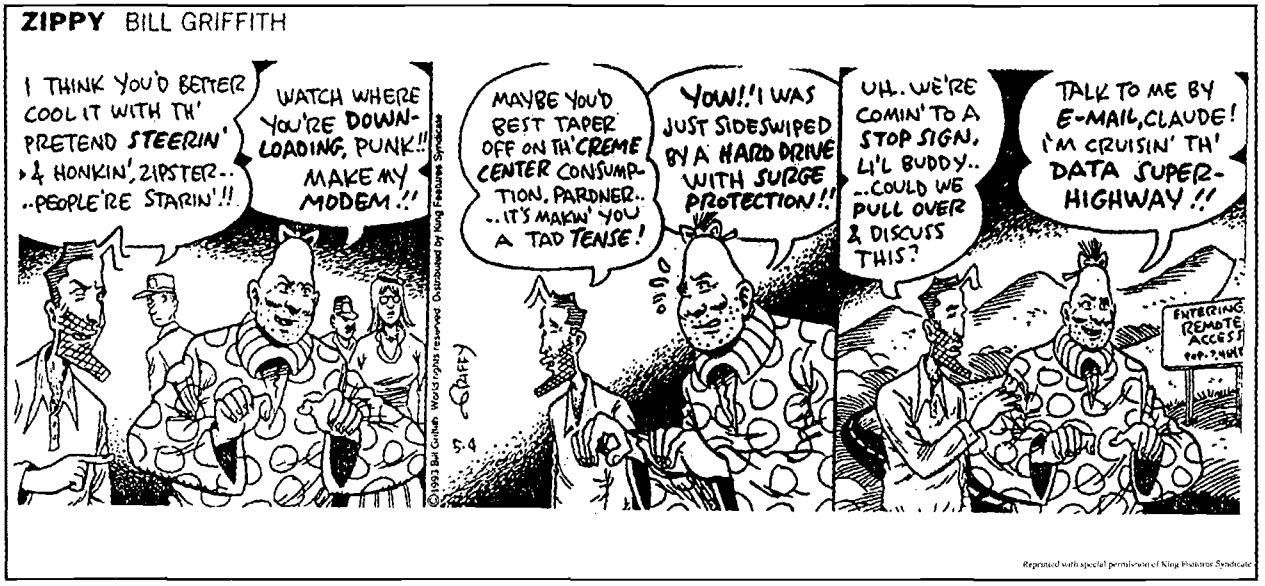
pers and the movie studios in urging government to try to suppress broadcast television. Television broadcasters, in turn, waged such a successful regulatory war against cable that they would have killed it but for the intervention of the courts (which remembered, just in time, that there was something called the First Amendment). Now the cable industry has become a powerful monopolist in its own right, and has successfully snookered Congress into suppressing competition from a telephone industry eager to leave the 19th century technology of copper wires behind.

But suppose we leave behind our hard-earned cynicism and try to believe that the Clinton administration's new technology policy initiatives will somehow be different. After all, the administration's technlogy policy blueprint, "Technology for America's Economic Growth, A New Direction to Build Economic Strength," sets forth goals that sound very forward-looking and innovation-friendly: "play a key role helping private firms develop and profit from innovations . . . unleash the creative energies of innovators throughout the economy by creating a market that rewards invention and enterprise . . . design a national communications policy that will ensure rapid introduction of new communications technology," all through "directly supporting the development, commercialization, and deployment of new technology." Let's assume that the Clinton team will be able to turn a deaf ear to self-serving or protectionist pleas from politically powerful industries and make a sincere effort to guide technology in the "right" direction.

Even if we assume this integrity and goodwill, what possible reason is there to believe that Clinton's technocrats will be able to discern the most fruitful path for civilian R&D? Absolutely none, of course. As history amply shows, government consistently guesses wrong.

Take just two examples, both dealing with one of the keys to the Clinton vision of the wonderful role the government can play in a high-tech future: communications technologies. In the 1970s, everyone in and out of government believed that the future of computing was in the mainframe and that telecommunications would be the only way for smaller users to access computers on a "time-sharing" basis. The Federal Communications Commission developed elaborate regulations to police the border between computing and telecommunications—ostensibly to prevent one monopoly from polluting the other—and hence eliminated IBM's most natural potential competitor, AT&T, and temporarily relegated the nation's phone system to the technological backwaters. Then the Department of Justice launched its huge and ultimately fruitless antitrust suit against Big Blue itself.

Meanwhile, Robert Noyce was perfecting Jack Kilbey's design for the integrated circuit, which combined ever smaller transistors with capacitors. His new company, Intel, became master of the microprocessor, the computer on a chip, that would transform both telephony and computing. And, while the government was busy telling a court in the Big Apple that the future lay in mainframes, Steve Wozniak was putting together a little Apple, the first personal computer, in his garage in what is now known as Silicon Valley.



Naturally, neither the Intel microprocessor nor the Apple computer would have received funds from a Clintonesque high-tech program. Those funds would have gone to the dinosaurs being built by IBM and a few others, thus propping up a technology about to topple of its own weight. The point is not that government is stupid; when it comes to new technologies, almost everybody is stupid, except a few off-beat geniuses like Noyce and Wozniak, not the sort of people a technology program such as Clinton's would notice in any event.

The past experience of the Pentagon's Defense Advance Research Project Agency (DARPA, recently renamed ARPA) in this area is instructive. Not until a full decade after the microprocessor revolution began did DARPA jump on the bandwagon with seed money for research into Reduced Instruction Set Computing (RISC) and for Sematech, a singularly unsuccessful consortium of U.S. companies dedicated to advanced chip technology. Moreover, to the extent that DARPA has had successes, Clinton's program—in which the Commerce Department's National Institute for Standards and Technology (NIST) will act as lead agency—is unlikely to share them. At least DARPA was at base a customer (the military) telling the market what it wanted to buy and backing up its choices with money for R&D. DARPA could make itself right by buying what it asked for (or by blaming Congress for failure to allocate the necessary funds). NIST will just be like a wealthy alum, cheering from the sidelines and slipping cash to his favorite players. It cannot change the score on the field.

For a second example, look at analog high definition television (HDTV). A few years ago, the Japanese, guided by their Ministry of Trade and Information (the supposedly infallible MITI that has so inspired industrial policy supporters here), were years ahead of us in developing this technology. All the pundits (except George Gilder) were saying that we didn't stand a chance unless government jump-started civilian research, because entrepreneurs were too short-sighted to realize what a great opportunity they were missing. But the entrepreneurs, who have to put up their own money, turned out to be a lot smarter than the pundits. Analog HDTV was stillborn; digital is the wave of the future, and our televisions will soon become mini-computers capable of storing and manipulating huge volumes of data in movie-quality images. The Japanese don't know what hit them on that one. If NIST were making our decisions for us, we wouldn't either.

Centralized authority doesn't get any smarter when it shifts its "investments" from "technologies" to "infrastructure," another favorite buzzword of the new Democrats. We do seem to need a broadband communications pipe to the home, something to feed all those mini-computers that will replace our TV sets. Al Gore says it should be fiber optic cable—tiny strands of glass capable of carrying huge volumes of information in the form of light. He may be right. But "glassing America" will cost hundreds of billions of dollars. Digital radio could prove a cheaper solution for communications in the last mile to the home or office, and it offers the added convenience of mobility. Or perhaps new compression techniques will vastly expand the capacity of existing copper wire. Which will win out? Or is there yet another option? Nobody knows, except maybe some budding Wozniak tinkering in his garage.

The point of these examples is simple: no centralized authority can handpick the technology of the future or the best high-tech infrastructure. The more uncertainty we face, the more we must depend upon a dispersal of energy and intelligence to develop creative solutions. Then, when any one person or group succeeds, the rest can follow up on the advance.

NIST can place a small number of big bets on new technologies: a couple of hundred projects, a thousand at the most. Any more would require a massive, unwieldy bureaucracy. But what we need are a huge number of small bets: tens of thousands of entrepreneurs betting their own time and money on an uncountable number of projects, most of which will amount to nothing.

We don't need the government for that. A huge number of small bets is what the market system is all about. Government doesn't have to do anything to make it work except ensure that government itself doesn't take away the market incentives that lead the entrepreneurs to commit their time and intelligence to begin with.

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