INDUSTRIAL POLICY

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HEARING

BEFORE THE

JOINT ECONOMIC COMMITTEE

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TUESDAY, MAY 18, 1982

CONGRESS OF THE UNITED STATES,
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The committee met, pursuant to notice, at 10 a.m., in room 2247, Rayburn House Office Building, Hon. Henry S. Reuss (chairman of the committee) presiding.

Present: Representatives Reuss, Long, and Richmond.

Also present: James K. Galbraith, executive director; Louis C. Krauthoff II, assistant director; and Mary E. Eccles, Chuck Ludlam, and Richard Vedder, professional staff members.

OPENING STATEMENT OF REPRESENTATIVE REUSS, CHAIRMAN

Representative REUSS. Good morning. The Joint Economic Committee will be in order for further hearings on new directions in industrial policy.

The debate over that has come a long way. In place of the sterile arguments over picking winners or backing losers, there is a growing recognition that Government—even without a stated industrial policy—does favor the growth of some industries over others.

Whether by chance or by design, the combination of tax, trade, monetary, spending, and regulatory policies produces an implicit industrial policy with highly uneven results. In the United States, trade policies tend to benefit older industrial sectors like steel, autos, and textiles, at the expense of newer, high-technology products. Provisions like the investment tax credit and accelerated depreciation favor capital-intensive industries over labor-intensive ones; federal procurement and research and development expenditures give a big boost to aircraft and other defense-related industries. And even the Reagan administration—despite its disinterest in the idea of industrial policy—has produced a program that is anything but neutral in its impact: high interest rates and recession have badly hurt housing construction, autos, and other basic industries—some of the same sectors other Government polices are aiming to help.

The tough question isn't whether, but how we improve upon this disjointed, often ad hoc series of actions that currently shapes our country's industrial development? One starting place, we modestly assert, could be the approach outlined by the Joint Economic Committee Democrats in the 1982 annual report which included, among others: coupling Government assistance to basic industries with plans for promoting modernization, reorganization, and adjustment; coordinating policies to encourage adjustment of firms with retraining

and other forms of assistance to displaced workers and their hometowns; encouragement of "catalytic industries"—and here we've identified such things as semiconductors, coal, and high-speed passenger rail service—which could play a pivotal role in generating new jobs and increasing competitiveness on a much wider basis. To help potential catalysts, the Government should seek to improve access to credit, upgrade physical infrastructure, encourage training and R. & D., and forge new partnerships with the private sector.

Today's witnesses offer major new insights on the utility of industrial policy here and abroad. Our first witness will be one of our most thoughtful and respected colleagues, Rev. Stanley Lundine—Representative Stanley Lundine of New York. If I had to make a mistake, that was a good one. He will discuss the need for a cooperative approach involving business, labor, government, and other representatives of the public interest in the shaping of an industrial policy. He will be followed by five experts on various aspects of industrial policy: F. Gerard Adams of the Wharton School; Barry Bluestone of Boston College; Ira Magaziner, Telesis, Inc., Providence, R.I.; Alan McAdams of Cornell; and John Zysman of the University of California at Berkeley.

Representative Lundine, we are honored to have you here and your prepared statement, like that of the others, is received in full into the record without objection and would you now proceed in whatever way suits you.

STATEMENT OF HON. STANLEY N. LUNDINE, A U.S. REPRESENTATIVE IN CONGRESS FROM THE 39TH CONGRESSIONAL DISTRICT OF THE STATE OF NEW YORK

Representative LUNDINE. Thank you. Being that my entire prepared statement and the appendage thereto will be a part of the printed record, I will try to summarize and be brief.

It is perhaps accurate that we need divine guidance in developing an industrial policy, but I do not profess to have any of that kind of expertise.

I am before you today because I believe that American industry is in deep trouble and because I think that the United States must develop a coherent strategy for economic development.

Let me describe briefly what I mean by such a strategy and an initial step that I have recommended. I have proposed a quadripartite National Industrial Development Board that would bring together in equal numbers chief executives of major businesses, the presidents of major unions, national political leaders both from the administration and the Congress, and representatives of the public interest, particularly those groups which are challenging the economic status quo such as environmentalists, consumer minorities, educators, and innovative entrepreneurs.

I think that while this Board would be strictly advisory it could have stature and a serious purpose. The responsibilities would be, first, to recommend industrial development priorities for this country; second, to recommend solutions to particular problems of industrial policy which are referred to the Board by congressional committees or execu-

tive agencies; and third, to provide credible information on domestic and global economic situations.

First of all, the Board would report on the international competitiveness of individual sectors, their importance to the American economy, and whatever restructuring of those industries seems advisable.

The Board's second function would be to recommend solutions to particular problems and policy questions referred to it.

Mr. Chairman, you are well aware of—indeed you will recall intimately—the problem we faced in the Banking Committee when the matter of the proposed Chrysler loan guarantees was brought to us. At that time I was struck particularly by our lack of reliable information to base a judgment on. I was struck by the fact that there were no compromises offered to us that had been worked out between the interest groups, the unions, the lenders, the suppliers and dealers and other stake holders in Chrysler. Rather, our "solution" had to be fashioned in a more or less political atmosphere.

Now, being a politician, I have nothing against that atmosphere. It's just that I don't think it was necessarily calculated to come to the most farsighted result. It happens that thus far Chrysler has a happy result, but it seems to me that on these kinds of specific policy questions the Congress and the administration could get a great deal out of a quadripartite body that was charged with developing consensus recommendations.

The third function of the Board would be to serve as a reliable source of information, entailing a so-called early warning function. I think there's been too little of this in the United States and we are reaping the whirlwind as a result of that.

Having described briefly the responsibilities, let me underscore what I believe are some of the most important characteristics of the Board.

First of all is the structure. I think that all four parties are necessary—business, labor, government, and the consuming public. While it could be argued that only three parties are necessary, I suspect that if big labor, big business, and big government get together there's going to be a great suspicion that there weren't forces at the table who were sufficiently attuned to specific public interests; small business; environmental; minority; and others. So I'm recommending that there be four parties to this Board and that, in addition, the governmental sector include both executive and legislative branches in recognition that each plays a role in developing industrial policy.

The second crucial feature of the Board is that its findings should be grounded in consensus. The adversarial mode of problem solving which has prevailed in America, particularly between labor and management, for most of this century has served us reasonably well, but I think it's a luxury Americans can no longer afford.

As you know, I've actively promoted labor-management collaboration at the workplace and the community level. I believe it's now time to move that kind of cooperation and collaboration to the national level and, indeed, if it was never clear before, it should be clear by now that labor and business have some common objectives just as they have contradictory objectives. So I think that I would stress that this is a proposal designed to develop collaboration instead of conflict.

I don't want to conclude today by suggesting in any way that an Industrial Board legislation is a panacea for our economic or indus-

trial difficulties. In my judgment, it is merely a first step. I believe that there will be implementing steps to carry out an industrial development strategy which will be needed. I commend you for the witnesses you have later today who I think are particularly insightful as to what some of these implementing tools for industrial development strategy in America might be.

I don't think, though, that anyone can reasonably argue that the adversarial tugs of war still serve the national interest. The time has come when we must put aside our partisan differences, put aside some outdated philosophic hangups and get on with the business of developing an industrial strategy for this country.

Let me say in that regard that I think this can be done without any question within the context of the great American free enterprise system. I am not proposing any kind of planning in the sense pursued by the collectivist societies and I think that American business and American labor can be freer than ever before to exercise their own prerogatives within the context of an expanding economy if we give some thoughtfulness to how that economy can indeed expand. It's particularly important, however, that we do give some thought to that because we are marching to a beat of a different drummer than any other developed country in the world. And when the various nations' industrial policies or lack of industrial policy collide—principally in the international trade area—it becomes painfully evident that the United States can no longer afford to ignore the need for an industrial strategy while others are addressing it.

This afternoon I'm departing for a conference in Sweden on industrial policy which will bring together many business, labor, and government representatives from the leading industrial countries. I hope that as a result of participating in these meetings I can even get a clearer insight in this area. I don't expect to conclude that the United States should try to transplant any foreign economic planning mechanisms to this country. What we should do is develop our own within our own context. But I think we can learn from this kind of an exchange. I only regret that I'll be the only American Government official attending this conference and that there isn't a greater degree of discussion on this topic here at home.

Mr. Chairman and members of this distinguished committee, a dozen years or so ago I found myself in a community in upstate New York that seemed to have no hope for the future. And we decided that business and labor and government and the public had to cooperate and collaborate in developing a local industrial strategy. That strategy has paid off in new jobs, and higher productivity and increased competitiveness for a small region.

I think the same kind of strategy can work at the national level if we emphasize collaboration rather than conflict, and I commend you for the interest that you personally and this committee generally have directed toward the need for a national industrial strategy.

[The prepared statement of Representative Lundine, together with the attachment referred to, follows:]

Prepared Statement of Hon. Stanley N. Lundine

America is beset by an industrial decline which threatens our economic future, our national security and the well-being of millions of Americans. The auto, steel and construction industries provide the most immediate evidence of distress. But there are similar signs of trouble -- ranging from the merely ominous to the outright alarming -- in the machine tool, rubber, textile, glass, chemical, consumer electronics, semiconductor and other sectors. I am gratified, Mr. Chairman, that you and the other members of this Committee are resolved to examine this serious problem, and I am pleased to participate in your inquiry this morning.

Recently, I delivered a detailed speech on the House floor outlining my thoughts on America's industrial troubles. I would ask that this statement be included in this morning's record, and I will just spend a few minutes highlighting the points in that statement which I feel are most important.

My chief conviction is that America must not drift further into the 1980's without a clear strategy for industrial development. One can argue for such a strategy in several ways, using data, or theories, or simply by looking at what will happen if we continue to do nothing.

I will not bore you this morning with grim statistics, although they do confirm the severity of America's distress. Your Committee is as familiar as any with the plight of our basic industries: the declining market shares both at home and abroad, the persistent unemployment, the reduced output and diminished productivity. Nor do I want to present a theoretical view of our predicament. One can analyze

why the world's developed nations need industrial strategies in the final decades of the 20th century. But, given the seriousness of America's economic difficulties, such abstractions seem beside the point.

The case for a national industrial strategy is best put, I think, bluntly and pragmatically. First, most other western countries are pursuing explicit industrial policies; we are not. This is contributing to the loss of our competitive edge. While other countries develop a coherent picture of their economic strengths and weaknesses and the coordinated policies to deal with both, America still practices an unfruitful strategy of "crisis response" in which each new economic or social change seems to catch us by surprise.

The second point is that no country with a mature economy can avoid having an "industrial policy" of some sort. The question, rather, is whether it will be explicit, consistent, and helpful, or ad hoc, reactive and sometimes counterproductive. I am afraid America is following the second course by default.

Last month, I introduced legislation designed to steer us away from this unrewarding path and toward a more coherent strategy for economic development. Let me describe briefly what I mean by such a strategy and how HR 6099 would achieve that result.

The bill establishes a quadripartite National Industrial Development Board. This Board would bring together, in equal numbers, chief executives of major businesses, presidents of major unions, national political leaders (both Cabinet Secretaries and Members of Congress), and major representatives of the public interest --

particularly those groups which are challenging the economic status quo in America such as environmentalists, consumerists, minorities, educators, and innovative entrepreneurs. The Board will be strictly advisory, but it will be given a full staff of 200 and annual funding of $8 million to assure its stature and serious purpose. That purpose will be to develop responses -- based upon consensus among these four crucial sectors -- to key problems of industrial revitalization.

Specifically, the Board's responsibilities will include these three: First, recommending industrial development priorities for the United States; second, recommending solutions to particular problems of industrial policy which are referred to the Board by congressional committees or executive agencies; and, third, providing credible information on the domestic and global economic situation.

In pursuing its first task, the Board will report on the international competitiveness of individual sectors, their importance to the American economy, whatever restructuring of those industries -- as well as adjustment policies for affected workers and regions -- seem advisable, and public and private sector initiatives which can achieve these goals. In conducting these assessments, the Board will address three related categories of businesses: sectors which are experiencing structural decline, sectors which can anticipate difficulties in the coming years, and those high-technology industries which have strong potential growth in the years ahead.

The second function of the Board will be to recommend solutions to particular policy questions referred to it. The Chrysler loan guarantee, approved by Congress

is an example of this kind of issue. Although, Mr. Chairman, you did a masterful job of guiding the House Banking Committee through that difficult episode, I think you would agree with me that the process we followed is not suitable for resolving major industrial problems. With no advance warning and little expertise in assessing the economics of the automotive sector, our Committee was forced to make a rapid decision with enormous ramifications. I am convinced Congress' deliberations in that instance would have benefited from the dispassionate analysis and consensual recommendations of an Industrial Development Board. I think it is fair to assume that the Chrysler loan only foreshadows the kind of industrial policy questions which will confront us with increasing frequency in the years ahead.

The third major function of the Board would be to serve as a reliable source of information on the domestic and international economy. A crucial part of this duty is what might be called the "early warning function" — providing advance notice of shifts in international markets and threats to the competitiveness of domestic industries. Extending the time horizon of industrial policy is especially crucial, given the many biases toward a "short-term" view in our economic system. A corporate manager -- who is answerable to stockholders for the current value of their holdings and whose own bonus is often pegged to annual profits -- is discouraged from taking the long-range view. Similarly, Congress can rarely look beyond its biannual elections. Union officials often work within the framework of a 2- or 3-year labor contract. We need an Industrial Board which can afford to take the longer view of industrial policy.

Having described this triad of responsibilities, let me underscore what I believe are the three most important characteristics of the Board.

The first is the Board's quadripartite structure. The Board will represent a balance among the four major sectors in our economic system: business, labor, government and the consuming public. I am convinced that no industrial strategy can succeed unless it has the participation and support of these four groups. The importance of union and management involvement is self-evident. Some may question the need for government participation, yet it should be clear that through its tax and regulatory policies as well as budgetary priorities, the federal government has a pervasive influence on our economy. And, I would stress that this Board will include leaders of both the Executive and Legislative branches in recognition that each plays a determining role in federal policy. Finally, the participation of important public groups will be crucial if the public interest is to be preserved. Without the involvement of small businessmen or environmentalists, or educators or consumers, Americans might well conclude that this Industrial Board was merely a mechanism whereby big business and big labor can protect their own interests.

The second crucial feature of the Board is that its findings will be grounded in consensus. The adversarial mode of problem-solving which has prevailed in America (particularly between labor and management) for most of this century has served us reasonably well. But in today's era of marginal growth and precarious stability, it is a luxury which America can no longer afford. As you know, I have actively promoted labor-management cooperation in the workplace and at the community level, and I have witnessed its dramatic success in promoting economic growth. I believe this principle can be successfully expanded to a quadripartite format and applied at the national level.

The last aspect of this Industrial Board which I want to stress is that it is not intended to simply prop up "distressed" industries. The Board will operate on the premise that decline in some sectors is inevitable and that high-technology, high-growth businesses -- if properly nurtured -- can offset much of this dislocation.

Certainly, I do not regard this Industrial Board legislation as a panacea for our economic difficulties. It is really just a first step towards recovery. Once such a Board develops an industrial strategy, Congress and the Executive Branch will have to give special attention to how that strategy can be implemented. While I intend to devote significant energy in the coming months to advancing this concept of a quadripartite Industrial Board here in Congress, I will also be exploring some of the policy tools which the Board would need to implement its strategy. I expect that this might well include some mechanism for development finance.

In closing, let me return to a point which I made at the outset of my remarks: we must rid ourselves of the fiction that America can prevail without any industrial policy. The true question is not whether we will have such a strategy, but what that policy will be like: deliberate and well-reasoned, or ad hoc and distorted by adversarial tug-o'-wars. The current Administration seems unwilling to accept this reality. The President insists that we can avoid an industrial strategy altogether, that the unfettered forces of a free market economy will restore our industrial vigor. The response of private investors thus far suggests the error of this view. As the vice-President of one of America's major corporations declared last week, "the only result of Mr. Reagan's attempt to reinstate the theories

of Adam Smith may be to reduce America's GNP to that of eighteenth century Britain."

I am especially mindful this morning of how far out of step America seems to be with the rest of the world on the issue of industrial policy. We appear indeed to be marching to the beat of a different drummer -- with no apparent advantage. This afternoon, I am departing for a conference on industrial policy in Tallberg, Sweden where union, business, government and academic leaders from 11 western countries will be exchanging ideas on the new challenges of the post-industrial era and the need to sustain economic growth. I do not advocate that we imitate European structures, or that we transplant economic planning. I do not propose a detailed economic timetable for the United States. But I do suggest that we emulate the principle of cooperative problem-solving among major sectors of our society, and the notion of an explicit strategy for industrial growth.

I regret that I am the only American government official who will be attending the Tallberg conference. That seems to me symptomatic of our neglect in this area. I hope that I may have some further ideas on this subject when I return from this conference, and if that is indeed the case I would be pleased to share them with the Committee. In the meantime, I want to express my appreciation for the opportunity to participate in this morning's hearing on this vital subject.

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House of Representatives

CREATING A NATIONAL INDUSTRIAL STRATEGY

Mr. LUNDINE. Mr. Speaker, America is beset by an industrial decline which threatens our economic future, our national security, and the well-being of millions of Americans. The causes of this decline are varied and the solution must be no less comprehensive. Today, I am introducing legislation which will lead us toward that comprehensive response. I am pleased that my colleagues, LEE HAMILTON and DAVE BONIOR, are joining me as original cosponsors of the National Industrial Development Act.

What are the multiple sources of decline to which this bill responds? Productivity and product quality have diminished. Imports have invaded domestic markets while American goods have failed to compete abroad. Investment has lagged in many sectors as has the commercial application of advances in technology. Soaring energy prices have rendered plants and equipment prematurely obsolete. Business strategies have often been shortsighted. We have not supplied the number of engineers and other skilled workers which a more complex economy demands. Nor have American managers moved to restructure their work organizations in ways that will maximize the contributions of increasingly sophisticated employees. Government, too, has failed to sustain its support, even in those areas such as transportation and other infrastructure, or research, which lie traditionally within its domain.

The untimely convergence of these and other factors has produced startling deterioration. The auto, steel, and construction industries provide the most immediate evidence of distress. But there are similar signs of trouble—ranging from the merely ominous to the outright alarming—in the machine tool, textile, glass, rubber, chemical, consumer electronics, and even semiconductor sectors.

According to the latest figures from the Federal Reserve Board, total industrial production is the same today as it was in 1977. For durable consumer goods, output is significantly lower than in 1977 and for business equipment it is roughly the same as 3 years ago.

Surveying "Industry Outlooks for 1982," Business Week recently observed, "In its basic manufacturing sector, especially, the U.S. has wrenching readjustments to make." The article noted that in the last 3 years alone, sales of Japanese cars have jumped from 12 to 22 percent of the U.S. market. Moreover, imports account for "a quarter of the domestic machine tool market," and "a fifth of all steel consumed annually in America." By the end of 1981, American steel mills were operating at 60 percent of capacity.

"Even in energy and natural resource industries, there are difficulties," the Business Week survey continued. "Oil and nonferrous metals have been seriously affected by the near collapse of the U.S. auto industry. And coal and forest products need big infusions of money to compensate for decades of underinvestment and bad development decisions."

The Department of Commerce's recent U.S. Industrial Outlook notes that in the decade from 1968 to 1978, private nonfarm productivity grew annually by only 1.4 percent, and has actually declined since, annual growth in output was only 2.9 percent, and import penetration jumped from 4 to 7.5 percent in manufacturing goods.

In constant dollars, shipments were lower in 1978 than in 1972 for a number of major industries, including cotton, wool, and circular knit mills; mobile homes; sawmills and planing mills; men's and boy's apparel; concrete products; fabricated structural metal; tires and inner tubes; brick and structural clay tile; footwear; and textile, woodworking, rolling mill, and special industry machinery.

According to a recent issue of the Monthly Labor Review, between 1969 and 1979, employment fell by 25 percent in the radio and television manufacturing sector. Employment also declined in household appliances, metal stampings, fabric and thread mills, flat glass, and railroads, among other sectors. Such declines stand out in sharp contrast to the extraordinary increase in the labor force which occurred in this period.

Even those sectors which were looked upon as key sources of future growth seem less robust today. In explaining its negative forecast for chemical companies, Business Week notes that "U.S. demand for petrochemicals will probably never again reach the levels of the 1970's." Similarly, last week's London Economist repeated warnings about the fate of semiconductors. "American microchip companies are beginning to recover pride in their leadership of innovation, after a long bout of shocks from the Japanese. This revival of confidence may be premature."

These dispiriting statistics and forecasts should not obscure the fact that American companies still hold solid leads in many markets, and that American productivity levels are still the highest in the industrialized world. Yet, there has been alarming slippage in our competitive position.

The seriousness of the situation suggests that America must not drift further into the 1980's without a national industrial strategy. The extraordinary range of factors involved suggests that an industrial strategy will only succeed if it is built upon consensus and cooperation among all of the parties affected: Business, labor, government, and the consuming public. And the catalog of troubled businesses also suggests that an industrial strategy must address three concerns: Those businesses experiencing structural decline, these sectors which anticipate competitive difficulties in the years ahead, and those high-technology businesses with strong growth potential. This last group, if properly nurtured, can offset the dislocation in more mature industries.

Despite the industrial reality confronting us, there are those who still resist an explicit response. Some contend that revitalization of our industrial base is unnecessary. America, they argue, is undergoing a normal transition to a service economy. Such arguments are dangerously shortsighted. They ignore the fact that manufacturing of marketable goods is still the engine that drives our economy. They fail to recognize that basic industries are precisely what the "service sectors"—advertising, financial, marketing, consulting, legal, accounting—

often serve. In short, such arguments mistake a postindustrial society for a nonindustrial one. Felix Rohatyn delivers perhaps the best rebuttal to these arguments when he asks, "Is it rational to let all of our basic industries go down, one after another, in favor of some mythical service society concept in which everyone will be serving everyone else, but no one will be making anything?"

Others who reject the need for an industrial strategy suggest that industrial revitalization will occur as part of a more general program of economic recovery. Thus, proposals for an industrial policy have become entangled in disputes over the likely success or failure of President Reagan's economic program. This is unfortunate. Surely, industrial development is influenced by business cycles and the macroeconomic environment, but it is also a distinct concern. The argument for a national industrial policy does not rest on economists' gloomy forecasts about the administration's plan.

The fact is that, even if we accept Mr. Reagan's optimistic projections, there is no guarantee that increased investment, prompted by last year's tax cut, will necessarily occur in distressed industries. Even if we accept that Government regulation is responsible for undermining key industries, there is no assurance that deregulation alone will revive those moribund sectors today. Even if millions of new jobs are created in a less restricted economy, it is far from certain that this same marketplace will provide the trained manpower with the appropriate skills to fill them. In short, regardless of the macroeconomic policy which the Congress and the President may pursue, America must give special attention to the problems of key industrial sectors.

The intensifying debate over Reaganomics must be born in mind, however, in fashioning an industrial policy. Industrial development is fraught with major controversies. No policy can hope to surmount them if it is beset by the kinds of factional disputes which already confront the President's program. What is needed, then, is some mechanism for forging a consensus among potential adversaries—a consensus strong enough to bridge the points of controversy.

What are those sources of controversy? To begin with, there is serious disagreement about basic information. Today's debates over industrial development rarely move beyond the first stage in which each special interest group uses selective data to reinforce its own analysis of the problem and to refute all others. Bad management, unfair foreign "dumping," regulatory burdens, a declining work ethic—each culprit has, in turn, been convicted by whichever side marshaled the right statistics.

Even in those instances where agreement is reached on a set of facts or an interpretation of circumstances, controversy does not subside. Rather, each party to the problem soon realizes that every solution requires substantial sacrifice from someone. As with any "zero-sum" situation, a battle is waged over who will make that sacrifice. The problem-solving process is soon subverted by power politics.

Finally, on those occasions when a solution is decided upon and implemented, controversy may still persist. Those who are not parties to the final agreement or who feel they are making disproportionate sacrifices may well resist or counterattack.

The adversarial mode of problem solving which underlies these controversies has served America reasonably well for most of this century. It encouraged each side to commit 101 percent of its energies to "winning" and that motivation was often what propelled our economy forward. Sometimes we were led down blind alleys when the "wrong" side won, but such mistakes seemed a small price to pay in an era of continuous growth. While the problems were never as black and white as adversaries might paint them, neither were they so complex as to defy dialectics.

Now, those conditions have changed. The adversarial mode of problem solving is a luxury which America can no longer afford in an era of marginal growth and precarious stability. Moreover, the problems have become much more complicated and the numerous parties to each of those problems have acquired sufficient power, if not to win the disputes, at least to stall their resolution.

A new mechanism for problem solving must embody these principles: First, all principal parties to a problem must participate in its resolution; second, that resolution must be grounded in data and information which is credible; third, the resolution must be based on a consensus; and fourth, there must be accountability among those who have agreed to the solution. No institution in America today fulfills these requirements.

Certainly, Congress does not answer this need. While it may represent labor, business, environmental, and other groups, it cannot really negotiate an agreement among those interests. Similarly, Congress does not really produce consensus. It is often said that Congress practices the art of compromise, but such compromises may as often be unworkable hybrids of opposing positions as solutions born of true consensus.

Finally, Congressmen, by themselves, are ill equipped to make complex economic judgments about individual sectors.

The Chrysler loan guarantee, approved by Congress in 1979, foreshadows the kind of industrial policy questions which will confront America with increasing frequency in the years ahead. Without passing judgment on Congress' ultimate decision in the Chrysler case, it is clear that the process by which that decision was reached is unsuitable. With no advance warning, and with little expertise in assessing the economics of the automotive sector, the House and Senate Banking Committees were forced to make a rapid decision with enormous ramifications. No consensus was reached on the origins of the sector's crisis, and sober analysis of Chrysler's or the entire sector's prospects for the future was often clouded by political rhetoric from both sides.

Executive agencies have some advantages over Congress as problem solvers. It is easier for a department to play the neutral facilitator, bringing together outside groups. The Tripartite Steel Committee, for example, has forged a consensus among business, labor, and government officials on such issues as trigger price mechanisms and environmental controls. For a brief period, the Commerce Department's shoe industry program succeeded, through similar collaboration, in reviving a very troubled sector.

But a single agency is too narrow to look at the full industrial picture. And, these experiments in cooperative policy formulation are subject to the political changes which govern all agencies. The shoe program faltered with the departure of an Under Secretary; the Tripartite Steel Committee was dissolved by the current administration. Most significantly, agencies—unlike Congress—have no electoral constituency. Thus, the public may well feel that its interests will not be protected, that the crucial boundary between collaboration and collusion will be transgressed.

America needs a new institutional mechanism for industrial problem solving. Today, I am proposing formation of a quadripartite National Industrial Development Board. Such a Board would bring together, in equal numbers, chief executives of major businesses, presidents of major unions, national political leaders—Cabinet Secretaries and Members of Congress, and major representatives of the public interest—particularly those groups who are challenging the economic status quo in America, such as environmentalists, consumerists, minorities, educators, and innovative entrepreneurs.

Board members will be appointed by the President—but only from nominees forwarded to him by the Speaker of the House, the majority leader of the Senate, and the minority leaders of both Chambers. Members' terms will be for 6 years. The Board will meet at least once every 2 months and members, or their one designated alternate, must attend these meetings. The stipulation that Board members must be major leaders in their respective sectors—business, labor, government, and public—and the critical nature of their responsibilities, insure that this will not become another "blue ribbon panel" whose recommendations are routinely shelved and forgotten. The Board will be given a full staff, expected to be around 200 in number, and $8 million in annual funding to fulfill its duties. The Board will be strictly advisory. But its lack of decisionmaking authority will augment the likelihood of consensus. The Board will be less subject to the corrosive effects of special-interest lobbying.

The Board's purpose will be to develop a consensual response to key problems of industrial revitalization. Its specific responsibilities will include these three: First, recommending industrial development priorities for the United States; second, recommending solutions to particular problems of industrial policy which are referred to the Board by congressional committees or executive agencies; and third, providing credible, consensus-backed information on the domestic and global economic situation.

On a more general level, we can expect the Board to exert a stabilizing economic influence. Ronald Müller, whose insightful book, "Revitalizing America," sets forth a compelling case for an Industrial Development Board, speculates on this broader effect. As the Board begins to achieve consensus on various aspects of an industrial strategy, Müller points out, "the confidence necessary to lure savings out of their present havens and overcome shortfalls in capital formation" should emerge. "Now, for example, big money is in hiding partly because of uncertainty over questions of energy and regulation (and inflation) but also because investors do not know from one day to the next (what policies to expect from Washington)."

How will the Board fulfill its three specific responsibilities? In pursuing its first task, the Board will report on the international competitiveness of individual sectors, their importance to the Nation's economy, whatever restructuring of those industries—as well as adjustment policies for affected workers and regions—seem advisable, and initiatives in both the public and private sectors which can achieve these goals. In conducting these assessments, the Board will address the three categories of businesses to which I alluded earlier: Sectors which are experiencing structural decline, sectors which can anticipate difficulties in coming years, and those high-technology industries which have strong potential growth in the years ahead.

The Board is expressly directed to proceed on the premise that "most sectors of the economy are necessary and can survive if they adapt sensibly to new markets, technologies, organizational designs and relationships between labor and management." In other words, the Board will avoid designation of "winners" and "losers" in American industry.

On the other hand, the Board is expected to highlight necessary transitions. Decline in some industries is inevitable and requires structural adjustment. The United States will always need automobile production, but both Detroit and Washington must recognize that Americans from now on are unlikely to replace their cars every 4 years. A healthy steel industry is essential not only to our national security but to hundreds of domestic manufacturers. Yet, we must confront the global reality of overcapacity in steel. By formulating consensus adjustment policies, the Board can ease these difficult transitions.

A brief annual report to the President and Congress is required in this legislation. The relevant House and Senate committees will consult with the Board on its findings and forward to each Chamber their evaluation of the report. In this, as in all other reports which the Board may issue, the Board is expected to achieve the maximum degree of consensus among the four sectors it represents. I believe such reports can have a highly beneficial effect in creating a workable industrial strategy for the United States.

The second function of the Board will be to recommend solutions to particular policy questions which are referred to it by a congressional committee or executive agency. I have already mentioned the Chrysler loan guarantee as an example of this kind of issue. Congress' deliberations in that instance would have benefited from the dispassionate analysis and consensual recommendations of an Industrial Development Board.

Now, a similar issue has arisen which provides a perfect example of the potential value of the Board. Within the last few weeks, intense lobbying has encouraged a substantial portion of the House to cosponsor "local content" legislation for the automobile industry. This legislation has enormous ramifications, particularly in the area of trade; quite probably, its effects are broader than those of the Chrysler loan guarantee.

I share my colleagues' concern about the rapid erosion of America's auto sector, and I sympathize with the plight of the thousands of workers who have lost their jobs as a result of that decline. But, I fear we are again rushing toward a simple solution without adequate analysis of the full industrial picture.

For a moment, let us contemplate how a more effective response to America's auto woes might emerge if an Industrial Development Board were in place. Instead of locking ourselves permanently into a protectionist "local content" measure, Washington could impose a temporary import quota while domestic auto manufacturers adjust to the new structures of the market. Yet, we cannot blithely assume U.S. firms will readjust simply because a quota is imposed. As Robert Reich and Ira Magaziner remind us, in their excellent new book "Minding America's Business," in the 6 years following implementation of steel import quotas in 1968, capital expenditures of domestic steel producers actually declined.

What is needed, then, is a negotiated solution to the auto crisis. That is where the National Industrial Development Board can play its role. The Board calls before it executives from the automobile manufacturers. The candid challenge is posed: "If the Federal Government imposes temporary import quotas, what can you give in return? What comparable commitments will you make to insure readjustment of the auto sector?" Next, the relevant unions are summoned by the Board and the same questions are put. Solutions begin to emerge; factions grope toward consensus. To be sure, some will probably plead for regulatory relief as the lone solution. But, the Board's consumer, environmental, and government representatives would scarcely acquiesce in such a one-sided response. In short, the Board can negotiate a harmonious package of readjustment policies—to be undertaken concurrently by labor, management, and government—and present that package to the Congress.

The third major function of the Board would be to serve as a reliable source of information on the domestic and international economy. A crucial part of this duty is what might be called the early warning function—providing advance notice of shifts in international markets and threats to the competitiveness of domestic industries.

Economic policymaking over the last several years has been dominated by sudden and unexpected blows to American industry. We seem to act only when a crisis is upon us. Some people imagine that this permits America to avoid having an industrial policy. It is a pleasant fiction. In fact, practicing "crisis response" only condemns our industrial policy to being ad hoc and reactive when it should be anticipatory and consistent.

I am often told that the business community will oppose an Industrial Development Board as an "interventionist" proposal. But the fact is that the last 20 years of "crisis response"—whether the crisis has been environmental pollution or a bankrupt Lockheed—has itself yielded Government intervention. Frankly, I think the business community is beginning to realize this—and to realize, as well, that the accumulation of unanticipated crises begins to undermine business confidence and economic stability. Accordingly, I believe that the "early warning function" of an Industrial Development Board should be welcomed, even in the business community.

Extending the time horizon of industrial policy is especially crucial, given all the biases toward a "short-term view" in the business and Government sectors. Henry Kaufman, the wizard of Wall Street, once noted that in the financial world, "the short-term view is tomorrow, the mid-range view is next week, and the long-term view is the end of the quarter." It is undeniable that a corporate manager,—who is answerable to stockholders for the current value of their holdings and whose own bonus is often pegged to annual profits—is discouraged from taking the long-range view. Similarly, Congress can rarely look beyond its biannual elections. Union officials often work within the framework of a 2- or 3-year labor contract. We need an industrial board which can afford to take the longer view of industrial policy.

The formation of another Federal entity may well be viewed with skepticism and even hostility in today's environment of public sector retrenchment. But there is a difference between streamlining government and

straitjacketing it. In our commendable pursuit of Federal austerity, we must not lock the public policy process into outmoded structures. A National Industrial Development Board should not be viewed as a new appendage to the Washington bureaucracy. It represents, instead an adaption to a changing society—one in which cooperative development must supplant the adversarial conventions which today threaten the survival of American industry.

One of the reasons that American industry is threatened is precisely that other Western countries have adapted to the new era of cooperation and consensus much faster than we have. As Messrs. Reich and Magaziner point out:

> Mechanisms were developed in these countries for consensus-forming among the major economic constituencies—managers, owners of industrial enterprises, trade unions, banks, and government. The French planning systems, the Japanese MITI advisory councils, and the regular German roundtables, all provide forums in which various industrial constituencies could meet.

This collaborative spirit is emerging in the United States. Today, there are hundreds of labor-management committees in individual workplaces throughout the country. In addition, there are more than 25 municipal committees in which local labor, business, and, usually, Government representatives have joined together to address a community's economic problems. Finally, in a few cases, tripartite committees have been formed at the national level to examine the problems facing certain business sectors. I have already mentioned the Tripartite Steel Committee which the Reagan administration regrettably has abolished.

Similar national committees have operated in the retail food and construction industries. Yet, these have been largely ad hoc, with no statutory basis and therefore subject to changes in leadership and personal commitment. The time has come to take a further step—to formally incorporate a mechanism for cooperative problem solving in our industrial policymaking process.

We do not need an ironclad national plan; we do not want a detailed timetable. We are not searching for a step-by-step economic prescription. But, if we look to the successful economic development activities of communities and States in America, we will observe that they have succeeded by "looking ahead," by laying the groundwork, by building a consensus around a growth strategy. My home city of Jamestown, N.Y., has returned from the brink of economic calamity by pulling business and labor and government together in support of a concerted economic development program, a strategy for the future. Today, we often see articles about surprising "business growth" in unexpected places like North Carolina. But that State's highly touted Research Triangle did not just appear overnight. It is the product of concerted effort; I can remember that plans were being laid for such development when I was a college undergraduate in North Carolina many years ago. It is time that the Federal Government took its cue from these successes, time that we rid ourselves of the "crisis response" mentality, time that we brought leaders of the major sectors in our society together to develop a consensual strategy that will guarantee America's industrial vitality in the years ahead.

Representative REUSS. Thank you very much, Representative Lundine.

Congressman Long.

Representative LONG. Thank you, Mr. Chairman.

Stanley, I could not agree more with two basic points of your presentation. One, somehow we must avoid the adversarial relationship that exists between the Government on the one hand, industry on the other, and labor on the third. This situation has the weakness of a three-legged stool. The real adversarial relationship is between, as you pointed out, labor and business. You said that in your opinion this adversarial relationship has served us well in these last few years. I'm not sure it has. I think there is serious question as to whether or not it has served us well. I think perhaps this conflict could be the root cause of the inflation that has occurred in the country. This is something that has disturbed me for a long period of time and I encourage you to keep working on this question. I think that we've reduced this conflict somewhat but we need to get both the labor leaders and the industrial leaders of America to realize how important it is to reduce the conflict. I'm not sure they do. I'm not sure that they realize that this adversarial relationship has got to change. I hope that both sides have the political courage that is necessary to be able to change it.

I'm like you. I plod along with it a little bit at a time just trying to improve the situation with a stroke here and a stroke there.

The second point I agree with is the need for an industrial strategy or what might be better described as long-range planning. An interesting thing happened to me a few years ago. I was giving a talk on general financial affairs and fiscal affairs to some of the top fiscal officers of three or four countries of the world. In one of the countries I went to, I talked at some length to the finance director from Norway, a country which keeps individual freedoms. Norway does not equate industrial planning with the government trying to run everybody's life on an everyday basis. We tend to equate the two and we become convinced that freedom and planning cannot be consistent. The Minister from Norway told me an interesting story. I asked him how Norway had gotten into long-range planning. And he said, "Well, what happened, I was a junior career finance department member of the government at the time following the end of World War II"—and our country was trying to set up the Marshall plan—"and the United States required that for Norway to participate in the Marshall plan, it must set up long-range goals." In America, however, we never really have set any goals.

What disturbs me about the Board that you would establish is whether it is too timid. I was relieved to hear you say that it would be only a first step, that perhaps you could move into something a little stronger. Perhaps you're right—maybe we do have to take it one step at a time, but aren't you a little afraid that what will happen with your Board is the same thing that happens to the recommendations made by the Joint Economic Committee and the recommendations made by the other agencies outside the Government with respect to long-range policy? On the energy question, people had been saying for 20 years that it was just a matter of time before we had a shortage. Finally we developed national policy with respect to energy but not until the two-by-four hit us across the head in order to get our atten-

tion. Do you think the Board would be effective with the powers you have outlined?

Representative LUNDINE. Yes. Let me comment on two aspects of what you were talking about.

First of all, what I meant to express is that the adversarial system between business and labor had served us well for most of the century in the sense that the collective bargaining system has been a reasonable way of allocating the fruits of increased productivity. But I agree with you that as productivity has stood still for the last decade or so, we've come to realize that collective bargaining and the adversarial relationship are not so well equipped to deal with these new problems of how are we going to get ourselves out of this stagnant condition as opposed to how are we going to divide the fruits of our success. So I agree with your observation in that regard.

Second, with regard to whether a board itself is too timid, that argument has been made to me by others, some of whom you'll hear from later today. The argument is that you should put the implementing capability or action oriented tools into the same bill in which you create a board.

Well, as soon as you start to get into what you're going to do, particularly in the area of development financing—and on that the chairman is as good an expert as anyone I know in the Congress—you get into some very controversial areas. And my answer would be it is worth trying to develop consensus on the first step even without the teeth; and, second, it's my observation that amazing things can happen when business, labor and the general public speak with a common mind. So I think if we start with the Board, success may breed success.

Let me give you an example. Let's take the steel tripartite committee—it was a very, very low-key effort, it was not given a great deal of publicity, it existed for a limited period of time. But when the business and the labor people from the steel industry and the Government got together and decided they had some environmental problems, they brought some environmentalists in and they sort of prenegotiated that out. It's my recollection that when those environmental changes on which they all agreed were brought to the Congress they passed the House with only 12 dissenting votes. Now, how many environmental changes have you seen come through our body with only 12 dissenting votes?

The second example I would give you of this kind of collaboration with a legislative result would be in the area of international trade, the multilateral trade negotiations. Now I accept that Mr. Strauss who conducted them is an unusually skillful politician without any question, and I think that might be conceded on both sides of the aisle, yet the fact of the matter is that business and labor were brought to the table. I know for a fact that they were, and that some of those negotiations—even some of them involving the "downside" of the agreements, the dairy people from my area, for example—were there when some of the uncomfortable negotiations were taken up in Geneva. When the trade agreement came back before the House, that controversial bill went through, I believe with eight dissenting votes.

Now what I'm suggesting to you is that there can really be consensus. I don't doubt that if another Chrysler came along there would be some people who for absolutely philosophic reasons could never

support a loan guarantee program. There would be others who would want to give away the store, from my point of view, as somebody in the middle. But I think you can develop consensus even without some of the financing and adjustment tools that others would suggest should be given to the Board in this initial bill and which I would think would be more appropriate as a second phase of an industrial development program for the Nation.

Representative LONG. One other short question, just to fill this out. When you have another situation similar to the Chrysler situation, how can we assure that the Board is sufficiently insulated from the special interest pressures that are sure to arise and look at the situtation in an objective and dispassionate manner?

Representative LUNDINE. Well, we can never delegate to a board the ultimate authority to pass judgment on a question of major public policy. In taking up our industrial financing needs, the Government in the United States has tended to consider these matters on an ad hoc basis—I think that's probably appropriate—so I think ultimately the Congress would have to make the final judgment. But I think that by having practical, action-oriented people, business people, labor, government, and representatives of the academic community, small business, consumers, appointed to an industrial board in the fashion that I have suggested in the bill on a bipartisan basis, would almost insure that their recommendations would be taken seriously and insure that they would view as their charge putting together some difficult compromises. In other words, they weren't going to just take an industry's ultimate request or a banker's request for a bailout because they were on the hook. I think it almost insures if you're asking that they develop a consensus that they will have to make some of those compromises and I frankly think that they may make some innovative recomendations which might have escaped our attention because we had to take it up in such a highly charged political atmosphere. I mean this as no criticism of the Carter administration, for example, but how is the President of the United States facing an election in a year or a year and a half going to be objective on a matter such as Chrysler when a union of a million members comes in and says, "You've got to give us some relief here." I think actually the Carter administration did a reasonable job of negotiating that matter out, but the fact of the matter is that if you had a board like this they would be less subject to the very influences you're concerned about than we would or the administration would.

Representative LONG. Well, I share your objectives and encourage you to continue your leadership on this important issue.

Representative LUNDINE. Thank you.

Representative REUSS. Thank you, Congressman Long.

A couple of questions, Mr. Lundine. How many people are on this National Industrial Development Board?

Representative LUNDINE. There are 32, 8 from each sector.

Representative REUSS. I like very much your delineation of the three things this Board would do—identify priorities, recommend solutions, and provide information. My only problem really—because I agree that this is a function that needs to be done—is whether this 32-person new entity with the suggested 200 experts on the payroll and so on is the only way to do it.

Let me throw an idea at you and see what you think. This weekend the Federal Reserve Board was so indiscreet as to invite me to address their Chairman at their annual meeting and at that meeting I'm going to point out, in addition to the fact that I love the Fed, that its function is kind of being leeched out. Monetary policy in the future just can't be as portentious a thing as it has been in the past.

Second, one of these days the Fed is going to find that Congress is going to bring together the various bank regulatory agencies and it may not be in the Federal Reserve.

And, finally, their enormous check clearing function is now in the process of being privatized, as perhaps it should be, so you may end up where the Fed is one of these days going to be left with 12 marble palaces, 25 beautiful branches, 36 Federal Reserve Centers, 80 jet planes, the greatest stock of computers in the Nation, 500 economists, thousands of skilled administrators, marvelous hybrid boards. From time to time it's said—and incidentally I agree—that the Fed should be broadened by bringing in labor, and public and the consumers.

But if you did that, viewing the Fed's regionalization and the fact that it is there, couldn't we make a National Industrial Development Board out of the Fed and save a bundle for the taxpayer, sort of an adaptive use of a historic landmark that might be losing its function?

Representative LUNDINE. Well, I'm not going to take all of that bait, Mr. Chairman, but it seems to me that you are a visionary and that maybe a board like I'm suggesting would eventually go together with a modernized Federal Reserve Board. I don't think, though, that that's the way to begin. I think you have to begin by convincing people here in the Congress and in the public that in fact such a function can be done consistent with our democratic traditions and if you endowed it with all of those computers and jet planes and so forth that are associated with the Federal Reserve, then I think that it would be more suspect to begin with than if an Industrial Board were to start small and with enough staff so they could do a job but a relatively lean, trim operation.

I gave serious thought to the question of the Federal Reserve in regard to industrial policy and I'm particularly interested in the regional expertise that they have. It is attractive. There's no doubt about that because we are an enormous and diverse nation and there would need eventually to be some regional aspect to this industrial policy I'm proposing.

I guess that I would suggest—if your vision is ever to be achieved—that it grow together over time rather than be a bold proposal at the outset because I'm afraid it would never have a chance to get off the ground, that people would be more suspicious of an Industrial Board if it were merged with the Fed. As I said in my prepared statement, I think you have to guard against the thought that big government, big business, and big labor are going to get together and cut big deals and to question whether that's in the interest of the public. I think today much of the public, probably primarily because of monetary policies, has that view of the Federal Reserve, that they can't get at it, that it isn't sensitive to their needs.

Representative REUSS. I said, of course, that the Fed should in any event be broadened to include labor, consumer, and the other public interests that you described.

Representative LUNDINE. Well, that's general reaction to your visionary proposal.

Representative REUSS. Well, in our Father's house are many mansions, and we'll wish each other luck. Thank you very much. Have a great trip to Sweden and come back and tell us all about it.

Representative LUNDINE. Thank you.

Representative REUSS. All right. We'll ask the panel of Mr. Adams, Mr. McAdams, Mr. Magaziner, Mr. Bluestone, and Mr. Zysman to come forward. I want to thank you all for the marvelous and comprehensive prepared statements you have given us, all of which have been received into the record along with several additional papers from those who couldn't be witnesses this morning.

Would you proceed to summarize your views now? Let's start with Mr. Adams.

STATEMENT OF F. GERARD ADAMS, PROFESSOR OF ECONOMICS, UNIVERSITY OF PENNSYLVANIA

Mr. ADAMS. Mr. Chairman, I'd like to thank you and the members of the committee for an opportunity to talk on the subject of industrial policy. I have submitted a prepared statement and I will simply try to summarize the most important points of that fairly briefly.

As we know, in the past decade the performance of the American economy has fallen far short of our hopes and expectations and there is clearly a widespread consensus that American industry faces serious structural readjustment problems, but paradoxically, there's little agreement on what, if anything, should be done about them.

I would view the proposals for developing an American industrial policy as a comprehensive and coherent attack on the problems of industrial maturity. These proposals stand at risk in the current political controversies about the role of the Government and about the size of the Government.

Now over the course of the past couple of years, Lawrence Klein and I and our colleagues at the University of Pennsylvania have been carrying out a series of studies of industrial policy. This work has had three dimensions: One, a broad overview of theory, philosophy, and experience worldwide with regard to industrial policies; two, a set of simulations with our large-scale macromodels to look at various policy alternatives; and three, a series of detailed industry studies.

We are now at the point where it's possible to draw some preliminary conclusions and that's what I tried to do in this brief document. A critical question, I believe, is, precisely what is industrial policy? I think this is a critical question in part because of the tendency to apply political preconceptions to the topic of what is or what might be industrial policy. A narrow definition of industrial policy would call only for those policies relating directly to the management of industrial structure or even to specific industries. But it is our feeling that such a definition would narrow the scope of the measures considered to exclude precisely many of the policy instruments which are most feasible in the United States. And for that reason we have found it useful to take a broad view of industrial policy, including in this concept any measures which are intended to produce industrial structure or to aid in its adjustment to provide incentives for investment

in new industrial capacity, stimulate decision development to build new industries, and to ease the transition from old sectors.

Our overview of industrial policy shows that the philosophy of industrial policy and the strategy varies greatly among countries and to a large extent the approaches one finds reflect the relationship between business and government and the political economic philosophy that prevails. This means that conclusions which apply in one setting may not be transferable to another. In other words, simply because industrial policies have worked well in Japan does not mean that these precise policies will be effective in the United States.

But there are a few general conclusions that one can reach and it is certainly true that industrial policies aimed at economic targets have played an important role in the industrial development of many countries. While in many cases, industrial policies have been ad hoc and reactive—and I might add I think this is a very serious problem in the United States as it is elsewhere in the world—the policies react to particular circumstances with a heavy dose of political input—but there are instances and important ones where policy has been forwardlooking in the context of a coherent scheme for advancing the economy.

I might add in that connection, I note particularly that many, many countries which compete with American industries in world markets provide extensive support for research and development in priority industries which, we find in our analysis of economic theory, provides a significant backing for public policies aimed to supplement the operation of the free market in providing support for additional research and development activities.

With respect to the mechanisms of policies, it's apparent that public enterprises or firms operating under an umbrella of protectionism represent a significant risk of failure or inefficiency as compared to business forced to operate in the framework of the competitive private enterprise.

Reliance on decisionmaking by private competitive enterprise assisted as appropriate by industrial incentives appears to us to offer the best prospects for building and maintaining a productive industrial structure.

Now let me comment briefly on the macroeconomic studies, the model simulations which we've done. One set made use of some of our large models for the U.S. economy and was specifically oriented toward the notion of whether general policies—how did general incentive policies compare to targeted or specific incentive policies?

We used the model to evaluate a variety of alternatives and out of this come two principal conclusions: One, that in all cases, industrial investment incentives proved to be helpful in our simulations in increasing investment in capital stock and in advancing productivity; and two, that general policies, available on a nondiscriminatory basis to all industries, nevertheless had industry specific impact. As our chairman pointed out this morning, even if the policy is not intended to focus narrowly, inevitably there is an implicit industrial policy in the sense that the impacts would fall on some industries rather than others.

Our analysis of what we call sector specific policies, which would be available on a preferential basis to some priority sectors, suggested

that these policies have more bang for the buck, specifically if they're oriented toward high technology, metal-using industries, and focused policies are more effective in advancing national productivity than nonspecific policies.

The second form of studies looked at international issues. I think I can summarize very briefly by saying that we used the LINK model as a mechanism for simulations and we found that a coordinated international policy in which we work with our trade partners in advancing industry was more effective than a policy where our country would operate alone.

Let me try to summarize what our work suggests with regard to policy for the United States. First of all, let me say that industrial policy should avoid mechanisms which require centralized decisionmaking. It should maximize the use of the private sector. Industry policy measures should be formulated to provide incentives to private business rather than to intervene directly in business decisions.

While general—that is, nonspecific policies are less likely to interfere with private resource allocation, in some cases industrial policy may be designed specifically to alter the priorities established in private markets.

The evidence suggests, moreover, that target policies are likely to be more efficient than nonspecific policies, and this suggests possibilities for some useful compromises. Many of the advantages of private decisionmaking can be preserved by targeting funds to broad sectors rather than directing activities toward narrowly specific industries or firms or picking the winners kind of a notion in the narrow sense; rather than doing that, the eligibility for public industrial incentives should be targeted broadly to groups of industries that deserve priority assistance.

Now in concrete terms, we have the following suggestions. One, that we have a comprehensive study of the prospects and needs of U.S. industrial structure. This study should attempt to visualize what kind of an economy the United States aim for in the 1980's and 1990's. It should try to evaluate where the comparative advantage of American industry lies in a long-term perspective. Should we develop a service economy? Should we make use of our comparative advantage in agriculture or should we aim for an economy focused on high technology and manufacturing?

Such a long-run perspective on American industry should be carried on in a joint private-public framework. It should be updated regularly serving as a guide to public policy and to business investment. The subject of the word planning has been raised. I'm not sure whether simply looking ahead and asking where should this country be going is planning in a conventional sense, but clearly it is very important that we do look ahead.

Second, it's clear that we need a legislative and institutional framework for industrial policy. Obviously if our policy is to be forward looking and if our policy is not simply to be reactive, the framework must be set up in advance. Again, there is a serious question in my mind whether that implies setting up an industrial development board or whether that implies another, perhaps less concentrated, set of institutions utilizing some of the existing organizations.

Third, we need to expand and improve present incentives for research and development for new investment and for industrial transitions. Obviously, a legislative program in this direction must be based on the perspective, the study that I have referred to above. A strong case can be made for further augmenting the support for research and development. Moreover, the various investment expenditures, high rates of interest, low rates of return, and large risks stand in the way of rebuilding American industry and we must consider whether the incentives now on the books are sufficient to meet our needs.

And finally, obviously anything that we do in the area of industrial policy must not be a "go-it-alone" policy, but must be a policy which seeks to work with our trade partners in a setting of international economic cooperation. Thank you.

[The prepared statement of Mr. Adams follows:]

Prepared Statement of F. Gerard Adams

In the past decade the performance of the American economy has fallen far short of our hopes and expectations. Some of the major US industries--steel, automobiles, rubber, etc.—are in serious difficulty. United States manufactures have lost market share in world markets and imports threaten to dominate many traditionally American product lines. The consequences in terms of lagging employment opportunities, unemployment, and unequal regional development do not need elaboration. There is widespread consensus that the American economy faces serious structural adjustment problems, but paradoxically there is little agreement on what, if anything, should be done about them. The proposals for developing an American industrial policy, a comprehensive and coherent attack on the problems of industrial maturity, stand at risk in the political controvercy about the role of government and about the size of the budget.

During the past two years at the Department of Economics, at the University of Pennsylvania, we have been carrying out a broad series of studies of industrial policies. This work included a broad overview of theory, philosophy, and experience--worldwide--with regard to industrial policies. It has also included a number of econometric simulations of policy alternatives, as well as a series of detailed industry studies. We are now at the point where it is possible to draw some preliminary conclusions. That is the purpose of this paper.

The Concept of Industrial Policy

Our survey of the worldwide experience with industrial policy (Adams and Klein, 1981), shows a remarkably diverse range of policies aimed at a variety of objectives. A critical question then is: what precisely is industrial policy? We have found it useful to take a very broad view of industrial policy, including in this concept any measures intended to improve industrial structure or to aid in its adjustment, to provide incentives for investment in new industrial capacity, to stimulate research and development, to build "new" industries and to ease transition from "old" sectors. In short, we see industrial policies as impacting on the economy's supply side. We include all policies intended to improve productivity and competitiveness and to adapt the productive potential of American industry to the needs of the 1980's. Some of these policies focus narrowly on specific industries, but others have broad impacts on many sectors. A more narrow definition of industrial policy might call only for policies relating directly to the management of industrial structure or even to specific industries. But such a definition would narrow the scope of the measures considered to exclude many of the policy instruments which are most feasible in the United States.

Industrial policies can be looked at from the perspective of their purpose, their specificity, and their mechanisms. The purpose of industrial policy fall into three categories: policies intended to advance the "winners", policies to help the "losers", and finally, policies to aid in transition.

Advancing the winners—The objective of advancing the potential winner industries has an undeniable attraction. Many countries, among them, particularly Japan and France, have directed their policies toward this goal to find the industries in the forefront of technology and to aid them in establishing a leading position in the world economy. Such policies can be more or less specific and more or less interventionist. On one extreme they represent simply the effort to identify

the types of industrial sectors which offer long run comparative advantage--for example, high technology, agriculture, etc.--and to offer them maximum incentives. On the other extreme are the specific "picking the winner" policies which may involve active intervention by government authorities in the development and management of business enterprises.

Aiding the losers policies--Providing "bailouts" for industries in competitive difficulty has been a major reason for industrial policies in the United States and abroad. It is inescapable that assistance from the public sector will be sought when major industries run into trouble. The regional concentration of certain industries with resulting high incidence of unemployment in certain areas increases the pressures to support declining industries. It is important in this connection to make a realistic calculation of the long run prospect for the sector and the firm. Can it be salvaged into an economic, competitive enterprise? Do the ultimate gains from maintaining or supporting the "sunset" industry justify the costs incurred?

Smoothing transitions--The above leads naturally to the next category of policy, that intended to smooth transitions. Even if ultimately the elimination of certain industries and their replacement by other activities is justified, the social and economic costs of the transition are often very high. This means that there is justification for policies intended to ease transitions, to retrain or move unemployed workers, to find alternate uses of the plant facilities, to make effective use of the managerial staff which is being displaced, etc.

Specificity--With regard to specificity, we have already noted that policies can be specific to particular industries or even to particular firms or projects. On the other hand, industrial policies can also be quite general, being directed to

all industries or to eligible industries in a particular sector. For example, general policies intended to encourage investment may be an important part of an industrial policy which seeks to advance capital intensive industries or sectors which need to renew their stock of machinery and equipment. In other words, industrial policies as we have defined them, may, but need not, have specific focus on narrowly defined industries or enterprise, though admittedly, in many instances, industrial policy has been directed at development of particular industries or projects.

Mechanisms--Again the range of policy mechanisms is wide: from direct public intervention to policy measures which simply alter the priorities of the private sector and provide incentives: leaving private enterprise in competitive markets as the ultimate arbiter of business decisions. The advantages of the private sector oriented approach--in terms of assuring rational economic decisions, in terms of enterpreneurial innovation, and in terms of the "test of the market"--are considerable as compared to the risks associated with public sector capitalism.

The Lessons of Experience

Our survey of industrial policy shows that the philosophy of industrial policies and the strategies vary greatly between countries. To a very large extent, the approaches reflect the relationship between business and government and the political-economic philosophy. This makes it difficult to generalize, and particularly, it means that conclusions which apply in one setting may not be transferable to another. Simply because industrial policies have worked in Japan does not mean that they will be effective in the United States!

It is possible, however, to draw some lessons from the experience in industrial policy:

1. The diversity of industrial policy reflects the political and economic setting in the countries in which it is applied. Political influences, with respect to national aspirations, to regional and industrial inequities, or social goals, have greatly influenced such policies. But industrial policies aimed at economic targets have played an important role in industrial development of many countries.

2. In many instances, industrial policies have been ad hoc or reactive, seeking to redress the problems of particular industries or regions. But in some important cases, policy has been forward-looking in the context of a coherent scheme for advancing the economy.

3. Whether an industrial policy has been successful is often difficult to determine. The success of industrial policy is, frequently not just a matter of whether a particular industry has become competitive, though that is an important consideration. In many cases, it involves the question of whether the nation's industrial structure has been advanced in the ways desired and whether the other objectives, which have often been a part of industrial policies, have been achieved. Experience in many countries suggests that the success or failure of "outward oriented" industrial policies aimed toward establishing industries competitive in the world market is more easy to establish than in the case of "inward oriented" or protectionist policies. That is not to advance a mercantilistic policy. Rather, it is to say that international competition imposes discipline and establishes a market test against which industries can be compared.

4. Many countries, which compete with American industries in world markets, do provide extensive support for research and development in priority industries.

As we have noted above, economic theory provides significant backing for public policies aimed to supplement the operation of the free market in providing support for research and development activities.

5. With respect to mechanisms of policy, it is apparent that public enterprises or firms operating under an umbrella of protectionism represent significant risks of failure or inefficiency as compared to business forced to operate in the competitive environment of private enterprise. Reliance on decision making by private competitive enterprise, assisted as appropriate by industrial policy incentives, appears to offer the best prospects for building and maintaining a productive industrial structure.

The Macroeconomic Studies

The large scale macroeconomic models which we use to analyze the economy at Wharton are ideally suited to study the impact of investment incentive policies on the total economy. They contain a broad picture of the economy's structure on the demand side and on the supply side and they combine a substantial degree of industrial disaggregation in an input/output framework. Our objective in this work (Adams and Duggal (1982)) was twofold:

1. To show the differential effects of general investment incentives, and,
2. To compare their effectiveness with sector-specific policies, i.e., incentives which are targeted on broad, though specific, sectors of the economy.

Macromodel simulations were carried out introducing into the model a variety of investment incentive policies. In some alternatives the investment incentives were made available to all industries, in others they were limited to high technology, basic, or metal using industries. The objective was to evaluate the effectiveness of the alternative in terms of their impact on productivity and growth.

The following are the principal conclusions which may be drawn from the analysis:

1. In all cases, industrial investment incentive proved helpful in increasing investment and capital stock and in advancing productivity. In our calculations, the investment tax credit schemes proved to be somewhat more effective per dollar of expenditure than alternative policies such as increased depreciation allowances or general corporate tax cuts.

2. General policies, available on a non discriminatory basis to all industries, were nevertheless more utilized by some industries than others. Investment incentives tend to favor capital investment in capital-intensive industries and in those with high opportunities for capital/labor substitution.

3. Sector-specific policies, available on a preferential basis to some sectors, have more "bang for the buck", specifically if they are oriented toward high technology and metal using industry sectors, and are more effective in advancing national productivity than non-specific policies.

A companion study (Klein, Bollino and Fardoust, (1982)), looked at the issue of investment incentives from an international perspective. The objective of these studies was to see whether an internationally coordinated policy of investment incentives would be more effective than separate policies by the blocks of countries making up the international economy. Using the LINK international model framework, investment incentives were introduced into the United States economy. Then similar incentives were introduced into the economies of the other industrial countries. The computations suggest that coordinated international policy has considerably greater payoff than policies of individual countries operating alone.

It should, however, be noted that in both studies, we were dealing with broad incentives for investment. These analyses do not reach conclusions on the more industry- or project-specific ventures which have sometimes been proposed under the "picking the winners" concept. Nor do they propose or evaluate active public sector interventions in private business.

What Does Our Work Suggest With Regard To Policy For The United States?

It is certain that there is no easy transfer for policies applied elsewhere to the United States scene. In the first place, such policies have not always been successful. In the second place, they are highly specific to the political and economic environment in which they have been applied. Because they may work elsewhere is not assurance that they will work successfully in the type of relationships between business and government which are typical of the United States.

But there can be some useful suggestions nevertheless:

1. Industrial policy should be anticipatory rather than reactive. We should be looking ahead. We should not simply be reacting to current conditions. This applies both with respect to policies for aiding the potential winners as well as to assisting the losers.

2. Industrial policies should avoid political basis. Political pressures have played a role in determining industrial policies in many countries particularly since many such policies have been specific with regard to their industrial or regional impact. In many instances, the political motivation of the policies have distorted underlying economic considerations leading to misallocation of resources and in many cases to spectacular failures.

3. Industrial policies should avoid mechanisms which require centralized decision making. They should maximize the use of the private sector. Industry policy measures should be formulated to provide incentives to private business rather

than to intervene directly in business decisions. While it is realistic to recognize that allocations of public funds must entail a degree of public supervisions to see that funds are used as intended and to monitor the progress being made, the interventions should be minimized.

4. While general, i.e., non industry-specific, policies are less likely to interfere with private resource allocation, in some cases industrial policy may be designed to alter priorities established in private markets. Moreover, the evidence suggests that targeted policies are likely to be more efficient, to provide more "bang for the buck", than non specific policies. This suggests the possibilities for some useful compromises. Many of the advantages of private decision making can be preserved by targeting funds to broad sectors. Rather than directing activities toward narrowly specific industries, firms, or even projects, the eligibilities for public industrial incentives could be targeted broadly to groups of industries that deserve priority assistance. If more narrowly industry or project specific initiatives are called for, it is advisable to seek private sector assistance in running multiple projects along parallel lines in order to explore various alternatives and in order to establish competitive standards of operation.

In concrete terms, policies aimed at rebuilding the productivity and competitiveness of American industry should include:

1. A comprehensive study of the prospects and needs of United States industrial structure. Somewhat like the "visions" of MITI in Japan, this study should visualize what kind of an economy the United States should aim for in the 1980's, and 90's. It should try to evaluate where the comparative advantage of the United States economy lies in a forward looking dynamic sense. Should we develop as a

service economy? Should we make use of our comparative advantage in agriculture? Or, should we aim for an economy focused on high technology manufacturing? Such a long run "Perspective on American Industry" should be carried on in a joint private-public framework. It should be updated regularly serving as a guide to public policy and to business investment.

2. The legislative and institutional framework for industrial policies. The legislation and the institutions to implement industrial policies should be established before they are needed. The problems of the "rescue" operations for Chrysler and Lockheed illustrate the difficulties of establishing such measures on an emergency basis. To effectively implement various types of industrial policy--that which could set up incentives as well as that which could be used to aid declining industries and to extend transitional assistance--requires an organizational framework.

3. To extend and improve present incentives for research and development and for new investment and industrial transitions. Obviously, a legislative program must be based on the "Perspective" proposed above. But a prima facie case can be made for further augmenting the support for research and development, in public institutions, in education, and in the private sector. The barriers to investment expenditures--high interest rates, low rates of return, large risks--stand in the way of a rebuilding of American industry. We must consider whether the incentives now on the books are sufficient. New initiatives, including targeted investment incentive policies would support the industrial development needed to improve the productivity and competitiveness of the American economy.

4. Consultations with our trade partners. American industrial policy must be managed in harmony with that of other countries in an increasingly international world economy. There are serious risks in a "go it alone" policy as there are significant advantages in international economic cooperation.

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Representative REUSS. Thank you, Mr. Adams. Mr. McAdams.

STATEMENT OF ALAN K. McADAMS, PROFESSOR, GRADUATE SCHOOL OF BUSINESS AND PUBLIC ADMINISTRATION, CORNELL UNIVERSITY

Mr. MCADAMS. Thank you very much. I'm very pleased to be here today. It appears from what we've heard so far this morning that we are developing a consensus on having a consensus on industrial policy and maybe we're merely speaking to the convinced, but I hope the consensus is broader than that.

I became interested in industrial policy from a number of experiences, first with my service as a senior staff economist for the Council of Economic Advisers. I then continued with the task force on railroad productivity that looked to restructuring the northeast railroads. And I would say parenthetically that our recommendations were honored exactly in the contrary. Everything we recommended they did exactly the opposite, and I think we've seen the results of that.

I've worked also on the OTA study on steel, electronics, and automobiles and I found that to be a very useful and edifying experience. I think that we have some of the information gathering capability in government but we do need to expand it. And then, I also was associated with the U.S. Government's suit against IBM from 1971 to 1982; one of my major objectives there was to design a proper relief to restructure the industry in the event that the Government won the case. We know what happened to the case. Nonetheless, that led to a lot of work on my part and one of my observations was that there was no place I could go in government to talk to anyone who had an overall perspective on a major industry such as computers in order to get anyone to focus on whether our existing structure was appropriate for the needs of the country, whether it was the right one to have for the long term.

These various experiences have convinced me that we will eventually get to an industrial structure which is more explicit and with an industrial policy at the Federal level. I have studied other economies and from that I agree with other speakers today that we do need much greater cooperation, much less of an adversarial position among business, government, and labor. I think we need three major things. First, we need a formal policy at the Federal level; second, we need to catalyze productivity, to the extent that government is capable of doing it, through new relationships among businessmen and workers; and third, we need rational macroeconomic policies.

In my prepared statement at the end I try to point out how macro policies are determining our industrial performance today to a level that's extreme in our history.

In reaching my conclusions I've applied some principles. My principles are stated in a facetious way but I think they are appropriate and I think they are necessary if we're going to stay away from nonproductive arguments.

My first principle is that an important result of change is that things are usually different afterward. Now I think we tend to ignore that. The U.S. position in the world has changed dramatically. The U.S. interrelationships in international trade have changed dramatically.

We've had a threefold increase in the portion of goods GNP that is exported in this country. These facts are facts. Our economy is now much more interrelated with the world economy than at any time in the past and yet we have not made adaptations to this either in policy-making or in our institutional structure.

My second principle is that which has just occurred is not impossible. Now this is not a very profound statement but it is important to focus on. We say that our unruly democracy cannot ever hope to come to a consensus position on an industrial policy toward any sector especially for a particular sector in the U.S. economy. In accordance with my second principle, I think we have to rethink that. We have such a policy. However it's come about, it happens to exist in agriculture. We have a rational policy toward agriculture. I think most of it is the result of happenstance, but nonetheless, we have it, and that which has just occurred is not impossible. If we can do it once, we can do it again.

And then the final principle is a familiar one to the Joint Economic Committee and that is, in economics there's no such thing as a free lunch. Now I have a corollary and that is that there's an occasional snack now and then and I think we are able to build on some of these snacks. For example, we should recognize that we can build a rational industrial policy by starting from those areas where we have existing consensus on what the role of government is and we have mechanisms in place to deliver on those such as new incentives to investment and R. & D. and so forth. These are areas where everybody of all philosophies agrees that there is a role for government and we can start from there and build on it.

I'd like to comment briefly during this summary of my statement—I go through a great deal in the prepared statement—on some myths. One myth is that MITI in Japan, the Ministry of International Trade and Industry, controls and directs that economy very tightly. Two facts tend to belie that. One is that the size of the Government, in proportion to the Japanese GNP, is the smallest of any major industrial nation. Second, MITI's budget is 1 percent of the Government budget and approximately half of that is available for subsidies. You cannot derive fiscal miracles out of those kinds of numbers. That does suggest, though, that the Japanese are getting an occasional snack here with a small commitment of their government to get the kinds of results that we see in Japanese policy.

A second myth is that MITI is omniscient; it controls everything, runs everything, and has never made a mistake. Now there are two problems with that. One is that, first, it isn't true. For example, they did resist Sony when Sony immediately following World War II wanted to be the importer of electronic technology—they said that Sony didn't have the capability to follow through. I think that that has been proven to the contrary.

They have also tried to resist Honda's entry into the automobile manufacturing activity. Honda nonetheless persisted and we see that Honda has done quite well. And the result of these two movements against MITI shows that MITI is not omnipotent and the fact that the movements have been in the right direction shows that they're not omniscient.

We also know that MITI has attempted to catalyze a number of industrial developments which have not come about. For example, on commercial aircraft. I would add, yet on that one, because I think

that we're gradually giving that one away. But nonetheless, this tends to explode a myth.

But the second side of that is that people then turn in the opposite direction and say that MITI made a lot of mistakes, so the things they did right must have been just happenstance. Well, I don't think we need to either assume one or the other. I think we have to recognize, however, that there's an amazing batting average there that very few of us would not be willing to trade as decisionmakers and policymakers. They have done awfully well.

Another myth that I try to follow through in my prepared statement is that Germany does not have an industrial policy. In my statement I trace through developments in Germany and Japan and tried to contrast those with what's happened in this country.

Germany does have a national industrial policy. It happens to be implemented in the private sector through the banking sector and when I run through the three major criteria or elements that are necessary, as demonstrated by experience in other countries, for an effective industrial policy, we'll see that the German banking sector has been able to fulfill this for Germany quite well. It has generally been the acquiescence of the German Government allowing the banking sector effectively to have a veto power over their macro policies as well as their other policies and it has done something which a number of the politicians in Germany have appreciated. It's been able to say, "Well, that wasn't our idea; the bankers told us to do it." So you have a scapegoat automatically built in—if anything happens to go wrong—when you have an industrial policy implemented the way Germany has done it.

Well, let's take a quick look at how Germany has done it. I want to identify the major elements that I think are required for a national industrial policy.

We're all in agreement. There hasn't been a speaker yet today who has not identified indepth information as one of the key elements required for a proper industrial policy and, I would add, the ability to analyze it. One of the things I've observed about the Federal Government is we seem to be consistently denuding ourselves in government of analytic capability through budget reasons and other excuses for reasons.

The second element is the consensus recognizing mechanism with legitimacy for identifying that consensus. I've chosen my words carefully. I think that consensus tends to exist to a higher degree than we ourselves recognize, but if we had an agency such as one of those which has been proposed by other speakers today we would find that they're able to recognize a preexisting consensus and all we would be doing is providing legitimacy for them to do that. I think, at the level at which we need consensus for a proper industrial policy to be effective, the consensus is pretty much in place.

Here's a place where I think eventually we need an element that was discussed by other speakers and with the committee. We need institutional arrangements which make structural change that has been recognized and agreed upon possible to be brought about. There's got to be a forcing function.

I'm sure the first two elements would move us a long way and the range of alternatives available to decisionmakers would be consider-

ably reduced and we would be moving toward my major objective, an industrial policy. My major objective, and I think the objective of the country, is to achieve economic rationality in government decisions in relation to industry.

Now in accord with my first principle, we all recognize that that would constitute considerable change from the past and we would then thus have to see a number of things that are different.

One of the things that has to be there, in my view, that is different is a forcing function which will make it possible for the Government to have the leverage of last resort to get something done if industry has not followed through in response merely to the suggestions that have been made.

Now to the German industrial policy. German banking provides 45 percent of the boards of directors of German companies. German banks own 25 percent of the stock of German industry. This gives the bankers access to the information they need. The banks do, by definition, have the analytic capability. They're operating on an international basis. They are familiar with the trade partners and the Germans are therefore able to implement all three of the requirements that I've outlined for an effective U.S. policy. It's very clear that there's a tight interrelationship between the resource providing capability of German banks and the industry to implement those decisions that are essentially reached. The banking sector is an informal recognizer and creator of consensus in the German economy and we've already talked about how they interrelated with the German Government. So all three pieces are present.

Let's take a look at U.S. agriculture. We have exactly what is required in agriculture. Through the Department of Agriculture, through the land grant college system that goes right down through the extension system and into the decisionmaking of the private sectors in agriculture to the county agents, we have the ability to develop information, to analyze that information, and we have also the mechanism to provide new research and innovation into the sector.

We all know that we also have in place a number of financial institutions that permit the development of changes that are required. Now as I've shown my prepared statement to people in the School of Agriculture at Cornell, the main thing they agree with most strongly is the qualification when I say that this industrial policy has come about by whatever means. They say, "Yes, we don't think it was explicit, but nonetheless we've gotten there."

I'd like to trace through one of the dynamics that seems to work very well. We force farmers to be more productive whether they want to or not. We take advantage of the fact that farmers are in an atomistically structured industry, that they have R. & D. provided by the Government. By the way, you couldn't ask for a more socialized system than this; I always say this to my friends in the school of agriculture since the school of agriculture is a State supported activity and so the Government provides not only money for research but also the means of doing the research and the means of delivering the research. So we have a lot of things in place.

Once the Government sets a price support they do so in relation to the average cost of production. The farmer who finds himself with costs lower than the average has an incentive to improve his perform-

ance further to improve his profits. The farmer who finds himself with costs higher than the average must improve his performance or he will continue to lose money or go out of business, and the average farmer has to progress at least as fast as the average is improved by this combination of incentives that drive costs down, innovation up, and productivity up. If we have a problem, it is one of excessive productivity in farming.

So we have all three of the elements. We have a consensus policy which is that we want to have low-cost food available to our economy. We have all the elements there and I think we're all familiar with the fact that if we were to trace this through in Japan we would find the most explicit form of developing each of the three elements I've identified. I think the United States no longer can try to fight world class competition with a pickup team. It's like taking on the San Francisco 49'ers with a group you pick up on a sandlot and say every man for himself but we'll come together and take on this outfit that has a real policy of dealing with its industry.

My thoughts are elaborated in my prepared statement. Thank you very much.

[The prepared statement of Mr. McAdams follows:]

Prepared Statement of Alan K. McAdams

AN INDUSTRIAL POLICY FOR THE U.S.

At the outset, it is important to establish some principles which have guided the author in preparing this statement. These principles are:

1. An important result of change is that things are usually different afterwards.
2. That which has just occurred is not impossible.
3. In economics, there is no such thing as a "free lunch", (although there may be some "snacks" available now and then).

The significance of these principles to this paper is developed in context below.

Introduction

A great deal of change has occurred since the end of World War II. First, the world economy has changed very significantly. Second, the relative U.S. position in the world economy has changed even more dramatically during that period.

Today the U.S. economy is much more tightly tied in to the world economic system than it was at any prior time. This is illustrated by a few familiar statistics as shown in the table immediately below.

TABLE 1

	U.S. EXPORTS AS A % OF	
	GNP	GOODS GNP
1955	3.6%	6.7%
1970	4.3%	9.3%
1979	7.7%	17.7%
1980	12.9%	20.0%

Two columns are presented. The first shows U.S. exports as a percentage of gross national product (GNP). The second shows U.S. exports as a percent of what is known as "goods" GNP. "Goods" GNP differs from total GNP by the elimination of services. It represents only the physical goods produced in the domestic economy. We note that in 1955, a decade after the end of World War II, U.S. exports represented only 3.6% of gross national product. They represented a larger portion of goods GNP (by definition), approximately 6.7% of goods GNP. We note further that the exports share of goods GNP tripled over the next quarter century.

These data suggest that in accord with principle 1, we should expect that a number of things in the U.S. economy are now different. And, indeed, we all perceive that this is true. Among the things that we perceive is that U.S. products appear to be substantially less "competitive" along a number of dimensions than they did in any prior period. We also perceive that trade matters matter now. This committee is intimately aware of many such facts. (In the final section of this paper, we return to an unusual and disturbing aspect of the growing integration of the U.S. economy into the world economy.)

It is important to focus on one of the factors about which the committee is also aware, but which can stand substantial elaboration. A number of our major trading partners have employed explicit national industrial policies which have had the result of improving the competitiveness of their overall economies to the detriment of our own. It is the thesis of this paper that the U.S. in this changed world must also begin to do things differently. Policies which were acceptable in a prior age are no longer capable of providing the results to which the people of this nation aspire.

To improve the international competitiveness of the U.S. economy, two major elements are essential.

1. A national industrial policy.
2. A quality/productivity orientation on the part of both business and labor in the production of goods and services.

The United States is already moving toward these objectives, but the pace of movement is entirely too slow. Sometime in the immediate future a comprehensive program must be enacted and vigorously pursued. (Recent and pending bankruptcies lend a special urgency to this observation.)

We are all aware that a frequent response to any call for a U.S. national industrial policy is, "It can't happen here!" There then generally ensues a host of totally convincing reasons why our unruly democracy cannot achieve what a number of other unruly democracies have just achieved. But before we fully accept defeat and trail off into more lively discussions of the San Francisco 49ers or today's surprising Red Sox, we must note an additional matter: The U.S. has, and has had, a national industrial policy of long standing in relation to one major industry--Agriculture. Now it is necessary to invoke principle 2, at least long enough to be heard. It may not be impossible to establish a national industrial policy even in the U.S.

In explaining what is implied by a comprehensive national industrial policy, examples from the experience of Japan and of Germany are used. These two countries have followed quite different approaches to the development of their economies, but have achieved quite similar results. As is well known to members of this committee, the Japanese approach to industrial policy issues has been quite explicit, and in some ways more effective than those of Germany. The comparisons and contrasts among the

policies that have been followed in Germany, Japan, and the U.S. are instructive.

Before going forward, however, it is important to set some myths to rest. First, in Japan the percentage of gross national product attributable to government is the smallest of any major industrial nation. Further, the budget of MITI, the Ministry of International Trade and Industry, represents only 1% of the governmental budget. These figures belie the fiscal wonders often attributed to MITI. On the other hand, these facts imply that it is possible to achieve highly desirable results from an industrial policy without the direct commitment of enormous resources by the government itself. (This might qualify as at least a "snack" in accord with principle 3.) Second, the Japanese government has not proven itself to be omnipresent, nor omnipotent, or omniscient. It has made mistakes and suffered failures. In the early days following World War II it rejected the request of Sony to be a developer of electronic technology. Later it discouraged the entry of Honda into automobile manufacturing. It has as yet been unsuccessful in establishing Japan as a major commercial airplane manufacturer. Nonetheless, we recognize that the system followed in Japan has been quite effective; the batting average of decision makers has been quite high. There are few policy makers who would not be willing to trade their records with those of Japanese policy makers. Third, contrary to many perceptions and the protestations of the Germans themselves, Germany does have a national industrial policy.

It is also important to recognize, however, that the economies of the two countries that we are using for illustrations have been growing from their World War II base. This permitted (required) a very rapid rate

of growth and development. In the presence of such rapid growth, the processes of change and adaptation take on a legitimacy of their own. When the economy is growing, when productivity is increasing, when the standard of living is improving, workers find it in their interest to "go along" with the implicit and explicit policies which bring about such desirable outcomes. Some observers see the current period of economic slowdown as a time of testing for the German economy--and of the German democracy.

Elements necessary to achieve an effective industrial policy have been identified from a series of studies of industrial policies in other nations. These elements are presented and analyzed in part I of this statement. In part II, the quality-productivity orientation on the part of both business and labor is dealt with, largely through a discussion of protectionism as it has been practiced in the United States as compared and contrasted to Japan. The Japanese automobile industry and the U.S. steel industry will be the main focus of the discussion.

In part III of this statement, U.S. policy toward its agricultural sector is examined in some detail. This is an industry in which the United States--whether consciously or otherwise--has achieved a rational, effective industrial policy. This is a high technology, high productivity industry in which the U.S. is a world leader. It is a competitive industry in which the U.S. Government has taken a proper, active role.

Finally, in part IV there is an analysis of the unusual influence of net exports in the current economic recession. This is a situation in which the national government cannot "leave it to the private sector." The problems involved are matters over which the private sector has no effective control. To deal with the situation, the government must play

its proper and key role for the economy as a whole. Sound macro economic policies are a necessary element of an effective industrial policy.

Part I. Lessons From Industrial Policies in Other Nations

Studies of industrial policy in other countries identify several items as present in one form or another in each of the instances in which a national industrial policy has proven to be effective. From that experience we conclude that to improve the international competitiveness of the U.S. economy, a national industrial policy which includes the following three major items is necessary:

1. Information in depth, and the ability to analyze it.
2. A consensus recognizing mechanism with legitimacy for identifying that consensus.
3. Institutional arrangements which make structural change--which has been recognized and agreed as needed--possible to be brought about.

These requirements are the minimum necessary to permit the exercise of "economic common sense" in governmental interaction with business and labor in this country.

In accord with principle (1) stated at the outset, since for our national government to exercise economic common sense would imply substantial and fundamental change from the past, a number of things would indeed have to be different. Some of these are catalogued below.

Information and Analytic Capability

A great deal of information is gathered by various agencies of the U.S. Government. Having said that, we have identified an element of the problem for the U.S. Various agencies develop particular elements of important economic information. Each agency develops the information on

its own basis and for its own purposes; there is little coordination and no effective integration of the information that is gathered. Further, decision makers frequently find that no useful information is available to them from government sources on matters of urgent national concern. In such instances they often must rely on data supplied to them from the very parties who are the object of the policies and/or programs that must be implemented.

The U.S. Government lacks information about its own economy. It lacks a comprehensive means of developing information on fundamental matters about which it must make national policy decisions. It is even less well equipped to understand world economic facts, trends, and conditions.

What is required is timely, accurate, useful information about the economy and all major segments thereof. This information must be available not only about the domestic economy, but also about the international economy with emphasis on our major trading partners. The urgency of the need can be illustrated by contrasting how this function is carried out in other economies.

In Japan, the Economic Planning Agency (EPA) is the agency which develops information in depth about the Japanese economy to incredible levels of detail. This is the main function of EPA. It is essentially an information-gathering agency. It is the fount of information dissemination. It supplies information both to government policy makers and to policy makers throughout industry in Japan. Thus it is the main source of information and statistics for MITI, the Ministry of International Trade and Industry. MITI is the Japanese ministry with analytic capability for digesting information about industry, productivity and

other trends. It identifies the significance of trends and recognizes their relevance to require changes in the Japanese economy.

It is useful to look next at the key information sources in the German economy. Here the situation is, at least superficially, more complex. As stated above, many Germans within and outside the government will tell you that Germany does not have a national industrial policy. Technically speaking, this is perhaps correct. However, de facto they do have such a policy. It is technically an informal and unoffical policy, but one which nonetheless functions quite effectively.

German national policy is formulated and implemented largely through the banking sector with the three largest banks, the Deutsche Bank, The Dresdner Bank, and the Commerz Bank playing a major role. German banks place approximately 45% of the directors on the boards of 500 largest German business firms. German banks control approximately 25% of the common stock of these firms. Through the combination of stock ownership and membership of boards of directors, the German banking sector is possessed of a wealth of information about German industry in depth and in detail. German banking also operates on a broad international basis and therefore has become quite knowledgeable about trade and economic trends, especially those relating to its major trading partners in the world. Through this combination of circumstances, the German banking sector has been able to fulfill the detailed information gathering and disseminating functions for the German economy.*

An effective national industrial policy requires a high level of analytic capability within the national government. This is another area in which elements exist in various pockets throughout the U.S.

*Fiscal and monetary policies are not explicitly included in this discussion. The Bundesbank, in its control of monetary policy and influential in Fiscal policy, is essentially autonomous Germany's central bank.

Government. But there is no overall analytic capability--perhaps with the exception of the Central Intelligence Agency. What is required for industrial policy is an institution through which information and analyses could be made available in useful form both to all segments of government and to business and industry as well. This is a mission quite different from that of the Central Intelligence Agency.

It is essential for government to be able to identify trends in international trade and in the development of particular products and industries. It is equally essential for government to be able to recognize the significance of those developments and trends for the U.S. economy.

As stated above, in Japan this capability is found in MITI. MITI is organized so as to permit a continual monitoring of particular segments of the economy--those which are deemed by policy makers to be most significant to the future of the Japanese economy. This Japanese model is one which closely parallels that used by U.S. investment firms. That is, a small group of approximately four persons devotes full time to interaction with, and analysis of, a particular industrial sector. A four person group would consist generally of two bureaucrats, one technician and one financial analyst. This four person group monitors trade and industry publications and maintains liason and personal contact with the chief decision makers in the industry over which it has cognizance. Along with EPA, MITI monitors worldwide technology developments, domestic and international trends in product usage, industry productivity, the rate at which trade in particular products expands with growing world and (various) national incomes. The trends in Japan are constantly monitored in relation to the best of the rest of the world. A number of esoteric ratios are monitored and

evaluated to track areas of progress and decline, both absolute and relative.

In the German economy the main source of information is the banking sector, a sector also possessed of skilled analysts. Thus simultaneously there exists the analytic capability required to digest and interpret that information.

Legitimate Consensus Recognizing Mechanisms

In Germany, it is the banking sector which also tends informally to identify consensus on the future directions for the economy. At one level, ever since the end of World War II there has been a general consensus in Germany among government, business, and labor for an economy which adapts itself to world conditions. At a second level, there was an initial, preexisting consensus on the necessary industrial structure. Germany found itself fortuitously situated at the end of World War II. The economies of most of the industrial nations of the world were devastated. Capital goods of all kinds were required, but especially those industrial goods which had been the traditional output of German industry. Germany had the know how to provide them. Once their economy was rebuilt with the assistance of the Marshall Plan, the German economic miracle began. Through the good offices of the banking sector, the product mix has been gradually adapted to meet changes in world needs.

There has been consensus also on the direction of the development of the economy. As with Japan, the German "economic miracle" was an export driven miracle. As with Japan, it was fueled by a currency undervalued for over two decades. Free access to world markets was essential to rapid export growth. "Free trade" was the watch word of German economic policy (while it relied on the EEC to develop and provide protectionist

policies for key industries of Europe as a whole).

The German economy was required to remain open to its Common Market partners. Thus there was a need for constant adaptation of the economy to changing conditions in the EEC and also in some degree to the world economy. The focus on exports forced attention to quality and price. Exports have to be competitive or buyers won't buy. Given the success of the German experience, labor has found it in its interest to cooperate in maintaining relatively low costs for German export products in exchange for full employment. The result has been rapidly improving technology and productivity in the German economy and a rapidly rising standard of living. Growth provided the lubricant which made it possible for workers to forego excessive wage demands.

In the Japanese system, the overall consensus was that Japan should strive rapidly to catch up to the standard of living of the western economies. In Japan this was a more difficult and ambitious undertaking than in Germany. Its prewar product mix was not adequate to the task. Japan had no natural resources. It had to create comparative advantage where none had existed. What it created had to be based on imported raw materials as well as technology.

Based on the continuing monitoring of information and productivity trends by EPA, the Japanese were able to achieve rapid improvement and transitions in their industrial structure. The improvements in the structure of the Japanese industry required in the short run a number of protective measures for those infant industries upon which the Japanese were betting their future. It also required the putting in place of transition mechanisms to move resources from those less productive areas of the economy into the more productive areas which required resources to support rapid growth. Japan

organized its industry to achieve a number of self reinforcing adaptive mechanisms. More will be said about these in Part II.

The Institutions for Structural Change

The final major requirement for an effective national industrial policy is the presence of institutional arrangements through which structural change can be brought about in accord with the consensus objectives of the society. To illustrate what is required, we compare the institutions which permitted this in Germany with those which permitted it in Japan. From this we then are able to identify the minimal requirements for such institutional support in the U.S. economy.

In Germany the major credit allocators are the parties who develop information, analyze it, and determine its relevance to the consensus goals that they have identified for Germany. They are ideally situated to follow through on the results of the information, analytic, and priority setting steps. The very tight interrelationships among the governmental, banking, business, and labor sectors of the German economy make it only the next logical step for decisions once made to be implemented.

The German banking sector has often demonstrated its willingness to "act in the national interest". One example involved a consortium of German banks which concluded that it was not in the interests of Germany to have the Shah of Iran purchase the stock of the Daimler automobile company. To block the purchase they bought the stock themselves. Numerous similar examples could be cited.

In Japan, the entire financial and industrial complex is ideally suited to support economic structural change to achieve agreed upon goals.

This is a happenstance of the development of the Japanese economy in the post war period. It is not essential for an effective implementation of structural change as we saw from our brief review of the situation in Germany.

These caveats are important. The integrated nature of the Japanese industrial-financial system often leads American observers to throw up their hands in despair suggesting that the U.S. neither could nor should replicate the Japanese system. It is important to recognize that merely by identifying what the Japanese system is, does not imply advocacy for transforming the U.S. system to match that of Japan. Nonetheless, it is important to understand the advantages and disadvantages of the Japanese system. You must know and understand your competitor. The advantages will remain with the system over the long term. There are efficiencies in the Japanese system which will be difficult if not impossible to match. It is likely that United States business firms will remain at an efficiency disadvantage to the Japanese because of differences in our capital creation systems. This disadvantage will have to be overcome through ingenuity in other sectors.

In Japan the bank of Japan is a crucial agent. It is a government agency which provides liquidity of last resort to the major banking center banks of Japan known as city banks. In turn, the city banks are affiliated with loose industry conglomerates, the successors to the Zaibatsu's of the prewar period in Japan. The fact that a very large portion of long term capital is supplied to Japanese industry by the banking sector on short term, renewable, ninety day notes provides great leverage to the banking sector to influence the operating policies of

businesses in Japan.* The fact that the city banks are affiliated with a "family" of industrial firms makes it possible for the conglomerate to respond to the guidance of the banking system by shifting resources among the corporations affiliated with that family.

Let's explore a hypothetical example. Within the Japanese system EPA provides the basic information as to trends in domestic and international economies. Assume that a particular sector of the Japanese economy is recognized as declining in productivity relative to the rest of the world or in relation to the needs of the Japanese economy, given its objective of matching the standard of living of western nations. Through its analytic capabilities, MITI would identify changes which would make possible continuing growth in productivity and standard of living. This information would be supplied to the banking system through what is known as "administrative guidance". In turn, the bank of Japan would pass the information on to city banks, with "family" companies operating in that sector. They pass the information to the family companies. Financing is likely to be readily available for projects which accord with directions contained in administrative guidance; less so for other projects.

Once the direction of future development within Japan has been set through administrative guidance, then it is in the interest of all parties to facilitate movement in this direction. For their part, the private business firms have the assurance that new starts in these directions have the backing of the banking system and, in turn, of the

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*This situation is changing. Many major Japanese firms have been sufficiently profitable over an extended period to free themselves of short term debt. As this trend grows "administrative guidance" will be increasingly difficult to implement.

government of Japan. With such knowledge and backing it is possible for the business firms to undertake ventures which without such backing might be too risky. In effect, for the firm the risk of financial ruin has been removed since the national government stands behind such new ventures.

A fundamental principle of economics is that there is a relationship between the risk of a project and the financial return required by investors from that project. As a general rule this relationship is stated in terms of the risk/return ratio. That is, there is an assumed direct proportionality between risk and the return that must be earned on a given project. Given that the Japanese system lowers the risk for projects which fall within "administrative guidance," the return required for such projects is effectively reduced. Thus the Japanese are able to use their capital resources more efficiently than would otherwise be the case. This is an element that leads to the rapid economic growth in Japan. One might argue that risk has merely been transferred to government. But even if so, in light of their "batting average", that risk must be perceived as low. In addition, decisions are made only in the presence of general consensus and in the presence of an enormous amount of heavily analyzed information--two risk reducing, average raising factors.

A second element leading to lower capital costs in Japan is the heavy savings rate which is characteristic of the Japanese consumer. The Japanese saving rate is two to three times that of the U.S. Through normal supply and demand relationships the relatively large supply of capital available through savings in the Japanese economy also suggests a lower cost of capital to firms able to access the Japanese savings.

Conclusion

Germany and Japan offer sharp contrasts in approach, yet great similarities in outcomes as well as in the elements through which the outcomes are reached. In Japan each element in its industrial policy is explicit. Government's role is the leadership role. Consensus is codified. Decisions are explicit. Legitimacy is formally bestowed and recognized. In Germany many elements are de facto rather than formal and explicit. Many are historical happenstance. Banks play quasi-governmental roles. Consensus has been present, but it has been informally arrived at. Legitimacy comes from acquiescence--especially on the part of government--and lack of challenge, rather than through formal recognition or bestowal. This implies that a wide range of mechanisms are possible through which to achieve given objectives.

Given our starting point in the U.S., it appears that a "fresh start" is necessary if the required changes in attitudes and ways of doing things are to be brought about. The process can be implemented in stages beginning with the information gathering and evaluation stages. In microcosm this has already begun. Your OTA is a step in the right direction, although as with most things in this country, it operates ad hoc and intermittently.

Consensus on a gross level will not be that difficult to achieve:

--An improved standard of living.

--Increased productivity and worker job satisfaction.

--Improved competitiveness of U.S. goods and services.

--Fair access by trading partners to each other's markets.

Even such platitudinous goals have powerful implications for a government which pursues economic rationality in its policies. In the presence of

timely, useful information in depth such goals can represent truly effective constraints on decision makers to act responsibly. It is the absence of goals, and an absence of mechanisms to provide visibility and documentation for violations of "economic rationality" which permit special interests to work their will.

The U.S. must provide a leverage mechanism for its industrial policy makers. Neither those which catalyze structural change in Germany nor those which do so in Japan is right for the U.S. We must design our own. But it must be one which can mobilize financial and economic resources to assure that those things which must be done do get done. Though the analogy is far from perfect and the past implies some baggage, it can be characterized as a "modern day RFC." As a minimum its existence would provide the "credible threat" that if some other actor, whether public or private, does not do the essential--nonetheless it will get done through the leverage mechanism.

Part II. The Japanese Automobile Industry

In the early 1960s the Japanese automobile industry had achieved the first stage of its development in accord with the standard plan followed by major Japanese industries after World War II. By this stage the Japanese through scouring the world for the latest state-of-the-art technology in automobile design and manufacturing, had achieved technological parity with the rest of the world. However, the Japanese government and the industry realized that the industry was both new and relatively small in scale as compared to the industries in the established industrial countries. As a result, despite the technological parity, Japanese costs remained substantially higher than those of its trading

partners.

At this stage, approximately 10% of the Japanese families had achieved automobile ownership. MITI and the Japanese industry concluded that until approximately 40% of Japanese families could become automobile owners, the industry would be operating at a scale insufficient to match the costs of manufacturers in other parts of the world. To move from 10% of families to 40% of families achieving automobile ownership was an enormous change for Japan with implications not only for manufacturing and supplier industries, but also for the infrastructure of highways, service stations, repair networks, dealer networks and the like. Nonetheless, the Japanese moved quickly to achieve this goal. In the meantime, during the period of the 1960s, MITI protected the industry very aggressively. Import duties on automobiles were set and maintained at a high level. Furthermore, there were extremely onerous "safety" inspection requirements for imported automobiles. The inspection procedures called for virtual disassembly and reassembly of the imported automobile. The effect of these barriers was effectively to foreclose imports of automobiles into Japan.

In accordance with principle 3 above which cautions that "in economics there is no such thing as a free lunch," it must be noted that by its import restriction policy, Japan saddled its domestic economy with relatively high cost automobiles for two decades. Consumers' needs could have been met at a much lower cost (and thus price) through imports.

But MITI was looking to the long term and to automobiles as an an eventual export product. MITI concluded that it was necessary to achieve scale economies and the economies from learning by doing (learning curves) in automobiles. To facilitate reaching world-scale it tried to

bring about mergers among the major Japanese manufacturers. It also discouraged the entry of new firms such as the motorcylce manufacturer, Honda, into the automobile manufacturing arena. Despite the activities of the Japanese Government, however, several manufacturers persevered, and the Japanese domestic market has become very competitive. Toyota, Datsun and Mazda became the big three. But in addition, Honda was able to enter automobile manufacturing through reliance on its own financial resources, despite discouragement from Japanese officials. Mitsubishi also persevered, establishing a linkage with the technology of the U.S. Chrysler Corporation. Isuzu became affiliated with General Motors and is "a comer" in the market today.

When the Japanese domestic output reached the level which permitted economies of scale in automobile production, the Japanese then began their export drive. Having reached technological parity many years before, they reached parity in costs and in quality in the intermediate period and then set out to match the marketing acumen of their larger U.S. and European competitors.

The U.S. market was the main focus of the Japanese export effort. They concentrated initially on the West Coast. As early as 1970 they achieved market penetration of approximately 15% in California. Gradually they were able to achieve a similar penetration nationwide in the United States. In the last decade the Japanese imports have surpassed Volkswagen and other European imports as the main foreign competitors in the U.S. By 1980 the Japanese had virtually doubled their prior penetration of the U.S. market.

The Japanese explicitly protected their infant automobile industry. This protection persisted past the time at which technological parity

had been achieved by the Japanese manufacturers. It continued throughout the period that Japan was using its rapidly expanding domestic market as the base for achieving scale economies and low costs as the basis for export penetration of the U.S. and European markets. During this period U.S. manufacturers were at least cost competitive with Japan for similar models. However, the Japanese had selected for export the smaller models which avoided direct confrontation and head-to-head competition with the U.S. manufacturers.

Let us recognize what the Japanese Government was doing. It intervened in the auto industry and provided protection to that industry in order to facilitate its becoming competitive, productive, and finally the low cost producer of the world. Many of its efforts to achieve a greater level of concentration in production--a result which could have speeded the achievement of scale economies--were rejected and/or thwarted by the private sector. But the overall goal has more than been achieved. And the Japanese industry is highly competitive at home as well as in foreign markets.

For a number of years now, the Japanese tariff on imported automobiles has been set at zero. Nonetheless, the other non-tariff barriers have foreclosed the Japanese market to imports.

The general consensus of analysts within and without the automobile industry today is that the Japanese have achieved a cost advantage of approximately $1500 per car landed in the United States. That is, they can deliver an automobile of quality equivalent to that of an American car at a price $1500 lower, or they can provide a car with $1500 greater value at the same price as a given American car. This suggests that taking shipping costs into account, a U.S. manufacturer would find his

automobiles landed in Japan from the U.S. at at least a $2000 disadvantage. Given these agreed-upon facts, Japanese policy toward liberalization of automobile imports is moot today. There will be no exports of automobiles from the U.S. to Japan. If this country were to "win" a concession for the removal of all non-tariff barriers which foreclose American automobiles from Japan, this would be a meaningless concession by Japan; it would be no more than cosmetic. This type of analysis can be made for a number of other products.

And now to some myths. Japanese automobiles are not "high technology" entries; they are state-of-the-art equivalents of other manufacturer's products. Japanese automobile production facilities are not more highly automated than are those in the U.S. There is rough equivalence even down to the number of robots used in the most modern facilities of the various manufacturers.

Japanese advantages lie in the motivation of the workforce plus the innovative management and cost cutting techniques which they have implemented. These are elements which a national government can not directly influence or require, but they are elements which clearly differentiate Japanese industry from that in the United States.

American industry must learn to tap the natural desire of working people to do a good job. The Japanese have been successful in tapping the native, inherent good sense and perception of the worker in contributing to efficiency, productivity, and product quality. This is paradoxical, given that the Japanese society is a thoroughly hierarchical society in which everyone is a member of various hierarchical groups. One cannot even speak to someone in Japanese unless one knows whether that person is superior to him in the hierarchy, equal, or

inferior, because the choice of words and the demeanor must change with relative status. Yet, in the workplace the Japanese have been able to treat the lowest worker as a source of wisdom, to give him respect, to reinforce his feeling of self worth. That is an enormous achievement, and it is a recent achievement (of only the last two decades or so). We in the U.S. are supposed to be an egalitarian society and economy, but we have not yet learned to treat our blue-collar workers in a way which permits them to do the best job they can and feel good about it. The Japanese have learned the requirements for improved productivity by studying theories and experiments on productivity throughout the world, a large portion of which comes from the U.S. The difference is that the Japanese have implemented what they have learned and made them work in the Japanese society. We have not done so. We have continued with our prior ways. We are now beginning to learn from the Japanese who learned from us. It's going to be difficult—perhaps impossible during periods of depression level unemployment or during periods when large groups in our society have the perception that they are not being fairly treated. High productivity takes place in an atmosphere of mutual respect, where individuals feel that they have something to contribute, and that when they do contribute, their contribution is recognized and rewarded. The Japanese system has permitted this. Given their explicit and well publicized national industrial policy, Japanese workers know when they are contributing, not just to their own well-being, but also to the greater good of their country.

Japanese workers have achieved other strong loyalties as well. They look upon their firm in the way a number of our more rabid rooters

look upon the football team or baseball team or basketball team in their home city. They rabidly root for their company in competition with other companies to improve productivity, market share, and profits. And they are constantly provided with data and information that lets them know how they are doing. Nonetheless, they recognize that they and their firm are going to be successful only if the objectives of their company are consistent with the objectives of Japan as a nation.

Workers in this country seldom have such feelings--that what they're doing contributes not only to themselves but also to their organization and to their country. But we're beginning to see that without the product quality and high productivity that such awareness brings, we're being badly beaten in world markets. And since the largest market in the world is right here where we can see it, and where we can feel it, the perception of being outdone is becoming widespread around us. American business is beginning to move, but it has a long way to go. The required change in attitudes and personal relationships in our workplaces is something that can be assisted by good leadership from government (in part by making national objectives explicit and known), but in the end, it has to be implemented by industry and workers coming to the recognition that that's how you get improved productivity and product quality. A national industrial policy such as that discussed in part I will make an enormous contribution, but it can not be truly successful unless it is matched by the second element of improved product quality and productivity at the workplace. Government can only nurture an environment within which that comes about.

In moving to reestablish the international competitiveness of our society--not just our economy--we must recognize that we are starting

from where we are, not from where we would like to be. We may have to endure short-term inefficiencies in order to achieve long-term goals. But again, we must recognize that that is a price we may have to pay--recognizing, of course, that there is no free lunch. For their part, the Japanese have had to endure long periods of severe inefficiency in anticipation of the long-term payoffs of having their companies become world-class competitors. We've seen it happen in automobiles, we've seen it in computers, we've seen it in semiconductors. In two of the three areas, the Japanese have emerged as world leaders. An economy can't accept long-term inefficiency, but short-term inefficiency which contributes toward long-term goals may be an essential price that has to be paid.

U.S. Experience: The Steel Industry

The U.S. has provided protection to the U.S. steel industry over a long period. This has not prevented continued relative decline in the industry. There have been no quids pro quo in exchange for "temporary" protection provided by government. (There has been no analytic capability even to determine what these might have been. There has been even less interest in conceiving of such conditions.)

The OTA study of the relative competitiveness of steel, electronics, and automobiles makes a number of very important observations about the steel industry. Both the steel industry and the Steelworkers' Union participated in the OTA study. The study demonstrates that a major problem of the U.S. industry has been that wage rates have gotten way out of line with productivity increases. Unit labor costs for steel in the U.S. are thus out of line with those elsewhere in the world,

increasingly so in recent years. This has been a result of the interaction between the industry and the Steelworkers' Union. For its part the industry has continued its policy of high dividend pay-out while at the same time failing to redress the technology and productivity imbalances discernable in trends of long standing.

Had there been such a thing, the government, acting in accord with a national industrial policy consensus, would have insisted, in exchange for temporary, effective protection of the industry--a practice which forces inefficiency and high prices on the U.S. economy--that those who benefit accept a social compact to modernize their productive facilities, jointly humanize their in-plant relationships, jointly achieve improved productivity. Where even this would not suffice to bring profitability in the absence of protection, it would jointly have to have been recognized that it was time to move on to new things.

The OTA study establishes that continued long term U.S. domestic production of steel is both desirable and necessary. In particular types of steelmaking, U.S. firms retain a technology and/or cost advantage. In some inland areas of the country, domestic production of steel remains attractive given the high transportation costs of steel. But the OTA study also shows that steel is unlikely ever again to regain its prominence in the U.S. economy. Improved productivity implies that fewer workers will be employed per ton of steel produced. Fewer, not more tons will be produced. Steel will not be a significant export product for the U.S. in the future. These facts from the OTA study represent consensus. Their implications are clear.

The U.S. economy has changed. The world economy has changed. The role of the steel industry in the U.S. economy will be forever different (principle 1). Nostalgia is no substitute for economic common sense.

Fundamental adjustment to reality must occur. Government's proper role is to facilitate the adjustment to reality and minimize the disruptions it implies.

Our existing approaches to adjustment assistance and to protection have proven themselves to be failures. Yet we continue to re-implement similar policies over and over again. We make no assessment of why they failed—nor do we even recognize that they failed. These are important differences in the way we treat our declining industries as compared to the way in which other countries, such as Japan, treat their declining industries.

This does not mean that government is or should be "picking winners and losers". It does mean facing the facts when a game is essentially over. The market has determined who has won or lost. Government can not reverse the reality supplied by the market—and it should not try.

The phrase "picking winners and losers" is probably the most destructive slogan inhibiting a move toward economic rationality in U.S. governmental decision making. Government can not, and should not "pick losers" (or winners). But it has a duty to provide hospice care to those industries in which markets have demonstrated conclusively and irrevocably that the illness is terminal. Economic rationality suggests that heroic interventions to perpetuate the vital signs of an industry only prolong the agony and magnify the costs, both for the participants and for the society.

Simple criteria can be used for initial screening for governmental support:

1. Does this activity offer the possibility of improving the standard of living in the U.S.?

2. Can employment in this sector achieve productivity sufficient to meet the opportunity costs of labor used elsewhere in the economy?

3. Can government contribute something not otherwise available?

In the absence of positive responses intervention, other than hospice care, should be avoided.

The United States has also engaged in "protectionism" for its automobile industry during its current depression period. The automobile depression has been brought about by economic policies of the U.S. government aimed at stopping inflation. That is the conclusion reached by our own International Trade Commission. Tight money and high interest rates have been among the means employed for achieving this. The differential impact of such inflation-fighting measures on interest-rate-sensitive industries such as automobiles, housing, other consumer durables and business investment goods are well known to this Committee. The government-induced recession has coincided with the need for the American industry to transform itself to deal with the cartel induced, order of magnitude jump in the costs of energy world-wide. The changeover in its product mix requires enormous investments for American firms. General Motors alone anticipates that its expenditures will exceed $40 billion. The changeover is taking place in the presence of huge losses experienced by domestic manufacturers.

U.S. Government policies have reduced the U.S. auto industry to infant-level vulnerability. Its output is restricted; its costs are high; simultaneously it is struggling mightily to adapt its product line to petroleum prices free of domestic price controls, but escalated tenfold over a decade (while OPEC continues to do its best to maintain its cartel control of world oil prices).

This implies that U.S. and Japanese firms have essentially reversed the roles each had in the early 1960s. Because of the depression in the U.S. automobile industry, U.S. manufacturers are not operating at an efficient scale. Their fixed costs per unit are excessive and will remain excessive until they are able to return to full scale operations. Under prior conditions with reversed roles, one could understand both the benefits and the costs to Japan of its protection of its infant automobile industry. There are similar implications of benefits and costs of protection for the U.S. industry today.

Thus it appears to represent economic rationality to protect temporarily the U.S. auto industry. But only if the result could be the transformation of the U.S. industry to make it a world class competitor once the protection was removed. That is what Japan "bought" with its protectionist policy of earlier years.

There is no mechanism in the U.S. Government which could extract a *quid pro quo* for temporary government protection of the auto industry. There is no agency through which the U.S. Government could follow-up to determine if the *quid pro quo* were being delivered even if one were agreed to. The U.S. has no infrastructure to implement a national industrial policy. The U.S. has no rational, national industrial policy (though it has such a policy for one sector as we explore below).

We appear to be relying as in the case of steel on the "good sense" of the industry to do what is required. (Recall the recent actions of General Motors of devising and announcing new incentive bonuses for its management immediately after extracting substantial concessions from the UAW.)

If the automobile industry depression can be brought to an end and large scale production resumed, if the U.S. industry can effectively and efficiently succeed in refocusing its product line on fuel efficient vehicles of modern design and world class quality, if the U.S. management can improve its manufacturing efficiency to match that in Japan, if U.S. management and workers can jointly cooperate to bring unit labor costs in the U.S. down to a reasonable relationship to that in Japan, then the U.S. industry will be able to serve a reasonable share of the U.S. market for autos when protection is removed.

The U.S. market is a replacement market. Its growth prospects are dim. Its export prospects are essentially nil. Increased productivity and continued automation both imply fewer workers required per car produced. The employment outlook is negative. These are consensus facts. They come from your own OTA study. World and national markets have established these facts. Government is not "picking winners or losers" by recognizing them in its decision making. U.S. automobile production will not be the engine of future U.S. economic growth (no pun intended). But in the absence of a national industrial policy based on economic rationality, the automobile industry could become a domestic basket case draining the economic vitality of the country. We could achieve results even less rational than in steel.

In electronics, the OTA study has demonstrated that the "protection"

measures in the face of blatant dumping by our trade partners as established through our clumsy monitoring mechanisms have not been enforced. The study also established that the vaunted Trigger price mechanism for steel has been conceived in such a way as to serve as a magnet for the dumping of European steel into the U.S. market. (The Trigger price which keys a policy response is based on the costs of production of the low-cost producer, Japan. European steel can thus be priced below its costs--which are generally higher than our own--without triggering the trigger.) The OTA study demonstrates that our "protections" don't protect. Our "adjustment" mechanisms result in no adjustments.

It is time for a change.

Part III. U.S. National Industrial Policy for Agriculture

In agriculture the U.S. has achieved through one means or another a national industrial policy. It could become a model for the rest of the economy.

The structure of the agricultural economy is one of highly competitive atomistic units of production. Economic theory instructs that a major disadvantage of industries so structured is that they are generally unable to support a proper level of research and development. It instructs further that if research and development would be socially desirable, it is the proper role of government to see that it is accomplished. This is precisely what government has done. It has provided heavy research support to agriculture. Through the land grant college system and the extension programs of land grant colleges along with the county agent system for delivery of research output, new technology is constantly flowing into the U.S. agricultural sector. Not only is basic research supported, but applied research is also. Market research and product development are conducted. Technical and managerial know how are delivered through a delivery system which reaches down to the level of the individual farm. The result is a very high technology, high productivity, world leading agricultural industry.

In the agricultural sector there is a consensus on national policy goals. The objective is to have abundant food available to the U.S. populous at low real cost through high productivity of operation. However this consensus was achieved, it has been operational for several decades with obvious results.

If there is a problem in U.S. agriculture, it is one of "excessive" productivity, especially during a period in which the exchange rate for

the U.S. dollar is "abnormally high" (see Part IV for detailed analysis of these relationships). This leads to a "farm" problem as opposed to a "food" problem.

The U.S. Department of Agriculture develops a great deal of highly useful information about the agricultural sector as well as about world wide agriculture. Analyses of this information are made available to policy makers on a regular basis. No other sector of the U.S. economy is studied in such detail or with such breadth, or in such depth, extending from the most basic biotechnology research efforts, to support for improved marketing of hot dogs made from turkey meat.

Analytic capability of a high order exists both in the Department of Agriculture and in the land grant college system. Consensus has been reached and continues to remain robust despite a number of competing pressures.

There is a very active financial sector which ties in very closely with the production sector in agriculture. The Commodity Credit Corporation the Farmers Home Administration, a host of similar governmental and cooperative organizations make possible the financing of farms, technology, equipment and crops for the agricultural industry.

The price support system has worked to force improved technology and innovation into the farming sector of our economy as attested to in recent weeks in a number of articles on the "agricultural technology treadmill". The mechanism works as follows: substantial downside risk is removed from farming through the establishment of price supports for major agricultural commodities. Farmers are given loans which are secured by their crops valued at the support price. If market prices fall below the support price, the farmer can still satisfy his loan obligation by

forfeiting his crop. In effect he sells his crop at the support price no matter how low the market price. The support prices are set in relation to the average costs of production of farmers in a given region. Thus the more efficient farmers find themselves more profitable than the average. They see immediate incentive to improve their profitability further by improving their technology base and productivity. Similar pressures apply to less efficient farmers. With costs at the average or higher they find their profits at the average or lower. They are literally forced to move to newer, more efficient methods of farming in order to increase their productivity. The incentive system places all farmers on the "treadmill" since the actions of the others lead to an annual lowering of the average costs of production through innovation and productivity improving methods. The average farmer must invest in new technology merely to "remain average". Any farmer must improve at more than the average rate in order to make headway against the treadmill.

Whether designed with these results in mind or not, the results nonetheless have been achieved. Productivity increases in farming in the United States have proceeded at at least twice the rate of the nonfarm economy. In recent years when nonfarm productivity has actually been falling, the performance of the agricultural sector has been even more impressive.

If the objectives of a national industrial policy are to achieve world leadership in a given industrial sector, to implement high technology approaches which lead to lower unit costs of production through innovation and productivity increases, then the agricultural sector in the U.S. economy is a glowing example of the success of a national industrial policy.

A number of onlookers and even participants fail to note the pervasive role of government in the U.S. agricultural sector. Farmers are identified in our folklore as fiercely independent and conservative in their economic and social outlook. Yet, they operate in a sector in which government involvement at the federal, state and local levels is greater than in any other sector of the U.S. economy.

In agriculture the government is performing its proper role. It is supporting research and development at all levels. It has provided a technology and innovation delivery network which is pervasive, effective and accepted right down to the level of the individual producer. It has properly "overtaken the private sector" in this sector of the U.S. economy.

Conclusion

All the elements of an effective industrial policy are present in the U.S. Agricultural sector.

1. Information in depth, and the ability to analyze it.
2. A consensus recognizing mechanism with legitimacy for identifying that consensus.
3. Institutional arrangements which make structural change--which have been recognized and agreed as needed--possible to be brought about.

This sector could serve as a model for the development of policies for other sectors of the U.S. economy such that the government can exercise "economic common sense" in its interactions with business and labor in this country. Indeed, that which has just occurred is not impossible.

A Digression on Japanese Agriculture

There remains at least one success story in the U.S. economy,

agriculture. How have the Japanese progressed in this sector? If one were to seek a "disaster area", this would be a good place to look. Domestically produced rice in Japan costs 3 to 5 times the world price. Government price support payments exceed the budget for the Japanese military.

Japan is the leading customer for U.S. agricultural products, despite the fact that it has been the victim of a number of embargoes on the export of farm commodities (intended to help hold U.S. food prices down at particular points in our recent history.)

Many Americans feel that the Japanese should admit greater quantities of U.S. agricultural products into their economy. They fail to recognize that for Japan, agricultural production serves a national defense function. The Japanese objective is to remain as self-sufficient in agriculture as possible in anticipation of a national emergency. They cannot do this given their relative endowment of arable land, without providing substantial subsidies to their farmers plus substantial protection to those farmers against the much more productive U.S. agriculture. In addition to the national defense objectives, Japanese agricultural policies also "buy" domestic, political stability and rough equality between agricultural and urban living standards. In terms of basic economic rationality alone, the policies appear to be difficult to support. But the decisions of Japanese policy makers in relation to agriculture are highly rational in the context of the complex objective function which they are attempting to achieve. In accord with principle 3, however--in economics there is no such thing as a "free lunch"--the result is that the subsidized price is out of sight. And Japanese food prices generally are extremely high.

Part IV

With the greater integration of the U.S. economy into the world economy a new phenomenon has developed in the current recession. Some analysts identify the net foreign investment element (exports minus imports) as the major determinant of the depth and severity of today's recession.

In recent years a number of analysts have noted that the U.S. economy was functioning in a manner different from the prior two decades. This is consistent with principle 1 above and with the changes which we have identified throughout this statement. The U.S. economy, by being more tightly tied in with the world economy, has found itself subjected to significant pressures which previously could be ignored as negligible. Now these pressures can no longer be ignored. For example, analysts have begun to realize that the international sector had a substantial role in the rise of inflation through 1981, as well as in the recent rapid decline in the inflation rate. This latter phenomenon has indeed been a mixed blessing as we show below. We trace through the dynamics which interrelate:

1. the anticipated huge deficits for fiscal 1982-83-84 and beyond,
2. high interest rates in the domestic U.S. economy,
3. an abnormally high exchange rate for the dollar,
4. a substantial decline in net exports,
5. an increased severity of recession, and
6. a decrease in the U.S. inflation rate.

The key to the interrelations among these items is a dynamic which has come to be known as "financial gridlock".

Highway traffic experts have coined the phrase "gridlock" to

characterise the situation in which it is impossible for traffic to move in any direction in a metropolitan area due to the congestion of traffic throughout the entire grid. That colorful phrase has recently been applied to the financial sector of the U.S. economy: the economy is stymied; all financial avenues are blocked.

These are the dynamics. As a result of the recession, corporations find themselves with declining profits and cash flows from operations and thus in need of liquidity. They look to the financial markets to alleviate their needs for cash. Given the extremely large anticipated federal deficits, long term interest rates have remained extremely high. Businessmen have been reluctant to commit themselves to such high rates for long periods through long term debt or equity issues. Instead, they have fallen back on short term sources. But the magnitude of the demand in relation to the supply of capital has caused very high short term interest rates. These rates are high not only in nominal terms, but also in real terms (the stated rate less the inflation rate). Today's rates are the highest real interest rates in recent memory. The prime rate remains in the 16-17% range, while the current inflation rate is in the range of five to seven percent. This implies real interest rates in the range of 10% or more. The normal range for real interest rates is three to four percent.

Real interest rates of this unusual magnitude serve as a magnet for world short term liquid assets. The result has been an influx of short term funds to the United States from all around the globe. In turn, this influx has led to a rise in the exchange rate for the dollar. That is, the heavy demand for dollars has raised the exchange rate substantially, leading to a disparity in relation to the fundamental

economics of the U.S. vs. the Japanese vs. the German economies. For example, analysts have concluded that the dollar is overvalued in relation to the Japanese yen by approximately 30%. It is similarly overvalued in relation to the Deutschmark.

The overvaluation of the dollar then has a substantial depressing effect on sales of U.S. export goods. The strong dollar leads to high prices for U.S. products in world markets which leads to a smaller quantity of those goods demanded. Similarly it leads to substantially lower domestic prices for imports. In turn this leads to a greater quantity of imports demanded. Together these result in lower net exports.

The effect the abnormally high exchange rate for the dollar has had on the net export component of gross national product has been a major explanatory variable for the current recession. Private economic analysts conclude that up to 80% of the decline in GNP during the current recession is directly attributable to the drop in net exports.

This is an extremely unusual development for the U.S. Net exports have generally been a factor leading the economy out of recession. The normal dynamics are clear to see: when the U.S. economy moves into recession, demand for imports ordinarly falls and the domestic price for export goods tends to stabilize or even decline. The usual result then is an increased quantity of the then more attractive U.S. goods demanded and decreased demand for imports. The combination implies an increase in net exports, a factor leading to an increase in GNP. Thus the economy begins to overcome the recession pressures. Precisely the opposite has occurred during the recession of 1981-82 as we saw above.

It is possible to see how this situation could be reversed, but it is unlikely. The element necessary for a reversal is a drop in interest rates, but we have traced through how financial gridlock blocks that avenue.

Of course, if the anticipated huge deficits in fiscal years 1983 and 1984 could be overcome, then long term interest rates could fall; businesses could find it attractive to engage in long term debt and equity financing, and thus the pressures on the short term financial markets could be relaxed. If this chain of events were to eventuate, the result would be a decline in short term interest rates which in turn would make the U.S. less attractive as a haven for the short term liquid assets of the world. The artificially high exchange rate would begin to fall toward a more "normal" level and we would begin to see the normal contribution of net exports in overcoming the recession. Note that in this scenario, both short and long term interest rates move in the same direction, downward, which would then also make capital investment much more attractive. This would spur the domestic economy.

It is abundantly clear that problems of this magnitude are not overcome by "leaving them to the private sector". These problems have been created in the public sector, largely through the fiscal policies which have resulted in the huge projected deficits. The private sector is powerless to reverse what the public sector has wrought. Only through policies which put our fiscal house in order, can we break loose from the financial gridlock which stymies the economy as a whole.

The Reagan Administration has taken credit for the recent declines in the inflation rate. The above analysis demonstrates that a significant portion of the decline in the inflation rate is directly attributable

to the abnormally high exchange rate. We just traced through how when the exchange rate rises, the prices of import goods automatically fall in relation to domestic prices. Similarly, with a higher exchange rate, the quantity of export goods demanded falls, and thus the domestic price of export goods in the U.S. economy falls. This double barreled effect is estimated to have contributed between two and three percentage points of the decline in the inflation rate over the last several months.

There is a further dimension in which the Administration's policies have assisted in the decline in overall U.S. and world inflation rates. High interest rates in the United States have required European and the Japanese policymakers to respond with rates higher than would otherwise be the case in their own economies. The result has been to dampen economic activity worldwide leading to the recession in Europe and the economic slowdown in Japan. The combinations of U.S., European, and Japanese economic slowdowns leads to a decline in demand for, and thus lower prices of raw materials, the most significant of which has been petroleum. Worldwide recession (plus conservation) have caused a drop in worldwide demand for petroleum products. This has contributed to the oil glut and in turn the fall in energy prices.

Energy prices and food prices are the major additional explanatory variables for the decline in the U.S. inflation rate. The abnormally high exchange for the U.S. dollar has hurt agricultural exports which are very price sensitive. Demand has shifted from the U.S. to other suppliers of agricultural products. In turn this has led to a decline in the domestic price for agricultural products, a subset of the phenomenon discussed above for exports in general. It has also led to economic disaster for many farmers (and farm communities).

The above paragraphs reinforce principle 3. In economics there is no such thing as a "free lunch". For the Reagan Administration to take credit for the decline in inflation rates, they must simultaneously take responsibility for the combination of domestic and worldwide recession, financial gridlock, and the miseries which all of these imply for the U.S. and for its world trading partners.

Conclusion

In this section we emphasize the fact that an effective U.S. industrial policy can be implemented only in the context of sound macroeconomic policies. The abnormally high exchange rate for the dollar in relation to the Japanese yen, in the range of thirty percent, represents a greater hurdle than can easily be overcome by the most ardent practicers of productivity improvement and quality assurance. At the macroeconomic level, the federal government has been able to obviate whatever improvements managers of business firms and labor in cooperation with workers could possibly hope to achieve. This is illustrated by the situation in the automobile industry. The frequently quoted Japanese cost advantage falls in the range of $1500 per car. But note that for a $6000 car, a thirty percent overstatemnet of the exchange rate for the dollar implies an $1800 abnormal decrease in the price tag for Japanese cars. Thus, we see that macroeconomic policies have an enormous effect in this currently highly competitive sector of the U.S. economy.

Once again we are left with an important observation. The private sector cannot bring about change of sufficient magnitude to overcome that which the public sector has wrought. It is high time that the public and private sectors began to work in concert and not as adversaries. This requires a new focus from each. It requires a commitment to cooperate through a comprehensive national industrial policy.

Representative REUSS. Thank you, Mr. McAdams.
Mr. Magaziner.

STATEMENT OF IRA C. MAGAZINER, PRESIDENT, TELESIS, INC., PROVIDENCE, R.I.

Mr. MAGAZINER. Thank you for inviting me to speak today. My background over the past 9 to 10 years now has been as a business strategy consultant, primarily trying to advise companies on how to compete more effectively both in this country and elsewhere in the world. For a number of years now we've formed a company to try to use those concepts of business strategy to advise government on industrial policy and industrial policymaking. The company of which I'm now president is involved in advising a number of European governments and governments elsewhere on the conduct of their industrial policy. I suppose you could say, to the extent we're successful, we're part of the problem vis-a-vis the United States rather than part of the solution.

But I think what is important from our experience over the past few years, especially in working in a lot of countries, including the United States, for corporate clients and also for the government clients, and what strikes me, as an American, to be most important is the extent to which American companies are being out-competed and out-invested in a lot of industries which still form the core of our positive trade balance. What it has said to me and what I'm most concerned about is that I think in the next 5 to 10 years the kind of industrial decline we might face in a number of key industries is going to be much greater than what we've seen over the past decade and is really going to take away a lot of the foundation of what constitutes our current high levels of standard of living.

Having said that, I'd like to discuss briefly today's economic policies and what I think is wrong with them. If I think back to the history of the implementation of the kind of economic policy we have today, it was justified on the basis of trying to get American industry reinvigorated. There's been a lot of testimony in this committee and also in public about the short-term consequences of this policy which have been very contradictory on their face—and that is, the high interest rates and the recession and the budget deficits and so on, and the fact that the programs that are now in place are inequitable.

But I'd like to also emphasize today, more importantly I think, the long-term implications of these kinds of policies and that is that they presume that if you can somehow increase the flow of investment funds to industry or to private investors, who are wealthy enough so that they don't have to consume their extra tax breaks, that extra flow of funds in itself, combined with a reduction in government interference and government regulation, will necessarily result in a more competitive and a more productive economy in the long term. I think there are a couple of problems with that approach.

One is, as this committee is well aware, most of the tax cuts will in fact go to fund consumption rather than savings and investment. Second, much of what is invested will in fact be speculatively invested in a way that doesn't really help long-term competitiveness or flow to productive industry.

I think what perhaps has been less brought out in the public arena is that even those funds which do go to productive industry I think in many cases are not going to get invested in the best interest of the long-term productivity of the American economy. Insufficient infrastructure investment will occur. There will be a lot of maintenance investments rather than ones that have a long-term productivity payback that fundamentally alter the product and process of industries. There will be a lot of investments in distribution and financing and resource industries rather than in productive industries. There'll be a lot of investments in kind of chasing cheap labor rather than improving productivity.

Now from the point of view of companies making these investments—many of our strongest manufacturing companies—these are probably reasonable short-term strategies. If I were a business consultant called in to evaluate the investment in the finance company or distribution company to distribute Japanese consumer electronic products in the United States or whatever, I would say, yes, from a short-term point of view that looks pretty good for you and given the uncertain times you might as well go ahead and do that. But for the economy as a whole that's not going to produce the kind of results we need to improve our standard of living.

And the reason why the proper pattern of investment or the proper investments are not going to take place isn't because our business people are doing this because they don't understand strategy and so on. I think one can fault our business system for many things—and I know you've had some people testify before your committee who've talked about some of the strategic weaknesses of the American businessmen and I would agree with those—but even if American businessmen were behaving in the most rational way possible from a long-term strategic point of view, there would still be reasons, given the way in which our market economy is set up today, why the proper allocation and proper pattern in investment would not take place. I'd like to mention just briefly a couple of those.

One is that in many cases the public and the private return on investment are going to differ for a lot of projects. I think the committee is very familiar with the arguments about research and development and the fact that the public return on research is often much greater than any specific private sector will get as a return. Also, the public return on investment in manufacturing and traded businesses is much more than the private calculation that would take place investing in distribution or finance or local communications businesses. A number of our clients of major U.S. manufacturing companies are major leaders in manufacturing and when you look at the pattern of their investment they're investing in the likes of finance, distribution, local communication; this is where they see their growth coming from.

Third, within the industries, I think if anyone had looked at the Japanese steel industry in the 1950's, you would have said, I don't want to put my money there; if I'm going to invest in steel, I'd put it in the U.S. industry; the U.S. industry has 70 percent of the world market and is the technology leader, and as a private investor, that would have been the right thing to do. On the other hand, like the Japanese Government, you really couldn't sit back and say, well, let

the private market forces work when you wouldn't get enough investment in your economy.

We have a similar situation in a lot of products today where American companies have been slow off the blocks technologically and are in a follower position. If you wanted to invest in a video cassette recorder business today or a number of other businesses you wouldn't look to an American company naturally as a private investor. But as a public body concerned with the public aura, you'd have to consider a different set of returns.

Also, you've talked about catalytic industries. We talked about linkage industries. It's really the same thing. There are a lot of industries whose linkages in the economy cause a different public versus private aura in considering the investment. If I'm a shareholder of an automobile company I consider only what's good for that specific automobile company and my decisions about investment or liquidation would relate only to what I saw happening with that company.

If I'm the public body concerned with the public aura, I'd better take into consideration that 30 or 40 percent of our machine tool capacity goes into the automobile industry, a large portion of our steel capacity and so on, and that if I let my automobile industry go down the tubes, then I'm going to have trouble with a lot of those industries which feed into it. Therefore, the effects across the economy are linked and much greater than a private investor would consider.

Finally, many private companies find it much easier, when thinking about how to reduce their costs, to become more competitive, to try to seek lower wages and try to drive down wages in negotiating agreements. I think that's an appropriate function for them to perform but not when it's performed to the exclusion of also trying to invest in productivity improvements. From the public point of view, constantly hammering down wages and trying to seek lower wages doesn't increase the standard of living of the country and, rather, there's got to be much more of an emphasis on trying to develop new products and new processes.

So the public and private can be different. Second, market mechanisms will work in allocating capital, but sometimes they work too slowly and as you know competitive processes are really like a leading position in a race. When you gain competitive advantage in an industry, you have to keep investing to keep that competitive advantage and the company that has a leadership position can maintain that leadership position if it is aggressive. What happens I think very often now is that American companies are too slow in moving particular market mechanisms that would allocate capital.

There's been a lot of talk about the short-term orientation and risk aversion to investment in companies. I think that's true in large companies and also in small companies that our venture capital markets tend to work very slowly. We'll get companies started up but the venture capital people want returns very fast and very often success can kill you. When a small venture starts to grow, it needs more capital than it did in the beginning and you have to keep putting that capital in and that's where a lot of our venture capital goes awry. We have a lot of success in small company creation but unless there's substantial DOD contracts a lot of those companies lose out and go bankrupt after a couple of years of success and have to sell out.

A third reason why market mechanisms move too slow is that the pacing scale of technology is increasing in a lot of industries. The amount that you have to invest to get into a new product generation is increased astronomically in most industries and yet the payback time that you have—because technology is changing so fast—is much shorter.

What that means is in relation to the resources of your parent operations you've got to put a lot more money in compared to your current asset base and your current base of sales than you would have had to 10 or 15 years ago. It is the same thing to build a new scale plant. The scale of optimum plants is increasing in many industries and therefore you've got to make a much bigger commitment relative to your current assets and that tends to slow people down.

Finally, skilled training is something I know you've talked a lot about. It is something which will happen but very often it happens too slowly when market forces are involved. We have massive unemployment but, at the same time, we have severe shortages of certain kinds of skills.

The final reason why the market forces can't be expected to allocate on their own, besides the public versus private and the slow market mechanism questions, is the question of social dislocations. There's been a lot of analysis of what happens, through no fault of their own, to workers in certain geographical localities through the natural functioning of the economy. It's natural in a healthy market economy for certain types of industries or certain types of activities to phase out and other types to come in to replace them; people get displaced in that process. And if you let the marketplace work that out, it often can do it but will have very serious social costs which I think, as a civilized society, we don't want to accept anymore.

So what tends to happen when you don't have explicit policies to deal with this is that you move either toward protection or you move toward severely harsh social realities for a large number of people.

Now these are kind of theoretical bases which say, yes, the market is a good thing and, yes, we want to have a market economy, but there are certain places where the market economy is not going to function adequately in today's complex world.

There's a fourth reason why I think we need more than just the simple throw a-lot-of-money-at-the-problem supply-side approach. That is, as we do our work in other countries and also for U.S. corporations, we're very much struck by the efforts that are taking place in those countries for government support of industry. We are involved in that process trying to help those governments do that allocation more efficiently, both representing companies and representing governments. One can point to some of the mistakes of the past and talk about British socialism or talk about the Concorde and see those mistakes, but I think that would be making a big mistake and be very naive.

A lot of the countries that are engaged in active industrial policies have learned a lot from their mistakes and have 10 or 15 years of experience of trying to improve upon industrial policies and I think the success ratio, not just in Japan but in Europe, has been increasing dramatically in terms of industrial policies that are taking place there. Just in the industries that we've worked in as a company over the

past couple of years I'm very disturbed by what I see as lack of investment on the part of the American companies and a more aggressive investment posture on the part of the European and Japanese companies. These are industries in which the United States is currently strong.

So in addition to these theoretical reasons, there's a very pragmatic reason I think why we've got to get moving beyond this so-called supply-side macro approach.

Not to overstay my time, let me just say a couple of things that I think should be said on the shape of an industrial policy that we undertake.

I think what I'm describing is not so much that Government sits there and says, I like semiconductors this week and why don't we put money there? What I would advocate would be something more along the lines of what are called horizontal policies in other countries. That is, Government funding is involved to encourage certain types of investments that the market is not going to have made enough of on its own. So, you can speak about encouraging investment in traded manufacturing versus nontraded industries in research and development in higher risk projects, in skilled training, in application and diffusion of new technologies, in overseas market development for small- and medium-sized companies, for application and use of new capital goods technology and so on.

You have certain purposes which are related to the kinds of investments that the market is not sufficiently providing. In any company that you work for, you see a whole series of different investments that bubble up to the investment committees and tend to get accepted in too many American companies are the ones that are the safest investments and the ones that have the short-term payback. What you really ought to do is try to change that return on investment criteria by offering incentives to some of the good projects that now are deemed to be too risky or deemed not to have enough of a return for that particular company but which are in the public interest—you should set up the mechanism to provide incentives for particular kinds of investments.

Second, you want to set up the kinds of incentives that can be very finely honed to particular economics of a particular business. My colleagues here talked about the small amount of funds in MITI. I think that's a bit overplayed because they can trigger a lot of funds from a lot of other agencies and a lot of other groups within the Japanese economy.

The reason why the Japanese system and also the German VEFT and some of the more successful mechanisms in France have been effective is because they don't simply say we've got to give more capital investment incentives and more R. & D. investment incentives because for about 50 or 60 percent of the industries there providing growth in the United States now, capital investment is a very small part of their total investment needs.

When they're formulating an investment, it's directed, to a greater extent, toward engineering or market developments or applied research and development or some other aspect of their cost structure where the upfront money has to be put to develop a new business; if you simply have a capital incentive, you're going to miss what they need.

If you look at electronic instruments or machine tools or robotics or a lot of these new areas, the specific capital investment is only about 15 or 20 percent of the total investment need. So you need to have mechanisms that are flexible enough that are geared to the specific economics of a given business. That's been something that allows you to really target very precisely and spend less money and get a lot more out of it.

Third, I think you do want to try to avoid bureaucracy. I agree with one of the earlier speakers about not having the kind of large, centralized function which can get a little bit too big for its britches in terms of the economy. You want to get as close to the market as possible and let people in companies initiate investment choices. I think it would be not infeasible but I think it would be somewhat dangerous to try to set up a kind of national investment committee that was going to decide investment decisions. The real expertise for that is within the company. The problem is that a lot of things that come forth within the companies are not being invested right now, a lot of things that need to be done.

So what I would prefer to see is a number of bodies which have small, permanent staffs but utilize a lot of outside expertise to help respond to company investment initiatives. I think the companies ought to be required, as the German VEFT does, to be putting up at least 50 percent of the funds and the Government would play a responsive role in kind of matching funds and so on.

The final point I would make is that I realize that there are risks to this kind of policy—whenever there are funds that are centralized in Government you can have the risk of people mismanaging those funds, of political favoritism, of lack of expertise, and so forth—I think a lot of people in the business community with whom I talk are always worried about giving more authority to Government in that respect.

I acknowledge these risks and I think I'm a believer in Government and what Government can do. I've seen governments in other countries overcome those risks although albeit not 100 percent of the time, but overcome them and become more efficient in administering these kinds of policies. I think we in America have a certain pragmatism which went along with how to conduct these affairs and I believe Government can be successful in this kind of effort and that we can develop the right kind of mechanisms over time. I think the risks of not going toward this kind of policy are much greater than the risks associated with going to it. Thank you.

[The prepared statement of Mr. Magaziner follows:]

Prepared Statement of Ira C. Magaziner

PERSONAL BACKGROUND

I have worked as a business strategy consultant at Telesis and The Boston Consulting Group for nine years, advising corporations on how to utilize their resources to become more competitive and to grow. During this time, I have advised companies in a wide variety of industries based in the U.S., Japan, Germany, France, Great Britain, Sweden, Australia, Canada and Mexico.

For the past six years, I have also consulted for governments and coalitions of industry associations, unions and financial institutions on questions of National Economic Development and Industrial Policy. Telesis, with offices in Providence, Paris and Melbourne, was founded three years ago in large part to develop new conceptual approaches for such policymaking, trying to build on concepts about business strategy and international competition to create useful economic policies for governments. We have conducted studies on industrial policy in Sweden, France, Great Britain, the Republic of Ireland, Belgium and Japan.

I have coauthored two books, one on Japanese Industrial Policy and a recent one on the need for new directions in U.S. economic policy. Studies that Telesis has performed in Sweden, France and Ireland have also been published in book form in those countries.

BACKGROUND TO TODAY'S ECONOMIC DEBATE

Six years ago, when we first started assisting governments to develop long term economic policies, the term industrial policy was not often heard in America. The activities of governments in Japan, Germany, France and Great Britain to support industrial development were little understood. They were generally viewed in this country as dubious subsidies, or even unfair trade practices, with little redeeming economic value. We in the United States applied individual protectionist measures for clothing, textiles, shoes, steel, televisions, ships and many other products, but regarded these as unrelated pragmatic solutions to particular circumstances of international trade. Our Defense Department, National Aeronautics and Space Administration, and Energy Departments provided huge grants to

industry, but these were viewed as basic defense or energy policies. Finally, a wide variety of government agencies in response to special pleadings provided a bewildering array of price supports, tax reductions, export subsidies, loan and loan guarantees and targeted grants, but these were done on an ad hoc basis and never considered as part of our economic policy.

We acknowledged as legitimate economic policy, traditional demand management (fiscal and monetary tools) to moderate the ebbs and flows of the business cycle and regulatory policies to prevent anticompetitive corporate behavior.

Then, rude events in 1979 pushed our economic debate in new directions. OPEC redoubled the price of oil, triggering a world recession and causing a shakeout of competitively weak companies in many industries. Our automobile industry was badly exposed, and Chrysler went to the edge. Automobiles became an overnight symbol of America's competitive decline. The country realized that the problems previously experienced by U.S. producers in steel, consumer electronics and other industries might have more fundamental causes than unfair practices by trading partners.

The response to the realization that U.S. competitive industrial decline might be a major cause of our economic problems was to emphasize and to take a keener interest in the policies utilized by other governments to stimulate industrial investment and industrial restructuring.

Until recently, the U.S. debate on industrial policy was reminiscent of how some European countries, particularly Great Britain, have approached the debate for over a decade. The debate has been highly ideological and allows for a heady dose of posturing on the virtues of "the market system" by all sides while pointing to the incompetence of government and the greediness and shortsightedness of industry on opposing sides.

The debate has presented two polar options for economic development policy: (1) having the government select areas for investment and engage in comprehensive national planning or, (2) getting the government to reduce further its role in the economy through less regulations, lower taxes and less government spending so that the private sector can get on with the job of revitalizing the economy. These roles are often characterized as "picking winners" versus "laissez-faire" or "selective" versus "general" government role. This framing of the alternatives jeopardizes the debate from the start. Useful pragmatic policies will not emerge from this type of discussion.

I would like to take the opportunity today to phrase the issues in a different way and to suggest some directions for future U.S. economic development policies.

THE ECONOMIC FUNDAMENTALS

Our economic discussions over the past few decades have focussed on the problems associated with macroeconomic business cycle management, since inflation and unemployment caused by investment cycles were perceived as our major problems.

However, our problems run deeper today. Our basic ability to create wealth is in question and it is therefore necessary to take a more fundamental look at the process of wealth creation and examine where we are failing.

Wealth is created by productivity improvements and the ability to fully employ human resources. Together these lead to a growth in goods produced in the society. The driving forces behind productivity improvements are the development of more efficient production processes, investment of sufficient resources to implement them, and an effective organization of the workplace to optimize the teamwork of the workforce.

The driving forces behind full employment of human resources in today's world economy are the development of new products which cause people to spend to replace or augment their stock of goods and the development of new markets for existing products by encouraging the economic development of poorer nations so that their people may enter the world economy as producers and consumers. In this way, certain goods requiring less industrial skill and less complex organization are produced in these countries and traded to more industrially developed countries for capital goods and more complex consumer goods.

Long term, the living standard of an industrially developed nations' people is determined by the following factors:

- The extent to which it develops and implements new processes and ways of working to improve productivity absolutely and relative to others engaging in the same industrial activities.
- The extent to which it fully utilizes its human resources to maximize production of goods and services and to provide sufficient aggregate demand in the economy.
- The extent to which it develops and commercializes new products and services to meet market needs.

. The extent to which it increases the value added per hour of work of its people by continually restructuring it's economy to phase out activities increasingly performed in low wage countries and to phase into new product areas.

An economy consists of hundreds of thousands of businesses. The effectiveness of a country's government, business managers and workers in accomplishing the above goals in these businesses is the main determinant of its international competitive position and its ability to create wealth absolutely and relative to others.

While the U.S. economy remains strong in many ways, over the last decade we have not succeeded in pursuing these goals of wealth creation. Our rate of productivity improvement has been among the lowest among industrialized countries, our unemployment rate has been among the highest, our trade balance has remained significantly negative and our ability to pay for increased oil imports by increased manufactured goods exports has lagged that of other industrialized countries.

THE INADEQUACY OF CURRENT SOLUTIONS

Traditional demand management policy has assumed that new process and product development will take place, new markets will be opened up, necessary capital and labor adjustments will occur as industries restructure and there will be a competitive supply of U.S. goods if only aggregate monetary and fiscal demand management policies are implemented efficiently across the business cycle.

Current economic policies reflect a critique of these assumptions. These "supply side" notions have questioned whether demand management is sufficient to ensure long term increases in wealth. I agree with the question, but disagree with the remedies that have been put forward.

The assumptions inherent in current economic policies are that private industrial investment can be boosted by reducing government's role in the economy and that this increased investment will cause America to become more productive and competitive. These assumptions led to policies which have cut taxes primarily for wealthy individuals and companies in order to increase funds available to industry; have reduced enforcement of environmental, worker safety and trade regulations to allow industry a freer hand with its funds; have maintained high interest rates to dampen demand in order to reduce inflation and raise business confidence; and have reduced government social spending in the hope that this would

increase work incentives and minimize budget deficits despite increased defense spending.

This program has proved contradictory on its face. Tax cuts combined with increased defense spending have increased the budget deficits despite cuts in social programs. High interest rates have prolonged and deepened the recession, making businesses unwilling to increase investment. The recession has increased unemployment which has augmented social spending requirements even as further attempts to reduce social programs are being proposed. The tax cuts primarily benefitting wealthy individuals who have a higher propensity to save have not yet resulted in greater savings and are likely to increase consumption more than investment.

Critics of the administration's economic policies have understandably focused today's economic debate on these contradictions. But the problems with current economic policies go far deeper, into the very assumptions about wealth creation embodied in these programs.

The U.S. already has a smaller government sector and lower public levels of social expenditure than almost all other industrialized countries. Government regulation of labor markets is greater in other countries and worker safety and pollution requirements are as great as in ours. Government can surely be made more efficient, but government social programs and regulations are not the cause of our declining productive growth and competitiveness.

Nor will simply placing more funds into private hands necessarily result in an acceleration of product and process development or greater competitiveness. Most of these funds will not be invested at all. Estimates are that less than 30% of the personal tax cuts will actually be saved and invested. Of the additional funds which are invested by individuals and companies, a large proportion will go into non-productive uses - speculation in land, art, gold or asset rearrangement, and to the legal, accounting and financial professions who earn handsome incomes from engineering these investments.

If recent history is any example, even a large proportion of those funds which do flow to productive industry will not be used in ways which ensure long term competitiveness. Insufficient funds will go into long term R & D, into projects which fundamentally improve production or product technology, into overseas market development, or into high risk longer payback projects. Little will go to retrain our workforce for higher skilled jobs required by many growing industries or to ease the hardship of regions and workers dislocated by

necessary industrial restructuring. Insufficient funds will go to develop export markets for our small and medium sized firms.

Because of the kind of incentives provided by our present business system and the depressed environment created by current economic policies, many U.S. manufacturers will find it more attractive to invest their additional funds in warehouses and distribution systems for importing Japanese or European goods rather than investing in manufacturing facilities to compete against these goods. Others will find it useful to make incremental maintenance investments to improve costs marginally instead of taking more fundamental steps. Many will find it attractive to chase cheap labor and use tax refunds indirectly to set up plants abroad rather than to put modern facilities in the U.S. Still others will become cash managers using cash to earn returns on trading and money lending rather than on manufacturing investments.

While these uses of tax-cut dollars may maximize the short term cash flow of the investing companies, they do little to enhance the long term growth, productivity and competitiveness of the American economy.

The fact that our pattern of investment has not been and is not likely to be maximally productive does not mean that government direction should replace market forces in the allocation of capital in this country. Nor does it mean that managers are banal or incompetent. In the book I coauthored, "Minding America's Business," a number of chapters are devoted to strategic errors often made by American managers. But even if these were not made, the problem of our suboptimal pattern of investment would remain. Strategic errors by businessmen are a partial cause of our problems. But, the cause also lies in certain market imperfections brought about by the complexity of today's international competitive marketplace and by the need to maintain certain basic standards of social decency in the organization of our society. Because of the first, public and private investment returns can differ for many projects and market mechanisms may react too slowly to changing events, and because of the second, the needed structural adjustments in labor markets may not occur due to the human cost associated with them. It is for these reasons that a more active government role is required to assure economic development.

The basic inadequacy of today's "supply side" solutions is that they do not in fact enhance the productivity and growth of the U.S. economy. The short term recessionary effects slow investment. The assumptions about how to revitalize American

industry rest on improper diagnoses of the problems. Oppressive government regulation can be an annoyance to business, but is not a fundamental cause of our problems. Reducing this regulation will have little effect on our competitiveness. Increasing levels of investment can be helpful, but only if the pattern of use of that investment is appropriate. Current policies "throw" a huge amount of money in the direction of wealthy individuals and companies, but do nothing to ensure that its use will improve U.S. productivity. In fact very little will be used in this way.

While the aggregate shortcomings of today's economic policies can be solved through traditional means, the problems caused by an inappropriate patterning of investment require a new set of policy tools. Since this shortcoming rests on the existence of market imperfections, it is useful to identify more specifically the nature of these imperfections.

Public vs. Private ROI

The sum total of private return on investment decisions may not result in the optimal public return on investment if market forces alone dictate investment choices.

Research and Development often yields benefits beyond those which can accrue to the individual investor and innovator. The public returns to such activities can therefore be greater than those realizable by the investor. Insufficient investment of this type may therefore be undertaken by private investors.

Given today's difficult international competitive environment, it may make good business sense for American manufacturers to concentrate investments in nontraded businesses or resource businesses where they do not have to meet tough Japanese and German competitors. Rather than competing in internationally traded manufacturing businesses many U.S. manufacturers have been earning high returns from investments in finance and credit operations, distribution companies, local communications ventures, and nontraded manufacturing ventures. This may make sense for these companies, but can lead to an underdevelopment of the manufacturing base of the United States.

In many infant industries where U.S. companies are followers, it may well be that private investors are better off investing in the foreign leaders who are competing with U.S. producers, rather than investing in fledgling U.S. companies. Similarly, if one had looked to invest in steel in

the early 1950's, the strong U.S. competitors with 70% of the world market would have looked like a much surer bet than the fledgling Japanese industry. But governments cannot view this investment decision in the same light. They must take a longer time horizon. Thus, the Japanese government had to take the view that developing that infant industry in Japan would yield a good future ROI even though prudent private investors would not make the same calculation. A similar view may need to be taken in cases where U.S. industry has fallen behind in new product technologies such as VCR's and shows no sign of aggressive investments to catch up.

Certain industries have linkages which mean that their success has enormous significance for the success of many other industries in the country. For example, the U.S. automobile and aircraft assembly and engine industries use a significant portion of the output of the U.S. steel, rubber, aluminum, plastic, machine tool, metalworking and other industries. An individual investor in a given automobile company need not consider this in making his decision about expansion or contraction or liquidation. Those calculating a national ROI must include these considerations. Key feeder industries such as steel or electronic components and mini computers also exhibit these crucial linkages. This is the phenomenon well described in the February 1982 report of this Committee as catalyst industries.

A final area where public and private ROIs might differ is in decisions about how to achieve cost cuts in production. For a private investor, reducing wages by locating in a low wage country may be an easier way to cut costs than investing in new product design or new processes to improve productivity. In many cases, the public ROI might dictate the opposite choice.

Slow Market Mechanisms

In cases just described, the public and private ROIs might differ meaning that market mechanisms alone are not sufficient to ensure an optimum pattern of investment from a national point of view. In other cases, markets will adjust but will do so slowly and competitive advantage can be lost in the process. Competitive advantage in a business is almost always a leading position in a race. A company which aggressively commits resources to build market share by pushing product and process innovations, establishing strong distribution networks or pricing aggressively may be able to establish significant leadership positions which can become unassailable. The private marketplace in the U.S. will most

often adjust to make appropriate decisions on new investments but sometimes not fast enough. This may put U.S. companies at a competitive disadvantage when compared to foreign rivals whose governments and banking systems are geared to assist more aggressive behavior.

Many managers in large established companies are reluctant to take too high a risk profile in their investments. Gradual changes in technology or capital stock are usually safer. Yet, in many cases, it requires innovative approaches and significant risk taking to gain long term competitive advantage in new business areas - to pioneer approaches which radically rethink the way in which a business is conducted.

Medium and small sized firms which can sometimes be more flexible and take these risks, often find it difficult to acquire the capital required to make these moves fast enough. Venture capital exists, but it often does not come quickly enough and often is not of sufficient quantity for the long period of investment and negative cash flow required to pioneer and bring a new product to successful maturity. Venture capitalists in this country often require too quick a payback and in many cases do not have the resources to continue to fund true successes as they grow. We have many successful small new technology company startups but only a small number of long term success stories - and many of these are significantly aided by DOD or NASA purchases and R & D funds.

The development of appropriate skills in the labor force also often occurs too slowly for market opportunities to be realized. We often find ourselves in the position of having significant unemployment and yet shortages of necessary skilled workers in certain industries. As the February report of this Committee points out, often small and medium sized companies, in particular, lack the resources to conduct such training.

A final reason why market mechanisms often move too slowly is because the pace of technology and the scale of optimum investment have increased dramatically in many industries. Companies have found in many industries that new technology generations are more expensive to enter and have a shorter half life during which the investment must be recouped, than has been the case in the past. Also, the size of plant required to achieve optimum costs has also increased rapidly, making new capital investments large when compared to existing assets and current market shares. This increases risk absolutely and also relative to current company resources and has slowed the investment process in many industries.

Problems of Structural Adjustment

Besides these market imperfections, there also exist social problems which must be addressed as economic progress is pursued. Industrial restructuring is a natural part of a healthy economy. New products are discovered and others become outmoded; productivity improvements reduce employment in some factories and increase employment in others; some industries migrate to low wage countries while technological breakthroughs create new industries in high wage countries; some skills become obsolete and new ones are needed.

Many of the competitive declines we have suffered in industries such as automobiles and steel which have led to serious social dislocations can and should be remedied by aggressive investments. However, in these and other industries, some adjustments by workers and regions will be necessary, simply as a natural result of the progress of the economy.

Though current events may suggest otherwise, we have in this country said that we will not tolerate the human degradation associated with massive unemployment in depressions nor the spectre of malnutrition and illiteracy associated with generations of inherited poverty.

Similarly, we have found it unacceptable to allow workers and regions, who through no fault of their own, are forced to shoulder a disproportionate share of the burden of industrial restructuring to go unaided. Unfortunately, while we have had some small regional assistance and worker retraining programs to alleviate this social cost, these have been paltry. Our major means of easing this burden has been to resort to protectionist measures which prevent industrial restructuring and retard our economic progress. The cruel hoax associated with such measures is that often they not only retard economic progress, but in the long run they do not prevent the loss of jobs and the decline of regions -- they merely prolong the process.

Allowing the marketplace to simply wipe out peoples' jobs and bankrupt regions is not appropriate in a civilized society. Costly protectionist measures are not economically healthy either. For these reasons, a more active government role to ease these social dislocations while promoting economic progress is essential to increasing our living standards long term.

THE NEED FOR NEW POLICIES

These market imperfections and the social costs inherent in industrial restructuring create the need for new policies which leave intact our market economy, but

superimpose a set of government and industry actions to address these imperfections and social problems. These policies must address the pattern of our industrial investment as well as more efficiently addressing the level of productive investment. Such policies will be both more efficient in using resources and more effective in gaining results than current "supply side" policies.

Our more successful trading partners in Japan, Germany and France are engaged in a series of joint industry-government projects to overcome these market imperfections. Targeted programs to ensure sufficient funds for industry-initiated research and development, high risk large scale projects, and major process innovations are underway. These countries are also committed to joint management-government-union industrial policies to ease necessary industrial dislocations through active labor retraining programs and through regional policies which provide substantial incentives for industry to assist workers and communities.

These nations have all created specific bodies whose aim is to spur industrial development. They have created tax incentives for savings and investment which combine with banking relationships which ensure the productive industrial use of those funds. They have realized that such positive industrial policies are a far less wasteful and surer means of stimulating long term productive growth than macroeconomic "trickle down" approaches. The lesson they have learned is similar to one we should have learned from our social and military ventures of the late 1960's -- desired goals cannot be reached simply by indiscriminately increasing the funds available.

Our corporate and government consulting assignments during the past few years have deeply immersed us in the international competitive development of a number of important industries including parts of the machine tool, consumer electronics, automotive, specialty chemical, electronic component and mechanical component industries.

The concern I have for the U.S. economy comes from seeing the concurrent conservative investment strategies of the U.S. companies in these industries and the aggressive positions of key European and Japanese competitors. My concern is heightened by the role being taken by foreign governments to assist their companies versus the benign U.S. government role and the negative effects of current recessionary policies on the U.S. competitors. The particular industries in which we have worked may not be representative, but with only one exception, they paint a picture which does not augur well for future U.S. industrial development.

Foreign industrial policies have not always been successful, but to point to British "lemon socialism" or the French Concorde or "Plan Calcul" and use these failures to discount foreign experiences is naive and dangerous. Foreign companies and governments have learned from their mistakes and have become more sophisticated in the conduct of their industrial policies. They will undoubtedly continue to make some mistakes, but will also have many successes.

If market imperfections and social dislocations provide the theoretical justifications for industrial development policies, the aggressive actions of our major competitors create the pragmatic imperative to move ahead forthrightly.

THE ALTERNATIVE TO CURRENT ECONOMIC POLICIES

Before describing the substance and the form that new policies could take, it is necessary to make a number of statements about what such policies should not be:

- The U.S. should not set up economic policies whereby politicians or a bureaucratic elite will sit in Washington and pick winning industrial sectors to support with federal funds.
- Public money should not be used to bail out dying companies nor even to assist companies near bankruptcy unless specific circumstances dictate that this is in the national interest and specific steps are undertaken to make such government participation shortlived.
- The U.S. should not engage in comprehensive economic planning such as that which characterizes the centrally planned economies nor even the thoroughgoing indicative planning tried in earlier periods in some western countries.
- The U.S. economy should not be seen as a U.S. Inc. nor should an investment committee be set up which acts like the finance committee of a major corporation at the national level. Markets should dictate investment initiatives not the government.

The role of government should not be to select specific industrial sectors for investment, but rather to take the public point of view in assuring that incentives are given to certain general categories of investment, such as those in:

- traded manufacturing industries
- basic and applied R & D
- high risk projects

- skill development
- application and diffusion of new technologies
- new capital goods technology
- maintaining competitiveness in key linkage industries
- overseas market development
- necessary infrastructure for human capital development, i.e. training and education
- maintenance of physical infrastructure, i.e., ports, rail, water and sewage systems, etc.

The government should also play a role to assure that social dislocations are minimized as a result of industrial restructuring through programs to provide meaningful incentives for companies to:

- locate in regions hard hit by unemployment
- engage in active worker retraining programs
- provide greater employment security in trade for more flexible work rules.

The following represent only an outline of the types of policies which could be part of such a program:

1. The establishment of a grant fund for enhanced applied research and development. The fund would call upon experts from industry and academia to assist specific projects devised by companies for research and development ventures with commercial potential. Ideas for projects would come from industry, and companies would be expected to put up at least 50% of the funding. After a certain lead time, results would be made public to other U.S. manufacturers: joint projects among companies, universities, and research institutes would be encouraged.

   Other countries, (Germany, Japan, France) are moving ahead of the U.S. in commercial research and development. U.S. projects are heavily weighted to defense applications. These projects have some spillover to commercial markets, but they are often too specialized.

2. The establishment of a conditionally reimbursable loan fund to support high risk investment projects. These projects would be those whose payback is beyond three to five years and whose character is such as to alter the fundamental product or process technology in a business. To ensure an appropriate allocation of risk, the fund would make loans equal to or less than company equity participation in the

venture. These loans would be repayable according to a schedule based on the commercial success of the project. If the project fails, the loan is not repaid; if the project succeeds, then repayment would be made at market interest rates or with an equity rate of return.

One fundamental problem with U.S. industry is a fear of making investments with long time horizons. This type of fund has performed well in France and Sweden to encourage investments with longer time horizons.

3. The establishment of a board for small and medium-sized manufacturing industries which will assist them to expand their domestic production and distribution systems and to explore international markets for their products. This board would administer regional offices to assist small and medium sized firms through education, assistance with making contacts, consulting, and financing (low interest loans or loan guarantees) for projects.

   Too few small and medium sized U.S. manufacturing firms have or can attract the financial resources which are necessary to expand both domestically and abroad. A number of other countries, such as Germany and France, have programs to provide such assistance. The Small Business Administration does not have the competence nor the focus to fulfill these needs adequately. Most of its activities involve distribution companies, or nontraded manufacturing operations, rather than engineering or manufacturing firms in traded businesses.

4. Establishment of an overseas marketing board to assist U.S. companies to establish distribution abroad by issuance of insurance and loan guarantees at reasonable rates. This board would replace DISC and other export subsidy measures. Germany, France, United Kingdom, and Japan already have similar organizations to coordinate export policy. Such a board could be particularly useful in developing countries.

5. A low interest financing program to encourage companies to buy new capital goods prototypes from U.S. producers. This mechanism would encourage

U.S. industry to modernize while at the same time assisting U.S. capital goods companies by providing initial markets for newly developed products. The Japanese have successfully used these types of measures. Such measures would be particularly important since so much of our remaining competitive strength is in electrical, electronic and mechanical capital goods areas and it is precisely these areas which will be under most severe international competitive pressure in the coming years.

6. The establishment of an advisory board on industrial policy to consider from the point of view of the public R.O.I. the competitive evolution of the U.S. industrial base. This board could perform functions such as the following:

   . To monitor the international development of industries with extensive linkages in the economy and to provide external commentary for Congress and the executive branch on problems and opportunities in these industries. Almost all other governments are monitoring industries such as steel, automobiles, computers, semi-conductors and telecommunications and it would be wise for us to do so as well. We now do it on an ad hoc basis through reports done by various government agencies. The existence of this monitoring would not imply active interventions, only healthy dialogue with the industries.

   . To monitor developments in the international economy which might lead to future competitive difficulty for sections of industry. Such efforts at anticipating long term industrial evolution do not necessarily provide accurate predictions but rather force government and industry to think long term and strategically about their own development within the international economy. The Japanese long term vision and the French plan serve this goal well. This activity could also help anticipate future industrial trouble spots by monitoring industrial developments in low wage countries.

   . To identify and analyze the effects of the current multitude of programs now existing within the government to protect, subsidize or in some way selectively assist industry - from defense programs to selective tax expenditures in agriculture, housing and industry.

7. A depressed regions investment board to offer capital grants and training grants for companies to locate in areas which have unemployment levels greater than some percentage over the national average. Every other industrialized country has such a program of comprehensive regional development. Simple tax incentives, as proposed by the current administration, will not be sufficient to do the job.

8. A comprehensive federal plan to assist workers who face losing their jobs due to necessary industrial restructuring. This labor market policy could include some of the following features:

   - Financial compensation to affected employees funded by contributions from both companies and government for a set period of time.
   - A legal requirement for notice (at least 3 to 6 months) before plant closures can occur.
   - Specific retraining programs or voucher programs to encourage firms to train people laid off due to plant closures.
   - Tax incentives for companies to remain in existing communities.
   - The legal right of workers to be paid when companies go bankrupt.
   - Provision for federal unemployment payments to be made through companies so that individuals may remain at work or in training courses in cases of economic downturns.

   All other industrialized countries have measures such as these to varying degrees. Even in Great Britain, displaced workers are often given "golden hand shakes" of one or in some cases two years full pay by the company when laid off permanently.

In addition to these recommendations, I would like to endorse in concept the recommendations made by the Democratic members of this Committee in the February 1982 Report, - Number 6 on credit conservation, Number 7 on interest rates, Number 18 on basic industries, Number 19 on catalysts, Number 20 on infrastructure, Number 21 on housing, Number 22 on science and technology, Number 23 on labor and Number 24 on skilled labor. Though I would differ in some specific ways from some of the proposals, I believe that they point in the right direction and are necessary steps toward the creation of an industrial development policy in the U.S.

THE CHARACTERISTICS OF THIS EFFORT

At first glance, it appears that such efforts will establish at great expense to the public, a bureaucratic maze of boards, agencies and banks which will wreak havoc on the economy by doling out billions of dollars of federal funds. In fact, such an approach would be more cost effective than current policies. Indiscriminate tax expenditures which total over $400 billion over the coming years could be replaced by more targeted expenditures. This would most certainly result in better results for a far smaller federal expenditure. In addition, if the following principles are followed, the spawning of a new large bureaucracy can be avoided.

Decentralization

One of the appropriate allegations often leveled against advocates of industrial policy is that they envision a centralized elite doling out investment funds. Creating one central board or bank to preside over industrial redevelopment runs this risk. Maintaining a few distinct agencies will allow a series of actors to be responsive to requests from industries for assistance.

Few Permanent Staff

The most effective industrial policy agencies around the world are those with small permanent staffs, using experts from industry, universities, business professions, unions and the financial community on boards to evaluate projects and allocate resources.

Investment Initiatives Must be From Industry

Initiatives for investment projects and the great majority of investment funds for a project must come from industries themselves. Government agencies do not and should not have the expertise in a country where private companies are as strong as ours to be initiating investment ideas. The government role should be responsive as to the substance of an investment but proactive as to the character of the investment. Government agencies can play a formative role in the substance of an investment in cases where the government is the prime purchaser such as in infrastructure development.

Incentives Must be Flexibly Tailored to a Specific Businesses

The competitiveness of different businesses depends on different elements in their cost structures. While manufacturing is the key for some businesses, in others it may be

applications engineering or marketing and distribution. Industrial policies that are designed to encourage businesses to become strong international competitors should target key areas of cost leverage precisely.

For example, in businesses for which applications engineering is critical, tax benefits for capital investment or grants for R & D assistance are likely to be irrelevant. Policies to assist in the bidding process for particular orders, or in preintroduction marketing and software development would be far more useful. Similarly, in businesses for which large distribution scale on a country-by-country basis is critical, export financing, R & D assistance, or capital investment incentives are only marginally useful. Selectively targeted measures to assist overseas distribution investments would be more important.

Blanket assertions - that the U.S. government should provide more funding for R & D or better incentives for capital investment or more export financing - miss the crucial point: key competitive levers differ from business to business. To be efficient, policy mechanisms must be carefully tailored to the particular needs of each type of business. Only in this way can federal assistance be used in a highly leveraged way. This means that agencies must have a range of flexible tools at their disposal to use as incentives.

THE INTERNATIONAL RAMIFICATIONS

Critics of industrial development policies often point to the presumed threat that these policies pose to international economic cooperation. What will happen if every nation is selectively assisting its companies to compete internationally?

To address this question, it is necessary to return to the fundamental goals of economic development stated earlier. If government policies (whether macroeconomic or targeted) boost investment for product and process innovation, assist the industrial development of developing countries, or increase productivity, they are in the interest of world economic development.

If policies, whether macroeconomic (currency devaluations or artificially high interest rates), or targeted (export subsidies, quotas and voluntary restraint agreements or operating subsidies for uncompetitive products), are simply allowing uncompetitive products to be sold because of protection or subsidy, then they do no one any good in the long run.

Currently, both sorts of measures exist in all countries,

the U.S. included, and the international economic order is threatened by massive unemployment and declining real incomes.

International conventions which can agree to allow the first type of policy, whether macroeconomic or targeted, and disallow the second, would be as easy to accommodate as the current situation, and would be more in the interest of world economic prosperity.

The real danger to international economic cooperation will occur if current restrictive economic policies continue to increase world unemployment and previous international trade conventions which do not fit today's reality continue and are continually violated as is now the case.

THE RISKS ASSOCIATED WITH INDUSTRIAL POLICY

It would be naive to think that enacting the kinds of policies I am suggesting does not create risks.

- Whenever government funds are to be handed out, corruption or political favoritism can occur.
- Some funds will be wasted and misused due to lack of ability of appointed officials.
- Political pressure groups may force funds to be directed to "lemon socialism" type projects or to serve their own special interests.

While these risks are real, I believe that policies and processes can be progressively refined to minimize them.

THE RISKS ASSOCIATED WITH NOT CONDUCTING AN INDUSTRIAL POLICY

Far more serious are the risks of not instituting these development policies. The buoyant U.S. economy of the 1950's and 1960's was founded in a benign international competitive environment. While the U.S. was pioneering new industries - plastics and fibers, semi-conductors and computers, electronic instruments, jet aircraft and industrial machinery- other industrialized countries were recovering from the devastation of war and rebuilding their basic industries and infrastructures. Thus the U.S. had the benefit of a relatively non-competitive international market place. A large home market stimulated the growth of autos and the construction businesses and capital goods industries that serve them. Further, many U.S. industries in their early stages received a significant boost through national defense programs.

The international industrial arena of the 1980's and 1990's will be very different from that of the 1950's and 1960's. The U.S. will be confronted with a highly competitive international environment that will threaten many existing businesses and make it far more difficult to develop successful new ones.

An increasing number of businesses that comprised our traditional U.S. industrial base, such as steel, fibers, shoes, clothing, metal parts, ships, and small appliances, will be subject to low-wage competition. Korea, Brazil, Singapore, and other rapidly developing countries will increase the sophistication of their production. Other developing countries with lower wages - such as the Philippines, Malaysia, and Sri Lanka - will move into industries in which these more developed low-wage economies are now dominant.

Meanwhile, in certain high-growth industries where the U.S. currently has a leading position - such as computers, semi-conductors, aircraft, industrial machinery, pharmaceuticals, scientific instruments, and offshore technology - foreign companies, assisted by their governments, are actively seeking to close the gap and move ahead. While the strongest U.S. companies in these industries appear unassailable, one must remember how impregnable General Motors and U.S. Steel seemed 10 or 15 years ago.

The past examples of the U.S. decline in steel and televisions are being replicated in other industries today. In 1976, the U.S. had a positive trade balance of $200 million in machine tools, long a leading American industry. By 1979, the U.S. was importing $400 million more in machine tools than it exported. Perhaps even more ominous for the future, the U.S. position in high-technology numerically controlled machine tools has deteriorated substantially. For example, between 1976 and 1980, Japanese production of numerically controlled lathes increased by 350 percent and German production increased by 310 percent. French production meanwhile increased by 340 percent and British production increased by 300 percent. U.S. production increased by only 160 percent. In 1980, Japanese producers captured 53 percent of the U.S. market in numerically controlled lathes, up from less than 10 percent only five years ago. As in consumer electronics, the Japanese are using product and process technology at both the component and final product levels to achieve cost and quality advantages vis-a-vis U.S. producers.

The industrialized trading partners of the U.S. also are seeking to attain competitive leadership in other future growth industries. Foreign companies and their governments

are undertaking programs to encourage new development in lasers, biotechnology, composite materials, robotics, flexible machinery and various microelectronic applications areas.

Today's U.S. civilian trade balance in manufactured goods is based on industrial machinery, aircraft, computers and peripherals, electronic instruments and speciality chemicals. In all of these industries, foreign companies are making significant advances through aggressive investments.

No set of macroeconomic policies will reverse this trend. Industrial policies will be difficult to implement and will embody many problems and risks, but the risk of not instituting such policies, those of continued economic stagnation and decline, are even greater.

Representative REUSS. Thank you, Mr. Magaziner.

Mr. Bluestone, I thank you for getting your prepared statement in on time. That gave me a chance to go over it. Since obviously you can't fully present a 58-page statement in the summary time, if it's possible I would appreciate your giving us a summary of what your MRPIS model shows on the actual economic program of this country which is the Reagan program as adopted in its nonmilitary spending, its military spending, and its tax changes. Tell us who wins and who loses both industrially and regionally. Construction, health and education, and agricultural products, whatever they are, lose, and the military wins, but it's a little more complex than that. It would be enormously helpful if you could perhaps give us a tour of the horizon.

STATEMENT OF BARRY BLUESTONE, PROFESSOR OF ECONOMICS AND DIRECTOR, SOCIAL WELFARE RESEARCH INSTITUTE, BOSTON COLLEGE

Mr. BLUESTONE. I'll try and do that, Mr. Chairman.

In the past 4 or 5 years I've been involved in doing a number of industry case studies because I felt, like you have, that it's necessary for us to understand the dynamics of individual industries if we're to develop an industrial policy and an economic policy which will be fruitful for this country. I've also been involved, very much like the studies that Mr. Magaziner has done, in studying the deindustrialization of America. In a book that will be coming out this fall my colleague, Bennett Harris at MIT, and I have tried to look at what has gone wrong with the American economy in the last decade and we come to many of the same conclusions that other people on this panel have.

What I'd like to talk about today, though, is the development that our institute, the Social Welfare Research Institute, over the past year and a half, in the development of a brand new model of the economy, called the multiregional policy impact simulation model.

Its intent when first developed by the Assistant Secretary for Planning and Evaluation at the Department of Health and Human Services was to develop a comprehensive model of the economy which could look at both private sector policy and public sector policy and see how they are related to each other and which could give us a comprehensive analysis of social well-being based on the tax transfer and expenditure policies of the Federal Government.

One of the things, however, that I find so fascinating about this, and it's been alluded to by other members of this panel, is the lack of information we have about the billions and billions of dollars that we spend in terms of how it affects individual industries, how it affects individual regions, and how it affects individual demographic groups.

If you look at the 1972 input-output model of the United States prepared by the Bureau of Economic Analysis, you will find, for instance, that out of 79 industries or 77 key private sectors, 3 of them receive 43 percent of the total amount of military procurement by the Department of Defense—the aircraft industry, the radio, TV and communications equipment industry, and the ordnance and accessories industry; 64 percent of the output of the ordnance industry, of

course, is procured through the DOD, 45 percent of the aircraft industry's output, 25 percent of the radio and communications sector.

In contrast, 52 of the 77 non-Government sectors in the 1972 input-output model received no more than 1 percent of their total output purchased by the DOD. Of course, what that means is that when you twist the economy toward increases in defense spending you're going to have major impacts throughout the economy, region by region, congressional district by congressional district, demographic group by demographic group.

What I find most interesting is that last week when I checked on who studies these things I located a Director for Long-Run Planning in the Department of Defense and when we contacted the Department of Defense we found out that that agency, out of a defense budget of something like $215 billion, has a grand total of $300,000 to spend on analyzing the impact of the DOD procurement on the economy and on specific industries like titanium and skill shortages, and so forth. That amounts to, by the way, fourteen-one hundredths of 1 percent of the defense budget.

The question is, can't we do a better job of studying both the direct impact as well as the indirect impacts of our present government policy as well as future government and industrial policy on individual industries and individual regions and individual demographic groups?

The MRPIS model brings together in one comprehensive computer based model four sectors of the economy: The household sector, which is modeled as a large micro simulation effort; a consumption sector; what different people in the economy and different families in the economy consume; a business sector, which is made up of a very large-scale, multiregional, input-output model with at present 79 industries across all 51 regions—the 50 States and the District of Columbia—and finally, and most unique of all, a labor market which is capable of allocating changes in output to actual individual groups within the economy.

So when we expand defense spending, who gets the jobs? When we cut back on medical spending, who loses them and how does it affect their lives?

In order to try and use the model in its present prototypical form, our very first analysis done, with the assistance of the Assistant Secretary for Planning and Evaluation, was to analyze the impact of the 1982 budget on the income distribution as well as the regional industrial distribution of the whole economy. What we did in effect was to look at changes in the 1982 budget with regard to the levels in 1981. More specifically, we looked at a 35-percent increase in military procurement, a 10-percent decrease in AFDC, a 12-percent cut in the food stamp program, and then so that we would have an ex-anti-balanced budget—we're not changing the total number of dollars in the economy provided by the Government; we're just changing its allocation as an industrial policy would—we cut other nonmilitary procurement by $3.9 billion. This is all in 1975 dollars so as to give us no change in the overall initial impact of Federal Government spending.

In a second simulation we took the same change in the budget and added to it the tax cut which we will see in July, a 10-percent personal

tax cut with a cap of 50 percent in marginal tax rates and we studied both of those.

Let me briefly give you an idea of what the results look like. First of all, if we were just to look at that budget shift, just shifting dollars out of one set of sectors into another set of sectors of the economy, you could ask how does this effect the social well-being of families which are headed by white males——

Representative REUSS. Mr. Bluestone, if you put all these bricks in place, I'm really afraid, to do it justice, it will take a long time. Could you put it all together, the military, the nonmilitary and the tax changes—the Reagan program—and tell us what you get altogether? I have trouble, you see, following the bricklaying.

Mr. BLUESTONE. Yes. Well, if we just look at the budget shift, we'd see, for instance, after all of that goes on, families headed by white males are unaffected. There is a one-half of 1-percent cut in the disposable incomes of families headed by white women and a 3-percent cut in the disposable incomes of families headed by black women. Not only do they have cuts in their AFDC and food stamps, it turns out the shift in budget authority removes jobs from those sectors where black women often find jobs and increases in jobs in other sectors.

To give you an example, in the medical and education sector, we will lose an equivalent of about 24,000 full-time jobs, which is in 1975. In agricultural products, almost 11,000 jobs; in wholesale-retail trade, another 11,000 jobs; in maintenance and repair construction, 7,000 jobs.

On the other hand, there are several industries that will gain. Aircraft, of course, will be the largest gainer with almost 38,000 new jobs created, which suggests, by the way, that we may run into some significant bottlenecks which other economists have suggested and we need to worry about that. In my work in the aircraft industry, we know that even in the depressed aircraft industry of today right now with layoffs both in Washington, California, and in Connecticut, we have a skill shortage among blue-collar machinists. And other industries, like ordnance electronics are large gainers. We have large gains of craftsmen and operatives, 30,000 jobs there, but we have losses when it comes to sales, services, and clerical workers. We have losses when it comes to laborers and household workers.

Regionally we have the same problem. The east coast and the west coast do very well under this program because of their heavy defense work.

When we look at the entire Reagan program and we add in the tax cut on top of the budget shift, we find first of all that the program is no doubt highly expansionary. A large tax cut like this is going to increase the total amount of disposable income in the private sector. We're talking about in 1975 dollars $16.5 billion worth of additional disposable income according to our model.

Whats' interesting, however, is the distribution again. Who gets the jobs according to our model; how does that final distribution of income get distributed?

It turns out that when we divide the economy into seven income groups, in 1975 dollars with the largest being $15,000 and above, the group with $15,000 and above represents about 36 percent of all house-

holds in the country. In terms of the total Reagan program, they get 82 percent of the change in disposable income.

On the other hand, if we look at families who in 1975 would have had $6,250 or less in their initial disposable income, they represent 27 percent of the population and on average all of them actually have losses after that program is put in place.

What does that mean, on average, per family? The program in its entirety, on average, will increase the disposable income of families of $15,000 or more by almost $500. Our estimate is about $492 in 1975 dollars. However, for all of those 27 percent or on average the groups in the lowest 27 percent of the population, they're going to lose $37, $45, $50 per family on average. Of course, even within that group—our model shows the distribution is highly unequal: some families are facing long-term unemployment and experiencing much greater losses.

The result of the entire program is that, looking at disposable income and at the de facto industrial policy implicit in the budget, when it all comes down to the final bottom line as they say, families headed by white men, on average, gain about 2.1 percent in terms of disposable income; families headed by black women lose about 1.8 percent of disposable income.

One would hope that if we were to move toward an industrial policy we would develop one which not only took a look at individual industries and individual regions, but in the final analysis would be concerned about the social well-being of individuals in every part of the country in the various occupations in the various industries that make up our broad economy.

My overriding hope would be that instead of spending fourteen-one hundredths of 1 percent on analyzing the impact of a $215 billion defense budget, we would see fit in this country to spend more money and more effort on getting the information and analysis that would make the de facto industrial policy more transparent. Then we could study it and decide whether this is really what Congress wants to do, and when we move toward an industrial policy and an explicit one which tries to maximize social well-being in our society, we have the analytic capability, we have the information to make sound decisions.

Unfortunately, I think we're going in the opposite direction. Thank you very much.

[The prepared statement of Mr. Bluestone follows:]

Prepared Statement of Barry Bluestone

I appreciate the opportunity during these hearings on industrial policy to present to the committee the first preliminary statistical results from the large-scale Multi-Regional Policy Impact Simulation (MRPIS) model developed at the Social Welfare Research Institute at Boston College. The MRPIS model, initially funded by a grant from the Assistant Secretary for Planning and Evaluation of the U.S. Department of Health and Human Services, is designed to enable policy-makers to simulate the economic impact of a wide range of existing and proposed tax, transfer, and expenditure programs. As such, the MRPIS model -- when more fully developed -- can be used as a strategic tool in the analysis of industrial policy. Because of its rich industrial, occupational, and regional detail, the model has the capability of demonstrating how particular industries and regions are affected by public policy. In so doing, the model provides information on potential sources of structural unemployment and inflation. By directly incorporating a labor market component in the overall model, the MRPIS system can also be used to estimate how tax, transfer, and expenditure policies affect the employment and earnings of individual

demographic groups in society.

America's Implicit Industrial Policy

In contemplating the need for a national industrial policy, it is important to recognize that in a very real sense we already have one. The problem is that we do not recognize it as such. Industrial policy implies a set of government programs that have economic and social consequences that vary substantially among sectors (or regions) of the economy. Specific tariffs that apply to a single commodity or industry are clear-cut examples of industrial policy. Presumably no one would deny this. What is overlooked, however, is that merely through its procurement, tax, transfer, and regulatory functions, the federal government is intimately involved in industrial policy on an ongoing basis. Unfortunately, no one at this juncture in history knows the boundaries of existing policy, either in terms of the cumulative impact of existing practices, or in terms of how that array of economic policies actually affect the distribution of income or the future growth, structure, and competitiveness of each industrial sector. As a result, our "de facto" industrial policy is often confused, uncoordinated, and its components frequently work at cross purposes. At best, we have only an imperfect knowledge of the direct impact of government policy, and we have almost no knowledge at all of the indirect impacts as a policy ripples through the economy. That we are frequently alarmed by the unforeseen consequences of particular government programs should indeed come as no surprise at all.

Examples of "de facto" industrial policy can be found in virtually every major sphere of government activity. Aggregate monetary policy is a case in point. The Federal Reserve's tight money policy may have contributed to the recent dramatic reduction in the inflation rate, but the "victory" here has clearly come at the expense of two key sectors of the economy: construction and automobile manufacture. No other major sector of the economy has been as devastated by this "general" policy as these two.

Defense procurement provides another clear case of "de facto" industrial policy. According to the Input-Output Table of the U.S. economy for 1972, three industries (aircraft; radio, TV, and communication equipment; and ordnance and accessories) received 43 percent of the total value of military procurement from the private sector. The Department of Defense purchased 64 percent of the output of the ordnance industry, 45 percent of the final output of the aircraft industry, and more than 25 percent of that supplied by the radio and communications sector. In contrast, 52 of the 77 non-government sectors in the Input-Output model had no more than one percent of their total output purchased by the DOD.[1]

The proposed DOD budget for 1981 through 1985 shows just how important this industrial policy via procurement can be. In testimony prepared for this committee, former chairman of the Council of Economic Advisers, Charles L. Schultze, admits to having come to "the rather startling conclusion that some 30 percent of the increase in the 'goods-producing' GNP over the next four years will go to the military."[2] He concludes that the proposed 80 percent increase in

the real volume of military procurement and R&D in such a short period of time will give rise to shortages of skilled labor and specialized components within the defense industries themselves.[3] One could easily conclude that this is industrial policy with a vengeance.

By their very nature, federal regulations, designed to safeguard the public interest, comprise a major component of the government's "de facto" industrial policy. Clean air and clean water policies, although designed to be even-handed across industries, have in actuality quite different impacts across industries. During the late 1970s, it was not uncommon for industries such as steel, paper, chemicals, and electric utilities to spend 15 to 20 percent of new investment outlays on pollution abatement equipment. In contrast, the "clean" manufacturing industries such as nonelectrical machinery often spent less than 2 percent of their capital outlays on such devices, permitting them to allocate more investment for outputs that are directly valued in the market. Obviously auto safety regulations, food and drug laws, and the myriad array of rules pertaining to virtually every industry from agriculture to banking are part and parcel of an industrial policy in that they are geared to specific sectors.

But "general" tax laws are not that different from "general" EPA regulations. Specific IRS privileges in the form of resource depletion allowances, "All-Savers" certificates, or — for that matter -- child care and mortgage deductions aid particular industries and have virtually no impact on others. Yet this is also true of major portions of the supposedly neutral federal tax code. The recently

enacted Accelerated Cost Recovery System (ACRS) and the safe-harbor leasing provision are two excellent examples. ACRS was passed presumably to spur investment in all industries. But the 15-10-5-3 provisions are so skewed toward industries that invest in short-lived equipment, that the new law actually provides tax subsidies to some industries while providing much less new "incentive" to others. The results of a recent Department of Treasury study, reported in Fortune magazine, show the uneven treatment of industries under the new law.

Effective Rates on New Depreciable Assets

	New Law	vs. Old Law
Services and Trade	37.1%	53.2%
Utilities	30.6	43.2
Food	20.8	44.1
Machinery	18.6	38.2
Agriculture	16.6	32.7
Communications	14.1	39.8
Chemicals	8.6	28.8
Primary Metals	7.5	34.0
Oil Refining	1.1	35.0
Pulp and Paper	.9	28.5
Transportation	-2.9	31.0
Mining	-3.4	28.4
Motor Vehicles	-11.3	25.8

Source: "The Battle over Taxes," Fortune, April 19, 1982, p. 61.

Likewise, the safe-harbor leasing provision is almost a life-and-death issue for some particular firms, let alone individual industries. Eastern Airlines, for example, stands to lose $273 million in leasing benefits and Bethlehem Steel $250 million if the leasing privilege is rescinded.[4] Boeing Aircraft's loss in aircraft sales could reach into the billions if the safe-harbor law is changed.

Without further belaboring the matter, it should be abundantly clear that any substantial change in tax, transfer, expenditure, or regulatory law affects some industries much more than others. Hence, inherent in any fiscal or monetary policy is a partially hidden, but nonetheless real, "de facto" industrial policy. One would suspect that as a very first step in developing a set of explicit industrial policies for the nation, simply evaluating current policy is a sensible approach. An analysis of this type would be useful in demonstrating the social consequences of government activity. It would indicate the impact of industrial policy on the distribution of employment and disposable income -- and in so doing permit an evaluation of how policy affects social well-being as well as the functioning of the marketplace.

Estimating the Impact of "De Facto" Industrial Policy

Measuring the overall effect of government policy requires a model of the economy that incorporates household and business sector behavior and contains elements of both a product (commodities) market and a labor market. Moreover, these components must be linked in such a way as to provide a measure of the indirect (or multiplier) effects of a tax, transfer, or expenditure policy as well as the immediate direct effect. Obviously, in an economy with an income multiplier of something like 2.0, the direct effects of policy are responsible for only about "half the action."

Taking advantage of large scale household micro data sets, a highly disaggregated multiregional input-output model, and a

substantial amount of relatively inexpensive computer capacity, the MRPIS model was proposed and then developed expressly to serve this purpose. At this point, a working prototype of a MRPIS system (the Level 1 model) is available primarily to demonstrate the usefulness of this method of policy analysis. To put it through its paces, we chose -- in consultation with the model's funding agency — to simulate the key changes in the 1982 federal budget and the personal income tax cut scheduled for implementation in July of this year. The model was used to estimate the changes in:

- output by industry
- employment demand by industry
- employment demand by broad occupation group
- employment by state and region
- labor earnings by income class
- AFDC payments by income class
- Food Stamp bonus value by income class
- Unemployment benefits by income class
- federal income tax revenue by income class
- FICA tax revenue by income class
- state income tax revenue by income class
- family disposable income by income class, race, age, and sex of head, industry, occupation, and region

The Level 1 model contains nearly all of the components envisioned for the more advanced (Level 2) version. It includes a household sector capable of simulating the impact of a range of alternative tax and transfer programs on the distribution of family disposable income; a product market that translates changes in consumer or government demand into changes in industry-specific final demand; a business sector based on a highly disaggregated multiregional input-output model that translates changes in final demand into changes in industry- and region-specific output and labor

demand; and a labor market that translates changes in labor demand into hours of work which are then assigned to individuals in the household sector. It is therefore possible to iterate through the entire model so as to generate estimates of both the direct and indirect effects of a broad range of public policy alternatives.

One must be cautious, however, in interpreting the results from the Level 1 model because of the nature of the prototype. First, the data for key subroutines are presently out-of-date and therefore not necessarily representative of current economic conditions. (More up-to-date input-output data will be available in September 1982.) Second, the algorithms in a number of subroutines are quite rudimentary and require substantial improvement if they are to be accurate emulators of existing or proposed program rules and schedules. Further development of the model will be needed to produce "official" estimates for policy direction. Despite this strong caveat, we believe that even the MRPIS Level 1 model provides some important and fascinating insights into the "de facto" industrial policy consequences of the current federal budget.

A MRPIS Level 1 Simulation of the 1982 Federal Budget

The 1982 federal budget, the first one of the Reagan Administration's own making, marked a historic turning point in almost a half-century of unparalleled and unprecedented expansion in government-sponsored non-military procurement and transfer programs. Total non-defense outlays had risen from $76.8 billion in 1960 to more than $215 billion in 1980 (in constant 1972 dollars.) Over the same period, real dollar transfer payments had expanded at a much faster pace, quadrupling from $33 to almost $140 billion.[5]

Changes in the 1981 budget inherited from the previous administration were made to slow this expansion, but it was only with the first full-fledged Reagan budget that a serious in-road could be made in this trend. The impact of this budget on the actual performance of the economy — on GNP, employment, inflation, and on government revenues and transfer payments — and its effect on the various regions of the country will take some time to decipher. In the meantime, however, it is possible to indicate in advance through simulation techniques what some of these impacts may be, and in particular how the shift in budget priorities may affect the low income population and the government programs designed to assist this group. The policy impact study presented here is based on research using the Multi-Regional Policy Impact Simulation (MRPIS) model (Level 1) developed under the auspices of the Office of the Assistant Secretary for Planning and Evaluation of the U.S. Department of Health

and Human Services.

The simulations presented in this brief report attempt to examine some of the potential effects of (1) shifting budget priorities from non-military to military procurement (2) reducing the level of federal funding for the Aid to Families with Dependent Children (AFDC) and Food Stamp programs, and (3) cutting federal personal income tax rates in line with the Economic Recovery Act of 1981. These changes in policy represent three of the key initiatives of the new administration. The potential impact of changes in corporate income tax policy and industry deregulation have not been analyzed in these simulations.

A comparison of the 1981 and 1982 appropriations shows relatively little change in overall spending authority, but the end result of the budget process was to alter federal priorities substantially. A comparison of the 11 major appropriations bills for these two years shows that $25.4 billion in budget authority was cut from discretionary non-military domestic spending while military appropriations in the aggregate went up by $30.3 billion. Among the many budget items that were changed significantly, the AFDC appropriation was cut by 12 percent while the Food Stamp budget was reduced by 10 percent. On the expansion side, more than half of the increase in defense appropriations was earmarked for military procurement. This item went up by $16.8 billion or 35 percent.[6]

Such a dramatic shift in budget authority can ripple through the economy affecting employment, output, public revenues, and ultimately the costs to government of an entire range of transfer programs. A

dollar spent on military procurement, for example, need not generate the same employment as a dollar spent on AFDC or the purchase of medical services through the Public Health Service. As a result, the total level of earnings can change and with this the amount of taxes paid and public assistance required. To the extent that employment opportunity determines the degree of family economic self-sufficiency, what happens to government transfer programs depends on how changes in budget authority affect the labor market.

Analyzing the overall impact of government spending priorities (and tax policy) requires an investigation of both direct and indirect economic effects. An expansion in military procurement, for instance, will almost immediately boost the demand for skilled Class A aircraft machinists. The direct effect will show up as an increase in employment and earnings for this group of workers. If some of the added employment goes to workers previously unemployed, there is likely to be a reduction in unemployment benefits and perhaps food stamp expenditures. Moreover, once these aircraft machinists spend some of their additional earnings, new jobs are created throughout the economy. This serves to put other people to work in totally unrelated industries. Eventually, as this income circulates, tax revenues will rise and the demand for transfer payments can decline. Of course, offsetting direct and indirect effects can prevail when government purchases are reduced in another sector of the economy. But a dollar shifted from one sector to another need not (and usually will not) have the same set of direct and indirect employment and earnings effects. Therefore the impact on transfer programs is difficult to

ascertain. The purpose of the MRPIS model is to measure a wide range of these impacts.

Hypotheses about the Impact of Government Spending Policy

There is a long-standing debate over the influence of military spending on employment and job creation. A standard argument in the economics literature suggests that defense appropriations have historically played a critical role in stimulating aggregate demand and therefore are anti-recessionary. However, a number of critics have suggested that a dollar spent on the military does not generate as many jobs as the same dollar spent in the civilian sector. Because of the alleged capital-intensity of military hardware, the high salaries paid in the defense industries, and perhaps because more of the value-added in these industries is retained in the form of undistributed profits, defense spending has often been presented as an "inefficient" method of job creation (regardless of what it may contribute to national security). For example, one estimate suggests that an additional $1 billion spent in the civilian sector in the mid-1970s would have created some 75,000 jobs as compared with only 55,000 jobs if the same amount had been spent by the Department of Defense for military procurement.[7] As a result, every billion dollars shifted from the civilian to the military sector "costs" the U.S. economy about 20,000 jobs. If this were true, policy-makers would have cause for concern over the potential unemployment created by a shift toward defense spending, and would have to take this factor

into consideration when budgeting for such transfer programs as unemployment insurance, food stamps, and perhaps even AFDC and SSI.

Other analysts have disputed this contention on a number of grounds. One is that military spending, contrary to its appearance, is actually labor-intensive since much of the hardware produced is for all practical purposes designed by legions of scientists, engineers, and draftsmen and assembled by hand. The paper industry, for example, invests about $46,000 in capital per employee, while the transportation industry that manufactures tanks, jet aircraft, and naval vessels invests on average only about $27,000.[8] Hence a dollar spent on school textbooks very likely creates fewer jobs in the private sector than a dollar spent on an F-16 Air Force jet.

Similarly, if a civilian dollar goes to a high salaried hospital surgeon rather than to a lower wage semiconductor assembler, the initial spending creates fewer jobs (per wage dollar) to begin with and given the higher savings propensities of high income individuals, creates fewer jobs (per dollar) when earnings are translated into consumer demand. For these reasons, Princeton University's noted labor economist Alan Blinder has suggested that military spending is actually a highly productive way for the government to increase employment. According to Blinder, economic studies have shown that the GNP multiplier for defense and other kinds of direct government purchases is higher than for transfer payments or tax cuts. Since the expenditure cuts in the 1982 budget are concentrated in transfer payments, Blinder believes "defense purchases have a stronger multiplier."[9]

At one extreme then, the shift toward DOD spending and away from civilian programs may reduce the aggregate number of jobs in the economy creating a need for increased income and in-kind transfers. At the other, the emphasis on military procurement may reduce the demand for various forms of public assistance by creating more jobs in the private sector. Complicating the entire analysis is the fact that military spending creates different jobs than civilian procurement and generates them in different areas of the nation. Therefore aggregate employment can go up and yet certain segments of the workforce (e.g. those with low skills) may still suffer temporary joblessness and require public assistance either in the form of income maintenance or retraining.

Indeed in any complex economy, the final net effect of a change in budget priorities depends on much more than simply which sectors of the economy receive government purchase orders and which do not. Family consumption patterns, the supply links between industries, and the hiring priorities of employers ultimately work together to determine the eventual impact of any change in budget priorities on employment, earnings, government revenue, and transfer payments. For example, according to an analysis of the 1972-73 Consumer Expenditure Survey used in the MRPIS model, a low-income family (Disposable income < $2,500 in 1975) will spend 20 cents out of an additional dollar of income on food. A family with an income greater than $15,000 will spend only 12.4 cents on this commodity. On the other hand, the typical higher income family will spend a greater share of an extra income dollar on apparel, household furniture, financial services, and

entertainment.[10] Hence, who is affected by the indirect effects of a shift in budget priorities depends on which income groups benefit from the direct effect. Reductions in low-income family transfer programs will lead to disproportionate reductions in food demand which, in turn, reduce employment and earnings in the food processing industry. Alternatively, a policy that redistributes income from high income families to lower income families increases employment and earnings in the food industry, but reduces them in the apparel and household furniture sectors. The magnitude of these indirect impacts depends on the size of the income shift and on the distribution of marginal budget shares across family income categories.

Similarly, the aggregate impact of changing budget priorities on employment depends on the input-output linkages between industries. The sectors that supply the aircraft industry with components are clearly different from the industries that supply, say, the agricultural sector. As a result, increased demand for aircraft and reduced demand for food will alter employment opportunity in the supplier or "intermediate" industries as well as those with actual federal procurement contracts. Hence there may be a boost in employment in the electronics industry and a decline in labor demand in the fertilizer market.

Finally, the employment effect of federal budget priorities depends on the labor market behavior in those industries most directly affected by procurement. Who finds employment in the expanding sectors, and who faces potential cutbacks in other industries is determined by the particular labor supply and demand characteristics

of each sector.

Because of this wide array of interactions in the economy, there is no simple way to estimate a priori the overall impact of a substantial reordering of budget authority. The MRPIS model was designed to incorporate a large number of these interactions by linking in one model a household microsimulator, a multiregional input-output model, a product market, and finally a labor market to allocate jobs (hours of work) generated in the business sector to individuals in the household sector. Appendix I presents the basic assumptions of the MRPIS Level 1.0 simulator.

The MRPIS Simulations

To demonstrate the possible economic effects of a shift in priorities paralleling those incorporated in the 1982 federal budget, two MRPIS model simulations were generated. The first involves an increase in military procurement offset by reductions in the AFDC and Food Stamp programs and in non-defense procurement so as to leave the budget in ex ante balance. The second simulation analyzes the same change in budget priorities, but also includes a reduction in marginal income tax rates that makes the overall Administration effort expansionary.

Both simulations compare FY1982 budget authority with FY1981. But because the current version of the MRPIS simulator uses the 1976 Survey of Income and Education (SIE) as a data base and aging routines have yet to be constructed to project this data base into future

years, the simulations refer to the population as it existed in calender 1975. The proportional changes in the 1982 budget have therefore been projected back to the earlier year.

Simulation # 1

The changes in budget priorities for simulation # 1 are as follows:

Military Procurement	+ $5.6 billion
AFDC Transfer Payments	- $1.1 billion
Food Stamp Bonus Value	- $0.6 billion
Civilian Procurement	- $3.9 billion
Net Ex Ante Budget Change	$0.0 billion

The $5.6 billion increase in military procurement represents a 35 percent increase in procurement over the 1975 appropriation level. This is proportionally equivalent to the $16.8 billion increase found in the FY1982 budget. The $5.6 billion 1975 increase is apportioned over the 79 industries in the 1963 Multiregional Input-Output (MRIO) model incorporated in the MRPIS model. The aircraft industry receives nearly 22 percent of the new procurement orders, followed by radio, TV, radar and sonar (13.9%), ordnance (13.2%), new construction (10.7%), and other transportation equipment [including shipbuilding] (3.2%). Other industries receiving two percent or more of the total final demand are: maintenance and repair construction, chemicals,

petroleum, wholesale trade, business services, and medical and education services. The distribution for this simulation is based on the actual procurement pattern that existed at the time of the original MRIO data assembly and therefore may not represent 1982 DOD demand patterns. (Given sufficient data, the current procurement pattern -- or any other one -- could easily be substituted for that used here.)

A variant of the TRIM Model (Version 1.4) is used in MRPIS to simulate changes in tax and transfer programs. For the current simulation, parameters in the TRIM module PBLAST (which includes AFDC, SSI, and General Assistance) were set so as to generate an approximate 12 percent reduction in benefit payments in line with the FY1982 budget. In 1975 this would have amounted to a $1.1 billion expenditure cut. Since in the present version of TRIM it is not possible to replicate many of the precise AFDC program changes found in the Omnibus Budget Reconciliation Act of 1981, it was necessary to proxy these changes by altering the parameters for maximum payment standards, the guaranteed standard of need, the minimum payment, and the asset limit. By experimentation it was found that reducing the payment and guaranteed standards by 12 percent, setting a $10 ($6 in 1975) minimum payment and limiting allowable assets to $1000 (deflated to $589 for 1975), an ex ante reduction of $1.1 billion could be generated. We fully recognize that these changes may not produce an AFDC distribution identical to the distribution generated by the actual 1981 legislation.

To proxy the 10 percent reduction in the Food Stamp program, two major changes were made in the TRIM parameters. The purchase requirement was increased by 7 percentage points (from 30% to 37%) so as to reduce the average bonus value from $70 to $63 per $100 of Food Stamps. In addition automatic food stamp eligibility for AFDC recipients was removed and medical deductions were limited to those recipients age 60 or older. Together these changes generated aggregate simulated savings of approximately $600 million (in 1975). The same caveat regarding AFDC applies here.

The aggregate change in federal civilian procurement was set at $3.9 billion so as to yield an ex ante balanced budget. This decline in final demand was prorated across the 79 MRIO industries on the basis of the original non-defense final demand vector in the 1963 MRIO accounts.[11] The key sectors directly affected by the budget reductions are: new construction (16.1%), medical and education services (13.1%), agricultural products (12.5%), maintenance and repair construction (10.9%), and prepared food products (8.4%). (The percentages refer to the proportion of the $3.9 billion reduction in the identified sector.)

Simulation # 2

The second simulation is identical to the first with the exception that a reduction in personal income tax rates is incorporated as well. Essentially each marginal tax rate is cut by 10 percent and the entire set of rates is capped at 50 percent. No other

tax changes such as those affecting long-term capital gains are simulated.

The Results: Simulation # 1

To facilitate the presentation of the simulation results, we shall first report the aggregate nationwide impact of the budget shift on final demand, employment, tax revenues, and transfers. Following this, we shall present information on the effect of the program on disposable income and earnings by income class, race, and sex; changes in the demand for labor by occupation and industry; and finally, changes in employment, earnings, transfers, and final disposable income by region. The reader should keep in mind that this one simulation creates a veritable mountain of data, only a small fraction of which is presented in this report. More detailed information cross-tabulated by any of the nearly 600 variables on the basic household file can be easily accessed for analysis.

Nationwide Aggregate Impact

The very first finding emanating from the model is that the shift of budget authority from the civilian to the defense sector turns out to be expansionary, in accord with the statements attributed to Professor Blinder. The ex ante balanced budget produces a $1.13 billion decline in consumer demand (mostly as a result of the cuts in transfer payments), but overall generates a $575 million increase in

aggregate final demand when the net impact of federal procurement is included. Altogether over $1.0 billion in gross output is generated which is sufficient to create, on balance, nearly 19,500 new full-time equivalent jobs.

Table 1

Aggregate Impact of the
Civilian-Military Budget Shift
(No Tax Cut)

ΔFinal Demand	$0.575 billion
ΔGovernment Procurement	1.685 billion
ΔConsumption Demand	-1.130 billion
ΔGross Output	1.044 billion
ΔEmployment (FTEs)	19,487

In the aggregate, then, the shift to defense spending does not seem to warrant much concern on the grounds that it reduces employment opportunity and therefore could cause an increase in the need for public transfer programs.

While the level of employment increases, total family disposable income and consumption decline, primarily as a consequence of the sharp reductions in the AFDC and Food Stamp programs. The final direct and indirect effects in Simulation #1 are sufficient to reduce AFDC payments by $1.1 billion and the Food Stamp bonus value by $612 million. Thus, if there were no other indirect impacts, disposable income would decline by over $1.7 billion.

But a net boost in earnings plus an increase in unemployment

insurance benefits for those who lose their jobs as a result of the civilian procurement cutbacks offset nearly $570 million of this fall in family incomes. Total labor earnings rise by $365 million; non-labor earnings in the form of additional interest, dividends, and rent increase by another $63 million, and UI benefits to the unemployed amount to $139 million. After an increase in total taxes (federal personal income tax, state income tax, and FICA) of $23 million as a result of increased earnings, total family disposable income falls by only $1.17 billion compared with the original transfer payment cut of $1.7 billion. After all of the direct and indirect effects are taken into account, the ex ante balanced budget actually leaves the federal treasury with a small surplus, $26 million. The state treasuries suffer, however, because of the boost in unemployment benefits that far exceed the increased local income tax revenue. The overall shift in disposable income is displayed in Table 2 and Figure 1.

Overall, the balanced budget shift reduces disposable income by .14 percent, or about $15 per family unit in 1975. The cut in transfer payments alone reduces disposable income by .20 percent, while the shift in procurement priorities recaptures .06 percent of this amount.

The Impact by Income Class

The MRPIS model divides all family units into 7 income classes:

$0-2500
$2501-3750
$3751-5000
$5001-6250
$6251-7500
$7501-15000
$15000+

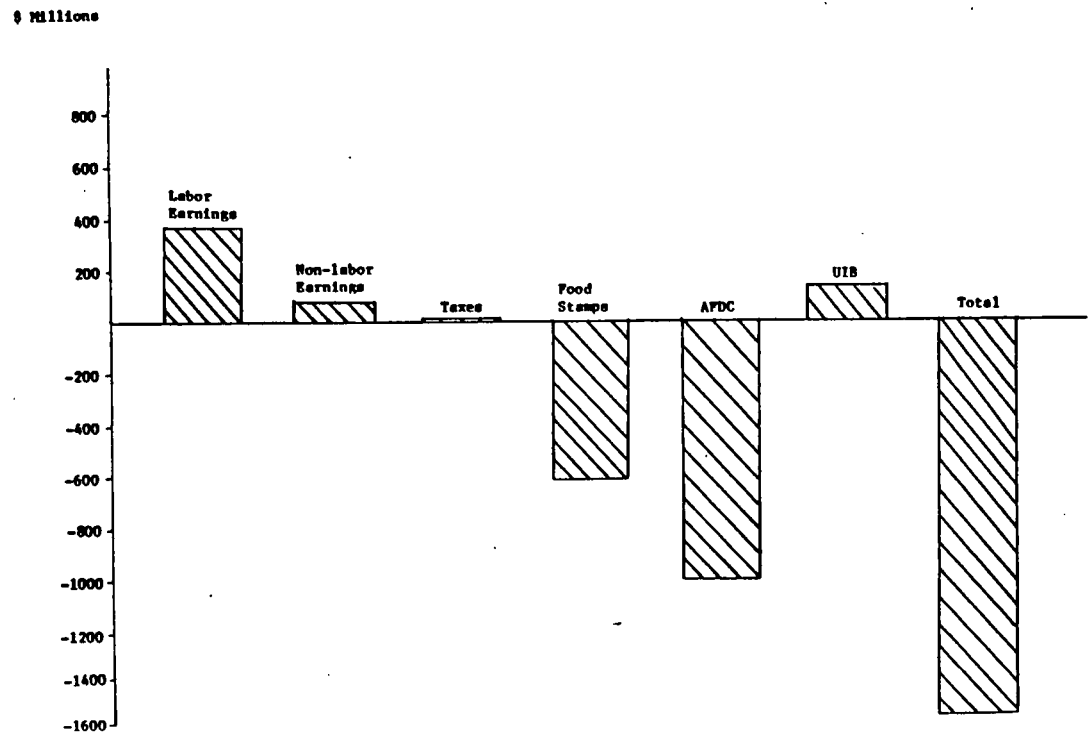
Table 2

Change in Family Disposable Income

	($billion)
ΔLabor Earnings	$0.365
ΔNon-Labor Earnings	0.063
ΔTotal Earnings	$0.428
ΔAFDC Payments	-1.102
ΔFood Stamp Bonus Value	-0.612
ΔUnemployment Benefits	0.139
ΔTotal Transfers	-$1.577
ΔFederal Income Tax	-0.001
ΔFICA Tax	0.019
ΔState Income Tax	0.005
ΔTotal Taxes	$0.023
ΔFamily Disposable Income	-$1.170

Figure 1

Change in Family Disposable Income by Component (No Tax Cut)



Each of the disposable income components can be estimated for each of these groups. The results are shown in Tables 3 and 4.

The overall effect of the program, because of the large transfer payment cuts, is to reduce the disposable income of all but the very lowest and very highest income groups. Those families with initial incomes of $2501-6250 are hit the hardest, with families in the $3751-5000 range experiencing a loss of nearly 1.5 percent of their disposable income, primarily because of the cuts in Food Stamps and AFDC. The top income group actually gains approximately $320 million because their labor and non-labor earnings improvements strongly outweigh the small transfer payment reductions they suffer. On average, these 27.7 million family units end up with nearly $12 more per family, while the 5.2 million families in the $5001-6250 category lose an average of $75 per year each. The very poorest families suffer a small earnings loss (for reasons we will see later), but this is made up for by increases in UIB and additional AFDC. (According to the TRIM simulator, participation in AFDC rises for this group when AFDC participation falls for those with more income.) While preserving the "social safety net" for the poorest of the poor, the change in budget priorities is clearly redistributive toward middle and upper middle income families.

The Demographics of the Change in Disposable Income

There are distinct "winners" and "losers" as a result of this change in budget authority. Young individuals and family heads suffer

Table 3

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Components of Change in Family Disposable Income - Total effect ($000)

U.S. Totals
1975

	$0-2500	$2501-3750	$3751-5000	$5001-6250	$6251-7500	$7501-15000	$15000+	Total	Δ
Total Family Units (incl. unrelated individuals)	4,774,813	5,057,072	5,319,188	5,184,864	4,839,414	23,527,220	27,662,556	76,339,126	
Adjusted Disposable Income	$956	-$164,816	-$336,948	-$385,328	-$241,685	-$363,774	$322,022	-$1,169,575	-0.14%
Wages & Salaries	-1,431	2,158	-5,887	9,689	68,807	119,518	172,307	365,162	0.04
Non-labor Earnings	167	523	1,009	1,525	2,461	23,750	33,833	63,270	
Federal Income Tax	-35	305	248	235	13,297	28,461	-43,988	-1,476	
State Income Tax	-31	10	-88	151	300	3,017	1,435	4,793	0.02
FICA Taxes	-125	118	-411	538	3,937	5,139	10,263	19,458	0.04
(Total Taxes)	(-191)	(432)	(-251)	(923)	(17,534)	(36,617)	(-32,289)	(22,776)	0.01
Food Stamps	-33,656	-33,400	-106,693	-161,961	-121,486	-150,920	-4,091	-612,207	-15.20
AFDC	33,948	-134,530	-230,704	-234,429	-158,628	-344,332	-33,865	-1,102,541	-14.30
UIB	1,756	717	6,299	1,430	-17,297	24,957	121,558	139,422	1.20
(Total Transfers)	(2,037)	(-167,254)	(-332,306)	(-395,663)	(-297,423)	(-470,438)	(83,602)	(-1,577,445)	-5.70

Table 4

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percentage Change in Components of Family Disposable Income

U.S. Totals

1975

	$0-2500	$2501-3750	$3751-5000	$5001-6250	$6251-7500	$7501-15000	$15000+	Total
Total Family Units (incl. unrelated individuals)	4,774,813	5,057,072	5,319,188	5,158,864	4,839,414	23,527,220	27,662,556	76,339,126
ΣΔDisposable Income								
- Transfer Cut Effect	0.16%	-1.06%	-1.58%	-1.42%	-0.90%	-0.21%	-0.01%	-0.20%
- Total Effect	0.01	-1.06	-1.49	-1.39	-0.78	-0.16	+0.06	-0.14
Average ΔDisposable Income per Family								
- Due to Transfers	$2.30	-$32.67	-$67.19	-$76.69	-$57.66	-$20.36	-$1.42	-$22.33
- Total effect	$0.20	-$32.59	-$63.34	-$74.69	-$49.95	-$15.46	$11.64	-$15.32
ΣΔEarnings	-0.10%	0.07%	-0.07%	0.07%	0.37%	0.06%	0.03%	0.04%
ΣΔTransfers (AFDC,FS,UIB)	0.11	-5.77	-8.25	-10.57	-9.04	-6.53	1.73	-5.66
ΣΔAFDC	23.79	-12.42	-12.85	-15.82	-16.31	-17.95	-9.86	-14.25
ΣΔFood Stamps	-5.74	-5.53	-14.12	-24.92	-19.71	-19.86	-7.33	-15.20
ΣΔUIB	0.78	0.26	0.95	0.12	-1.31	0.64	2.79	1.17

the largest losses in disposable income. While the average loss across all family units was -.14 percent as noted above, those under the age of 25 had an average decline of more than four times this amount (-.62%). (See Table 5) In fact, the decline in disposable income falls with age right through those aged 55 and above, suggesting that the elderly are least affected by the program. Presumably, this is consistent with the Administration's attempt to insulate the very poorest families and the elderly from cuts in the social safety net.

Table 5

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percent Change in Family Disposable Income
by Age of Family Head and Region

	<25	25-34	35-54	55+	ALL AGE GROUPS
NEW ENGLAND	-0.97	-0.22	-0.04	0.10	-0.07
MIDDLE ATLANTIC	-0.49	-0.07	-0.22	0.01	-0.11
EAST NORTH CENTRAL	-0.66	-0.21	-0.12	-0.06	-0.15
WEST NORTH CENTRAL	-0.25	-0.14	-0.11	-0.08	-0.12
SOUTH ATLANTIC	-1.47	-0.35	-0.09	-0.12	-0.22
EAST SOUTH CENTRAL	-0.63	-0.19	-0.21	-0.24	-0.24
WEST SOUTH CENTRAL	-0.24	-0.20	-0.07	-0.20	-0.17
MOUNTAIN	-0.25	-0.15	-0.12	-0.08	-0.13
PACIFIC	-0.56	-0.17	-0.04	0.02	-0.08
U.S. TOTAL	-0.62	-0.19	-0.11	-0.06	-0.14

Race/ethnicity and sex matter as well. Families headed by white males are left, on average, unaffected by the budget shift. Gainers equal winners. On the other hand, families headed by non-whites and women all suffer at least a small drop in disposable income, with non-white female headed families and unrelated individuals suffering nearly a 3 percent decline. This is the largest loss recorded

anywhere in the analysis and can be directly attributed to the cuts in AFDC and Food Stamps. In fact families headed by a young (age < 35) non-white female lose 4 to 4.5 percent of their previous disposable income because of the program. (See Table 6)

Table 6

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percent Change in Family Disposable Income
by Age and Race/Ethnic Group

	MALE MAJORITY	MALE MINORITY	FEMALE MAJORITY	FEMALE MINORITY	ALL GROUPS
<25	-0.42	0.03	-0.83	-3.56	-0.42
25-34	0.05	0.25	-1.44	-4.56	-0.19
35-54	0.03	-0.23	-0.75	-2.48	-0.11
55+	-0.00	-0.31	-0.16	-0.57	-0.06
ALL AGE GROUPS	0.00	-0.10	-0.96	-2.92	-0.14

The Demographics of the Change in Earnings

As we noted above, the budget shift generates over $365 million in net wages and salaries. Because of the labor market embodied in the MRPIS model, it is possible to ascertain which demographic groups were successful in obtaining a share of the earnings increment and, of course, which groups may have suffered because of the reduction in civilian procurement and the myriad of interaction effects in the business sector.

The simulation suggests that prime age workers, and particularly those between the ages of 25 and 34, do best in terms of annual earnings. (See Table 7) Those who are craftsmen and operatives have

the largest gains (+.21 percent) while laborers (mostly in agriculture) suffer the worst losses (-.27 percent).(See Table 8) This could explain the loss in wages and salaries in the lowest income category shown in Table 3. In terms of industry sectors, the gainers include those in construction, durable manufacturing, and transportation (+.49 percent) while those in agriculture and mining experience a .31 percent drop in annual earnings. (See Table 9) Finally, there seems to be a slight edge in earnings for whites. White men and women earn .06 and .05 percent more respectively, while non-white men and women suffer slight wage losses (-.02 and -.01 percent). (See Table 10) This is a particularly interesting finding since the MRPIS Level 1.0 model labor market does not use race, ethnic group, or sex in assigning change in labor demand to individuals in the household sector. The results therefore suggest that the change in budget priorities (and the subsequent interaction effects) favor industries and occupations where whites now predominate and reduces demand in those industries where a larger proportion of minorities are concentrated.

Table 7

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percent
Change in Individual Earnings
by Age of Worker and Region

	<25	25-34	35-54	55+	MARGINALS
NEW ENGLAND	0.15	0.34	0.30	0.15	0.27
MIDDLE ATLANTIC	0.00	0.13	0.03	0.13	0.04
EAST NORTH CENTRAL	0.05	0.09	-0.01	-0.02	0.02
WEST NORTH CENTRAL	0.13	-0.06	-0.01	-0.02	-0.00
SOUTH ATLANTIC	-0.06	-0.11	-0.09	-0.12	-0.10
EAST SOUTH CENTRAL	-0.06	-0.03	-0.11	-0.04	-0.07
WEST SOUTH CENTRAL	-0.08	-0.05	0.10	-0.12	0.00
MOUNTAIN	-0.01	0.02	-0.01	-0.12	-0.01
PACIFIC	0.05	0.43	0.19	0.10	0.23
U.S. TOTAL	0.02	0.10	0.04	0.03	0.05

Table 8

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percent Change in Individual Earnings

by Occupation and Region

	UNKNOWN	PROF & MANAGERS	SALES CLERICAL & SERVICE	CRAFT & OPERATIVE	LABORERS & AG WORKERS	ALL OCCUPATIONS
NEW ENGLAND	0.00	0.24	0.02	0.59	0.18	0.27
MIDDLE ATLANTIC	0.00	0.07	-0.02	0.21	-0.04	0.06
EAST NORTH CENTRAL	0.00	-0.01	-0.04	0.11	-0.06	0.02
WEST NORTH CENTRAL	0.00	0.02	-0.11	0.11	-0.10	-0.06
SOUTH ATLANTIC	0.00	-0.11	-0.08	-0.03	-0.32	-0.10
EAST SOUTH CENTRAL	0.00	-0.06	-0.10	-0.04	-0.20	-0.07
WEST SOUTH CENTRAL	0.00	0.06	-0.04	0.05	-0.43	0.00
MOUNTAIN	0.00	-0.00	-0.00	0.19	-0.28	-0.02
PACIFIC	0.00	0.11	0.13	0.76	-0.49	0.23
U.S. TOTAL	0.00	0.03	-0.03	0.21	-0.27	0.09

Table 9

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percent Change in Individual Earnings

by Industry and Region

	LABAGRN	AGRIC & MINING	CONSTR DURABLE & TRANS	NONDURABLE SERVICES & AG AGRN	TRADE FIRE &O.SERVICE	GOV. ENTERPRIS	ALL INDUSTRIES
NEW ENGLAND	0.00	0.37	0.95	-0.03	-0.05	0.00	0.27
MIDDLE ATLANTIC	0.00	0.05	0.49	-0.07	-0.08	0.00	0.06
EAST NORTH CENTRAL	0.00	-0.08	0.28	-0.12	-0.13	0.00	0.02
WEST NORTH CENTRAL	0.00	-0.10	0.44	-0.16	-0.17	0.00	-0.06
SOUTH ATLANTIC	0.00	-0.55	0.10	-0.10	-0.14	0.00	-0.10
EAST SOUTH CENTRAL	0.00	-0.10	0.11	-0.10	-0.15	0.00	-0.07
WEST SOUTH CENTRAL	0.00	-0.60	0.39	-0.06	-0.11	0.00	0.00
MOUNTAIN	0.00	-0.23	0.28	-0.10	-0.11	0.00	-0.02
PACIFIC	0.00	-0.77	1.10	-0.08	-0.08	0.00	0.23
U.S.TOTALS	0.00	-0.31	0.49	-0.09	-0.12	0.00	0.09

Table 10

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Percent Change in Individual Earnings
by Race/Ethnic Group and Region

	MALE MAJORITY	MALE MINORITY	FEMALE MAJORITY	FEMALE MINORITY	ALL GROUPS
NEW ENGLAND	0.25	0.10	0.24	0.24	0.27
MIDDLE ATLANTIC	0.11	0.01	0.00	0.01	0.06
EAST NORTH CENTRAL	-0.00	0.25	0.03	0.06	0.02
WEST NORTH CENTRAL	-0.02	0.21	0.02	0.01	-0.00
SOUTH ATLANTIC	-0.12	-0.14	-0.03	-0.05	-0.10
EAST SOUTH CENTRAL	-0.08	-0.03	-0.09	-0.01	-0.07
WEST SOUTH CENTRAL	0.01	-0.04	0.02	-0.07	0.00
MOUNTAIN	-0.03	0.13	-0.05	-0.03	-0.02
PACIFIC	0.29	-0.20	0.26	0.03	0.23
U.S. TOTAL	0.06	-0.02	0.05	-0.01	0.05

Employment Gains and Losses by Industry

In accord with this conjecture, we find that the shift from non-defense to defense spending has a significant impact on which industries expand and which contract. We have translated the changes in hours of industry demand (generated by the MRPIS model) into full-time equivalents (2,080 hours per year) in order to show which industries are affected the most. Since there are relatively large cuts in disposable income (especially among lower income families), changes in household consumption as well as changes in federal procurement are going to affect employment levels by industry.

The "winners" in the budget shift are not suprisingly all directly related to military spending.

Gainers (+5,000 FTEs)	FTEs
Aircraft, parts	37,566
Radio, TV, radar, sonar	17,952
Ordnance, accessories	14,329
Electronic components	6,587

The "losers" are found in those sectors where the federal government spends the largest share of civilian dollars and where lower income consumers spend a large proportion of their income.

Losers (+5,000 FTEs)	FTEs
Medical, education	-23,762
Other agricultural products	-11,708
Wholesale, retail trade	-11,183
Maintenance, repair construction	- 7,299

Employment Gains and Losses by Occupation

The shift in budget priorities also induces a rather dramatic change in the demand for labor by occupation. In particular, there is a structural switch from generally lower-skilled jobs to those requiring more education and skills. The demand for sales, service, and clerical workers, along with laborers and household workers declines by over 20,000 jobs nationwide, while the number of full-time equivalent positions for professionals and managers, along with craftsmen and operatives, increases by over double this amount.

Occupational Shift (in FTEs)	
Professionals managers	+ 3,256
Craftsmen operatives	+37,087
Sales, service, and clerical	- 8,916
Laborers household workers	-11,940

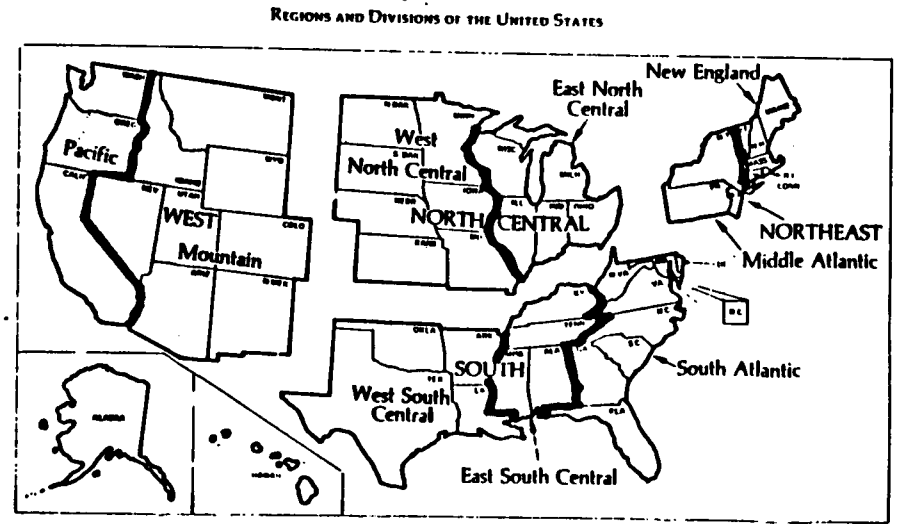
Craftsmen and operatives are obviously the big winners in this scenario. This is due to the increased demand for such workers in the key defense industries: aircraft, ordnance, radio, TV, radar, sonar, and electronics. Combined, these industries demand more than 46,000 additional full-time blue-collar workers with these skills. More than 20,000 professionals and managers are also demanded by these industries.

The losers are made up of workers at both ends of the occupational spectrum. More than 13,500 professional and managerial FTEs are lost in the medical and education sector as a result of the $3.9 billion cutback in federal civilian procurement and the $1.1 billion reduction in induced household consumption. Farm laborers and blue-collar workers in the food processing industries are significant losers as well. Almost 11,000 fewer farm laborers are demanded under this simulation and over 3,000 workers in the food and kindred products industry are no longer needed. These workers required more UIB and Food Stamps and some of them AFDC. We shall return to this issue later in this report.

The Impact of the Budget Shift on the Regions

Because of the regional detail in the MRPIS model (50 states plus the District of Columbia), it is possible to analyze the overall effect of the budget shift on individual states and, through

Figure 2



Note: Pacific division includes Alaska and Hawaii.

Table 11

EXPENDITURE ANALYSIS - BALANCED BUDGET (NO TAX CUT)

Regional Analysis of the Budget Priority Shift

	% Change in Disposable Income	% Change in Earnings	Earnings	Change in Disposable Income	% of National % Change in Disposable Income	% of Family Units	Relative Share of % Change in Disposable Income
New England	-0.07%	0.27%	$138,710	-$34,368	2.83%	5.63%	50.3
Middle Atlantic	-0.11	0.08	122,564	-178,132	14.68	17.26	85.1
East North Central	-0.15	0.02	37,787	-250,910	20.68	18.63	111.0
West North Central	-0.12	0.0	-2,081	-74,576	6.15	7.85	78.3
South Atlantic	-0.22	-0.10	-129,592	-276,736	22.81	15.90	143.5
East South Central	-0.24	-0.07	-33,165	-108,081	8.91	6.08	146.5
West South Central	-0.17	0.0	519	-134,666	11.10	9.75	113.8
Mountain	-0.13	-0.02	-8,637	-49,278	4.06	4.58	88.6
Pacific	-0.08	0.23	309,988	-106,321	8.76	14.28	61.3
U.S.	-0.14%	0.05%	$436,094	-$1,213,058	100.0%	100.0%	100.0

aggregation, on census regions. (See Figure 2) Differences in the industrial structure of each state and region, and variation in the extent to which they currently offer transfer programs such as AFDC, almost assure that any major change in budget priority will have some regional effects. The simulation suggests that these are not inconsequential.

Table 11 presents the final percentage change in family disposable income for each of the nine census divisions. The South (and particularly the states in the East South Central and the South Atlantic regions) fare the poorest. Mississippi, Alabama, Tennessee, and Kentucky as a region suffer a .24 percent reduction in disposable income while the states in the South Atlantic region from Delaware to Florida lose .22 percent. Part of this is due to the heavy reliance on AFDC and Food Stamps in these states, but part of it is also due to the fact that this area has an industrial structure that is not favored by the shift in the federal procurement pattern. On the other hand, the New England and Pacific regions experience the smallest declines in family disposable income largely because of the concentration of aircraft plants on both coasts. They suffer a .07 and .08 percent decline in income respectively.

To accurately reflect the disparity between regions, it is helpful to analyze the change in aggregate family income relative to the number of family units in each region. For example, New England contains 5.6 percent of the nation's family units, but accounted for only 2.8 percent of the total country's loss in disposable income. The region's loss was therefore only half as great as it would have

been if all regions shared equally in the change in disposable income. In contrast, the East South Central region suffered a loss nearly 1.5 times the national average.

These differences are reflected in the changes in net earnings in each area of the country. New England and the Pacific regions had hefty increases in earnings (.27% and .23% respectively), while the two key southern regions both suffered absolute earnings losses. The Middle Atlantic states and the industrialized East North Central region both had slight earnings gains while the farm belt and the mountain states basically broke even on wages and salaries.

What's behind these regional disparities? A look at the industrial structure of each region reveals why some areas of the country do better than others under this budget program. New England and the West Coast do well because they are specialized in the durable manufacturing industries that supply the defense department. The southern states do badly because their economies are still agriculturally-based and the farm sector is hit by the cuts in the Food Stamp program and the loss in income among low-income families in general.

An analysis of individual states shows where the employment and earnings gains are the largest. (See Table 12) Connecticut, the world's leading producer of jet engines and a major shipbuilding area, ends up with a net increase of over 6,200 FTE jobs as a result of the shift in budget priorities. Two-thirds of these are in the aircraft industry with another 1,200 in ordnance and shipbuilding. Massachusetts gains nearly 3,400 FTEs because of its high technology

Table 12

Change in Employment (FTEs) by State and Industry as a Consequence of the Budget Shift (No Tax Cut)

Major Industries/Key States

State	Total FTEs	Key Gaining Inds. (over 500 jobs)		Key Losing Inds.	
Massachusetts	3,386	Radio	1,420	Medical &Educational	-735
Connecticut	6,263	Aircraft	3,926		
		Ordnance	788		
		Shipbuilding	442		
New York	2,174	Radio	2,942	Medical &Educational	-2,574
		Aircraft	2,642	Maintenance Repair Const.	-924
		Ordnance	620		
		Electronics	736		
New Jersey	3,033	Radio	1,951	Medical &Educational	-517
		Electronics	585		
		Aircraft	972		
Pennsylvania	1,450	Aircraft	1,354	Medical &Educational	-1,239
		Electronics	685		
		Radio	504		
Ohio	3,172	Aircraft	3,039	Medical &Educational	957
		Radio	614		
		Ordnance	572		
Indiana	2,424	Aircraft	1,176		
		Radio	974		
Missouri	1,274	Aircraft	2,373	Medical &Educational	719
		Ordnance	644		
Kansas	1,082	Aircraft	1,638		
Washington, D.C.	-3,715			Medical &Educational	-663
				Business Services	-502
				Trade	-623
				Other Agri. Products	-410

Table 12 (cont.)

State	Total FTEs	Key Gaining Inds. (over 500 jobs)		Key Losing Inds.
Virginia	-923			Medical &Educational -470 Trade -474
North Carolina	-1,985			Trade -492 Other Agri. Products -256 Medical &Educational -285
Florida	-3207	Aircraft	457	Other Agr. Products -1,881
		Ordnance	447	Trade -792 Medical &Educational -933
Tennesee	-1,189			Medical &Educational -541
Arkansas	-1,320			Medical &Educational -342 Other Agr. Products -306
Washington	3,051	Aircraft	3,223	
California	14,468	Aircraft	7,953	Other Agr. Products -3,430
		Ordnance	6,570	Medical &Educational -1,957
		Radio Electronics	3,581 1,140	
U.S.	19,487	Aircraft	37,566	Med.& Educational -23,762
		Ordnance	14,329	Other Agr. Products -11,708
		Radio	17,952	Trade -11,183 Hotels, Pers. Serv. -4,123

industry (mainly radio, TV, radar, and electronics) and its own jet engine production facilities. Other gainers because of these industries are: New York, New Jersey, Ohio, Missouri, Kansas, Washington, and California. Virtually every state with a major aircraft facility (Boeing, McDonnell-Douglas, Lockheed, Pratt & Whitney, General Electric, and North-American Rockwell) fares well under the budget shift, as do states with high tech industries. Those states that suffer a more than average loss in income are those with large agricultural sectors (such as North Carolina and Florida) with no offsetting defense industry.

The transfer program losses are distributed even more unequally than employment because of the wide variation in program utilization. Over two-thirds of the total reduction in AFDC payments takes place in just three regions: Middle Atlantic, East North Central, and Pacific. Included in these regions are the states with the largest caseloads and the highest benefits, states like New York, California, and Michigan. In contrast, nearly two-thirds of the reduction in Food Stamp benefits occurs in the three southern regions: South Atlantic, East South Central, and West South Central. Included in these regions are the states with the lowest AFDC benefits and the greatest amount of poverty. As a consequence, they are the most reliant on the Food Stamp program.

There is one interesting anomaly in the results that points up the interdependence between transfer programs. The Middle Atlantic region, including New York, New Jersey, and Pennsylvania suffers a loss of nearly $300 million in AFDC benefits. This is 27 percent of

the U.S. total. The cuts in AFDC are so extensive that the families who experience them are apparently eligible for enough added Food Stamp benefits that overall the region's Food Stamp bill goes up, rather than down.

Finally, the analysis also provides some information on the transition from welfare dependency to independence, and through the labor market in the model, on the transition from welfare to work. For example, the initial Food Stamp caseload in the simulations includes 5,351,000 families (and unrelated individuals) or 7 percent of all family units. The immediate change in the Food Stamp eligibility criteria (in connection with the changes in the AFDC program) results in eliminating on net 71,500 cases. However, because of changes in labor demand generated by the budget shift, some 25,000 new families are enrolled in the program (as a consequence of earnings losses) while nearly 41,000 find jobs (or work more) so that they no longer require or are eligible for benefits. Thus the overall result is a reduction of more than 87,000 Food Stamp cases.[12] The net impact of employment creation on the AFDC caseload is, as expected, much weaker. Still over 2,100 families leave the AFDC rolls because of increased employment opportunity.

The Results: Simulation # 2

The second simulation represents an economic policy that is clearly expansionary. In addition to the same shift in budget priorities studied in the first simulation, this analysis includes

cuts in federal personal income tax rates that initially reduce income tax revenue by $13.75 billion. This produces a large boost in family disposable income and consequently large increases in consumption, final demand, gross output, and employment. In turn, this expansion of the economy is responsible for a significant (additional) reduction in the Food Stamp and AFDC programs as welfare recipients find jobs or otherwise increase their employment.

Nationwide Aggregate Impact

As Table 13 indicates, the shift in budget priorities, in conjunction with the sizable cuts in personal income taxes, produces over $13.5 billion in additional final demand and $11.8 billion in induced household consumption. This, in turn, is responsible for generating employment demand for nearly 584,000 additional full-time equivalent jobs in the private sector. According to the analysis, one FTE was generated for every $23,000 of final demand. Annual earnings averaged $10,650 per FTE created.

Table 13

Aggregate Impact of the Budget Shift and Tax Cut

ΔFinal Demand	$13.554 billion
ΔGovernment Procurement	1.685 billion
ΔConsumption Demand	11.849 billion
ΔGross Output	23.893 billion
ΔEmployment (FTEs)	583,647

Nationwide, total family disposable income rises by $16.6 billion or practically 2 percent after taking into account the tax cut and the more than $6.2 billion in new wages and salaries induced by the increase in household consumption demand. Dividends, interest, and rent payments rise by another $1.5 billion making for an increase in new family total earnings of over $7.7 billion. (See Table 14)

Table 14

Change in Family Disposable Income
($billion)

ΔLabor Earnings	$6.216
ΔNon-Labor Earnings	1.490
ΔTotal Earnings	$7.706
ΔAFDC Payments	-1.117
ΔFood Stamp Bonus Value	-0.654
ΔUnemployment Benefits	-0.839
ΔTotal Transfers	-$2.643
ΔFederal Income Tax	-12.138
ΔFICA Tax	0.279
ΔState Income Tax	0.351
ΔTotal Taxes	-$11.508
ΔFamily Disposable Income	$16.574

Increased earnings, in turn, produce new federal and state government revenue flows at the same time that they reduce the demand

for transfer payments. Families pay $1.6 billion in federal personal income taxes and $280 million in additional FICA taxes on the extra $7.7 billion of total earnings. State governments also benefit gaining $350 million in additional state income taxes.

On the transfer side, the tax cut generates additional savings in both the AFDC and Food Stamp programs and (relative to Simulation # 1) leaves unemployment benefit programs nationwide almost $1 billion healthier. A comparison with the results from the simple budget shift simulations (recall Table 2) shows that tax-cut induced job creation saves the AFDC program an additional $15 million and the Food Stamp program $42 million more. One should note that these reductions are the direct result of current recipients finding jobs or increasing their employment in response to the increase in aggregate demand.

The Impact of the Budget Shift/Tax Cut Package on the Net Fiscal Position of Federal and State Government

The initial cost to the federal government of the entire budget reallocation and tax cut package was $13.75 billion -- the value of the original reduction in tax rates. In the course of the simulation, the federal government recoups personal income and FICA tax revenue and saves on AFDC and Food Stamp spending. The state governments gain additional income tax revenue and save on both AFDC and UIB costs. Overall, as Table 15 indicates, the federal and state treasuries recoup $5.0 billion leaving a net deficit position after all induced effects are taken into account only $8.8 billion. Assuming that the

states recoup half of AFDC savings, all of the induced UIB savings, and receive additional state income tax revenue out of new private sector earnings, the states become the real "winners". Our analysis suggests that they end up with nearly $1.9 billion in net revenues, almost half of which is in the form of UIB savings. The federal governmment recoups $3.1 billion, a little more than half from the personal income tax and the rest from increased FICA and transfer savings.

Table 15

Net Fiscal Position of Federal and State Governments as a Result of the Budget Shift/Tax Cut Package (in billions)

	Federal Government	State Governments	Total
Initial Federal Income Tax Cut	-$13.750		-13.750
Induced Federal Income Tax	1.612		1.612
Induced State Income Tax		0.350	0.350
Induced FICA Tax	0.279		0.279
Direct Cut in Food Stamps	0.612		0.612
Induced Cut in Food Stamps*	0.042		0.042
Direct Cut in AFDC	0.551	0.551	1.102
Induced Cut in AFDC*	0.007	0.007	0.015
Induced Cut in UIB*		0.978	0.978
Net Change in Fiscal Position	-$10.656	$1.886	-$8.760

*Tax-cut induced Savings

The Impact by Income Class

As one might expect, the income tax cut combined with the reductions in transfer payments tends to skew the distribution of disposable income toward the upper income groups. Most of this is due to the fact that, according to our analysis, five-sixths of the reduction in personal tax liability goes to the 36 percent of the population with (1975) incomes in excess of $15,000. Even without the 50% tax cap on marginal rates, a strictly proportional 10 percent reduction in tax rates would have yielded nearly the same result. The upper income groups are simply responsible for enough of pre-tax income that any tax cut will disproportionately benefit them. (See Table 16)

One should note that the tax cut (along with induced earnings growth) is substantial enough to benefit each of the income categories beginning with the $6251-7500 group. As in simulation # 1, the lowest income group also benefits from the total fiscal package, being the beneficiary of both additional AFDC payments and additional earnings. Overall, the average family in the nation gains $217 in added annual disposable income. The range across income categories is from -$38 in the $3751-$5000 group to +$492 in the highest income category. The tax cut benefits (including induced earnings) do not outweigh the transfer cuts for the lowest income categories (excluding category 1). (See Table 17)

While disposable income is skewed toward the more well-to-do, the lower income groups gain proportionately more from the induced

Table 16

EXPENDITURE ANALYSIS - BALANCED BUDGET (WITH TAX CUT)

Components of Change in Family Disposable Income - Total effect ($000)

U.S. Totals
1975

	$0-2500	$2501-3750	$3751-5000	$5001-6250	$6251-7500	$7501-15000	$15000+	Total	Δ
Total Family Units (incl. unrelated individuals)	4,774,813	5,057,072	5,319,188	5,184,864	4,839,414	23,527,220	27,662,556	76,339,126	
Adjusted Disposable Income	$86,921	-$102,851	-$201,468	-$85,604	$118,974	$3,140,589	$13,617,664	$16,574,226	1.94%
Wages & Salaries	90,988	59,483	180,912	317,417	405,087	1,540,614	3,621,667	6,216,169	0.73%
Non-labor Earnings	3,944	12,324	23,792	35,946	57,999	559,674	797,269	1,490,948	
Federal Income Tax	-513	-1,384	-22,742	-54,289	-73,974	-1,906,904	-10,078,612	-12,138,419	
State Income Tax	527	1,024	3,092	6,204	6,822	53,861	279,359	350,890	1.47
FICA Taxes	4,646	3,391	10,582	18,310	23,676	87,641	130,893	279,138	0.64
(Total Taxes)	(4,659)	(3,031)	(-9,068)	(-29,775)	(-43,477)	(-1,765,402)	(-9,668,359)	(-11,508,391)	-5.86
Food Stamps	-31,831	-30,732	-137,067	-169,647	-131,459	-149,291	-4,414	-654,442	-16.25
AFDC	33,600	-135,577	-236,338	-236,415	-161,320	-341,457	-39,832	-1,117,339	-14.44
UIB	-6,478	-4,611	-37,342	-58,110	-95,951	-210,730	-425,370	-838,594	-7.03
(Total Transfers)	(-3,342)	(-171,810)	(-615,216)	(-468,786)	(-389,593)	(-725,075)	(-469,616)	(-2,643,439)	-9.48

Table 17

EXPENDITURE ANALYSIS - BALANCED BUDGET (WITH TAX CUT)

Percentage Change in Components of Family Disposable Income

U.S. Totals
1975

	$0-2500	$2501-3750	$3751-5000	$5001-6250	$6251-7500	$7501-15000	$15000+	Total
Total Family Units (incl. unrelated individuals)	4,774,813	5,057,072	5,319,188	5,158,864	4,839,414	23,527,220	27,662,556	76,339,126
ΣΔDisposable Income								
- Tax & Transfer Effect	0.16%	-1.03%	-1.44%	-1.13%	-0.46%	0.79%	2.11%	1.40%
- Total Effect	1.24	-0.66	-0.89	-0.31	0.38	1.40	2.58	1.94
Average ΔDisposable Income per Family								
- Due to Taxes & Transfers	$2.32	-$31.57	-$61.32	-$60.68	-$29.58	$75.06	$401.73	$156.51
- Total effect	$18.20	-$20.34	-$37.88	-$16.59	$24.58	$133.49	$492.28	$217.11
ΣΔEarnings	6.62%	1.98%	2.28%	2.19%	2.17%	0.73%	0.60%	0.73%
ΣΔTransfers (AFDC,FS,UIB)	-0.18	-5.93	-10.30	-12.53	-11.84	-10.06	-9.71	-9.48
ΣΔAFDC	23.54	-12.52	-13.16	-15.96	-16.59	-17.80	-11.60	-14.44
ΣΔFood Stamps	-5.42	-5.09	-18.14	-26.11	-21.33	-19.64	-7.91	-16.25
ΣΔUIB	-2.88	-1.66	-5.61	-4.97	-7.29	-5.38	-9.77	-7.03

earnings generated by the tax cut. For example, those in the poorest income category gain enough additional employment to boost their earnings by over 6.6 percent. At the other extreme, the highest income category enjoys a proportional earnings gain only one-tenth as large. For one group in the middle of the income distribution, the additional earnings from employment is sufficient to turn a $30 per year loss in disposable income around to a $25 average annual gain.

The Demographics of the Change in Disposable Income

The "winners" and "losers" under the combined budget shift/tax cut policy differ somewhat from the list presented for the budget shift alone. First off, all age groups benefit from the program. But the greatest gains are found among prime age families (those in the age groups 25-34 and 35-54). The very young and very old benefit less because the savings from the tax cut go mainly to those who are in their peak earning years. [13] (See Table 18) Those families headed by an individual under the age of 25 gain only half as much proportionally, while the older group within the two prime age categories enjoys a 2.05 percent boost in disposable income.

Table 18

EXPENDITURE ANALYSIS - BALANCED BUDGET (WITH TAX CUT)

Percent Change in Family Disposable Income
by Age of Head and Region

	<25	25-34	35-54	55+	ALL AGES
NEW ENGLAND	0.52	1.87	2.20	1.83	1.95
MIDDLE ATLANTIC	1.25	1.89	2.23	1.80	1.56
EAST NORTH CENTRAL	0.87	1.80	2.04	1.92	1.90
WEST NORTH CENTRAL	1.40	1.75	1.94	1.22	1.53
SOUTH ATLANTIC	-0.93	1.66	1.86	1.27	1.55
EAST SOUTH CENTRAL	0.82	1.89	1.80	1.58	1.54
WEST SOUTH CENTRAL	1.35	1.95	1.88	1.31	1.69
MOUNTAIN	1.38	1.49	1.86	1.32	1.60
PACIFIC	1.85	1.71	2.27	2.33	2.09
U.S. TOTAL	0.56	1.76	2.05	1.69	1.82

Again race/ethnicity and sex matter. Families headed by a white male gain some 2.11 percent in disposable income, while at the other extreme, those headed by female minorities lose on average 1.78 percent of their initial disposable income. (See Table 19) That families headed by minority males also gain appreciably from the overall program suggests that the AFDC cuts may be dominating all other factors in explaining the changes in disposable income among female-headed families, and especially those headed by a member of a minority group.

Table 19

EXPENDITURE ANALYSIS - BALANCED BUDGET (WITH TAX CUT)

Percent Change in Family Disposable Income
by Race/Ethnic Group and Region

	MALE MAJORITY	MALE MINORITY	FEMALE MAJORITY	FEMALE MINORITY	ALL GROUPS
NEW ENGLAND	2.24	1.89	0.52	-3.47	1.95
MIDDLE ATLANTIC	2.29	2.55	0.63	-2.49	1.96
EAST NORTH CENTRAL	2.16	2.21	0.72	-2.40	1.90
WEST NORTH CENTRAL	1.80	1.61	0.74	-2.53	1.63
SOUTH ATLANTIC	1.80	1.30	0.84	-0.53	1.55
EAST SOUTH CENTRAL	1.89	0.59	0.88	-1.27	1.54
WEST SOUTH CENTRAL	1.95	1.41	0.72	-1.05	1.69
MOUNTAIN	1.85	0.88	0.45	-1.36	1.60
PACIFIC	2.51	1.20	1.11	-2.08	2.09
U.S. TOTAL	2.11	1.56	0.77	-1.78	1.82

The Demographics of the Change in Earnings

The addition of the sizable tax cut to the budget shift does not change our original finding concerning the distribution of earnings gains. The lowest income groups gain proportionately the most; the highest income groups the least. This suggests, as before, that a significant number of the jobs created by the tax cut (and the shift in budget priorities) do go to lower wage workers.

What is perhaps most interesting, however, is that the tax cut induced job creation boosts the earnings of women slightly more than men (outside of the South.) Moreover, the largest proportional gains in individual earnings go to young non-white men, and young women (both white and non-white). (See Table 20) This suggests the expansionary fiscal policy will benefit those groups presently with the very highest unemployment rates. Apparently the types of jobs generated by the particular pattern of consumption induced by the tax cut include a significant number that are open to these obviously disadvantaged groups. One irony in our economy is that higher income families tend to spend a larger portion of any marginal dollar of disposable income on goods and services provided by less-skilled and less-experienced workers. This is one instance where "trickle-down" seems to work.

Table 20

EXPENDITURE ANALYSIS - BALANCED BUDGET (WITH TAX CUT)

Percent Change in Individual Earnings
by Race/Ethnic Group and Age

	MALE MAJORITY	MALE MINORITY	FEMALE MAJORITY	FEMALE MINORITY	ALL GROUPS
<25	0.54	2.33	1.02	1.24	1.33
25-34	0.88	0.57	0.71	0.86	0.82
35-54	0.53	0.34	0.81	0.74	0.58
55+	0.61	1.21	0.54	0.67	0.62
U.S. TOTAL	0.67	0.72	0.90	0.83	0.73

Employment Gains by Industry and Occupation

The shift in budget priorities from non-defense to defense spending saw large employment gains in the traditional military-oriented industries. Once the tax cut induced consumption pattern is added to the shift in public sector final demand, the range of industries expanding employment broadens considerably. Given the fact that higher income groups benefit disproportionately from the rise in disposable income, one might expect the new employment pattern to reflect their consumption choices. Indeed, this seems to be the case. The industries experiencing an expansion of 10,000 or more FTEs are:

Industry	FTEs
Wholesale/Retail trade	136,291
Finance, insurance services	50,255
Medical, education services	39,233
Aircraft, parts	37,721
Transportation, warehousing	25,654
Personal services, hotels	24,981
Apparel	20,702
Radio, TV, radar, sonar	19,339
Household furniture	17,788
Business services	16,403
Motor vehicles, parts	14,888
Ordnance, accessories	14,464
Amusements	12,946

The employment gains for younger workers can be traced to the increased demand for workers in retail trade, personal services, and amusements.

Still, the largest FTE gains are found among craftsmen and operatives, those who work in the traditional durable and non-durable manufacturing industries. As Table 21 shows, this occupation group gained over 267,000 FTE slots. The large dollar earnings gains to prime age workers can be traced to expansion in this sector.

Table 21

Change in FTEs and Aggregate Earnings by Occupation

	ΔFTEs	ΔEarnings	Annual Earnings/FTE
Professionals, Managers	149,887	$2.070 b.	$13,807
Sales, Clerical, and Service Workers	150,885	1.271 b.	8,428
Craftsmen and Operatives	267,103	2.927 b.	10,959
Laborers and Household Workers	15,772	0.116 b.	7,073
Total	583,647	$6.384 b.	$10,650

The Regional Impact of the Budget Shift/Tax Cut Program

The budget shift alone created significant regional disparities in disposable income, particularly because of the location of key defense industries and the differential use of transfer programs among regions. Once the tax cut is added to the budget shift, much of the regional disparity disappears. The South Atlantic states gain the least from the total fiscal package, but they nevertheless end up with an increase of 1.54 percent in disposable income. The Pacific region gains the most, 2.09 percent.

A comparison of the coefficients of variation in disposable income across regions indicates clearly the reduced interregional

disparity in disposable income. In simulation # 1, this statistic of relative variance has the value of .407. In simulation # 2, the coefficient of variation is only .117, suggesting a much tighter distribution. The budget shift taken by itself is not distributionally neutral across regions. When the shift in spending priorities is tied to a large general tax cut, however, one can argue that the entire package tends to be relatively neutral with regard to the regional distribution of disposable income. Essentially, the non-neutral impact of defense spending is largely offset by the relatively neutral tax cut. Notwithstanding, the total package does provide some additional benefit to the East and West Coast states relative to the South and the Prairie states. As expected, individual earnings growth is more unequally distributed across regions than disposable income. (Coefficient of variation = .304). States with defense industries still tend to benefit more than others.

Some Implications based on the Simulation Results

Many of the statistics generated by these simulations speak for themselves. However, it seems useful to mention some of the major implications the Policy Impact Study staff draws from these results. These are offered in the expectation that a useful dialogue about specific public policies can be undertaken on the basis of the MRPIS model. No attempt is made here to play out in detail any particular set of policy implications. The reader should recall that all statistics reported in this document refer to calender 1975 and therefore cannot be compared directly to present aggregate income levels.

[1] An Expansionary Program - Contrary to widespread popular belief, a general shift in budget priorities from civilian sector procurement and transfer programs to heavier military spending does not appear to have an adverse effect on aggregate final demand nor the overall level of employment. Spending on the military produces approximately the same number of full-time equivalent jobs as does spending on civilian programs.

Once the tax cut is added to the budget shift, the overall fiscal program proves to be highly expansionary. Overall, some 584,000 FTEs are generated in a broad array of industries. This implies that once the Administration's tax program is phased in, one might expect a rather strong economic recovery that will not be damped by the shift away from transfer programs or toward military spending. Obviously, other factors such as interest rates and expected future sales will play an important role in determining how strong the recovery will be. But the budget shift itself will not be a fetter on expansion or require large outlays of additional transfer payments for those displaced from industries that are closely tied to federal government civilian procurement.

[2] Income Distribution by Income Class - The concern that some groups have about the distribution consequences of the Administration's budget are not without some substance. The shift in budget does benefit upper income family units while penalizing lower income groups that currently depend on various forms of transfers for a share of their income. However, the lowest income category appears to be insulated from the transfer cuts so that the "social safety net" remains in place for this group. Once the tax cut is added to the policy package, the distributional effects are amplified.

Disposable income for the top income category ($15,000+) increases by 2.6 percent due to the direct impact of the tax cut (+2.11%) plus induced earnings gains (+0.47%). For the lower income categories, the transfer cuts generally outweigh the induced earnings gains leaving a reduction in disposable income in the -.31 to -.89 percent range. On the other hand, the lowest income groups clearly receive the largest proportional increases in earnings, suggesting that induced employment demand is beneficial to those at the lower end of the income distribution. Although the term may be discredited, these results imply some degree of "trickle down" from tax cuts that favor the more well-to-do to earnings gains among others.

[3] Impact on the Public Treasury - The shift in budget priorities (without the tax cut) tends to be slightly expansionary leaving the federal treasury with a small budget surplus. Increased FICA revenue and induced reductions in Food Stamp payments more than offset small declines in personal tax revenues (as a result of some earnings losses among families in the highest tax brackets) and some induced increases in AFDC benefits.

Once the tax cut is added, it is impossible to avoid a federal deficit despite induced increases in personal tax and FICA revenues and some added reductions in the Food Stamp and AFDC programs. Our analysis suggests that approximately $3 billion is returned to the federal treasury so that the net (short-term) cost of the $13.5 billion tax cut figures out to be about $10.7 billion. This deficit may be further reduced if the tax cut induces greater work effort and therefore more tax revenue, but the Level 1 MRPIS model is not equipped to measure this "supply-side" effect.

While the federal government experiences a deficit, the state governments are likely to be the real "winners" as a result of the expansionary policy. Increased earnings generate higher state income tax revenues and lower unemployment insurance costs. Together these produce a $1.3 billion "surplus" in state treasuries. In addition, if the AFDC reductions at the federal level are carried through at the state level, there can be added savings here.

[4] Impact on Public Assistance - While the tax cut generates a substantial amount of additional employment and earnings, our analysis suggests that increased aggregate demand induces only small reductions in Food Stamp and AFDC costs. Altogether, the tax cut induces a $42 million savings in the food stamp program and generates only $15 million from AFDC. This implies that if the transition from welfare to work is to be enhanced, it is necessary to develop "targetted" employment programs for welfare recipients. Wage subsidy programs or other forms of special employment assistance will be necessary to move large numbers of families from welfare dependency to self-sufficiency.

[5] Regional Disparities - Our analysis implies that the budget shift taken by itself is not neutral among regions. In particular, the heavy concentration of defense production in a small number of states tends to dominate the change in the interregional distribution of income.

However, once the tax cut is added to the shift in budget priorities, the overall impact of the combined policy appears to be relatively neutral. Defense-impacted states continue to do somewhat better than others, but the variance between states is substantially reduced.

[6] Structural Unemployment and Inflation - While this analysis cannot provide any definitive information on "bottlenecks" in the economy, the changes in employment demand by industry, occupation, and region can be used to point out potential trouble spots in the labor market. For example, the budget shift (without the tax cut) generates demand for nearly 38,000 more workers in the aircraft industry. At the present time there is already a shortage of well-qualified machinists in this industry. The added demand could lead to wage inflation and might produce delays in the delivery of aircraft orders.

On the other hand, the budget shift scenario (without the tax cut) suggests a reduction in demand for relatively lower-skilled workers, particularly in saleswork and farm labor. This could exacerbate the employment problems with limited skills. Whenever there is a major change in spending patterns, there will likely be some short-run adjustment period necessary to train workers for expanding industries and occupations and allow for the smooth transition from declining sectors to other areas of the economy. The model helps to pinpoint these trouble spots.

Conclusion

As we noted earlier in this report, all of the statistics presented here are for demonstration purposes only. The rudimentary nature of portions of the present MRPIS model plus the vintage of some of its data sources caution us against using these results for actual policy analysis. Nevertheless, we believe that the simulations presented here are broadly suggestive of what possible effects changes in budget priorities can have on the economy. Improvements in the present model should make the MRPIS system substantially more useful as an evaluation and planning tool.

FOOTNOTES

[1] Calculated from Philip M. Rita, Eugene P. Roberts, and Paula C. Young, "Dollar-Value Tables for the 1972 Input-Output Study," Survey of Current Business, Vol. 59, No. 4, April 1979, p. 67.

[2] Charles L. Schultze, "Economic Effects of the Defense Budget," The Brookings Bulletin, Vol. 18, No. 2, Fall 1981, p. 4.

[3] Ibid.

[4] A.F. Ehrbar, "The Battle over Taxes," Fortune, April 19, 1982, p. 63.

[5] U.S. Bureau of the Census, Statistical Abstract of the United States 1980, Table 432, p. 259.

[6] David Rogers and Thomas Oliphant, "The Reagan Shift: Arms First", Boston Globe Special Report, January 18, 1982.

[7] Marion Anderson, "The Empty Pork Barrel", Public Research Interest Group, Lansing, Michigan, June 1974, p. 13.

[8] Statistical Abstract of the United States op. cit., Table 939, p. 561.

[9] "How Stimulative is Fiscal Policy?" Business Week, January 25, 1982, p. 85.

[10] These consumption patterns are based on an analysis of 56 commodity categories generated from the 1972-73 Consumer Expenditure Survey. The original work on this analysis was performed by Kevin Hollenbeck as part of the development of the RESIND model developed by Robert Haveman and Fredrick Golladay at the Institute for Research on Poverty at the University of Wisconsin. For a discussion of the estimation process used to generate marginal budget shares, see Fredrick L. Golladay and Robert H. Haveman, The Economic Impacts of Tax-Transfer Policy (New York: Academic Press, 1977), Appendix D, pp. 141-146. The original set of marginal budget shares was adjusted by the SWRI research staff to smooth major discontinuities between income classes and then renormalized.

[11] The "non-defense" federal government final demand vector in both the MRIO model and the BEA U.S. Input-Output Accounts includes spending for military foreign aid, for this is governed by the State Department rather than the DOD. For this reason the largest components of non-defense spending appear to be ordnance and aircraft. To rectify this condition so that the simulation reflects "civilian" rather than non-defense cuts, the final demands for these two industries were left unchanged. In addition, the reduction in the radio and TV industry (which includes radar, sonar, etc.) was reduced by half from 6% of the change in final demand to 3%.

[12] In fact, the changes in the AFDC and Food Stamp programs in conjunction with the shift in federal procurement activity leads to a high degree of turnover in the caseload. According to simulation #1, the transfer program changes alone resulted in 722,900 case closings, but 651,300 new openings.

[13] In the present MRPIS Level 1 model, non-labor earnings are assigned to aggregate income groups by a fixed formula. These are not assigned to individuals on the household records and therefore we cannot estimate the demographic distribution of these earnings. Hence in these tables, family disposable income excludes non-labor earnings.

APPENDIX I

Assumptions in the MRPIS Level 1 Model

As with any model, there are many assumptions built into the structure of the MRPIS simulator. These can be addressed in terms of the four main components of the model.

The household sector keeps track of the demographic and economic characteristics of the households in the micro data base (20% of the SIE) and processes each household through a series of tax and transfer subroutines. The subroutines for federal and state income taxes, FICA, AFDC, GA, SSI, and Food Stamps are derived from the ASPE versions of the TRIM and MATH models. An additional subroutine for unemployment insurance benefits was developed for use in the MRPIS system. At this point in model development, this routine is based on a simple "earnings replacement" algorithm which assumes that UIB benefits equal, on average, 40 percent of lost wages.[*] For those who already received For those who already receive some UIB transfers during the survey year, additional hours of unemployment result in adding UIB equal to .40 times the straight-time hourly wage rate. Workers who are assigned more hours of work in the course of a simulation have their UIB benefits reduced at this rate, if they were

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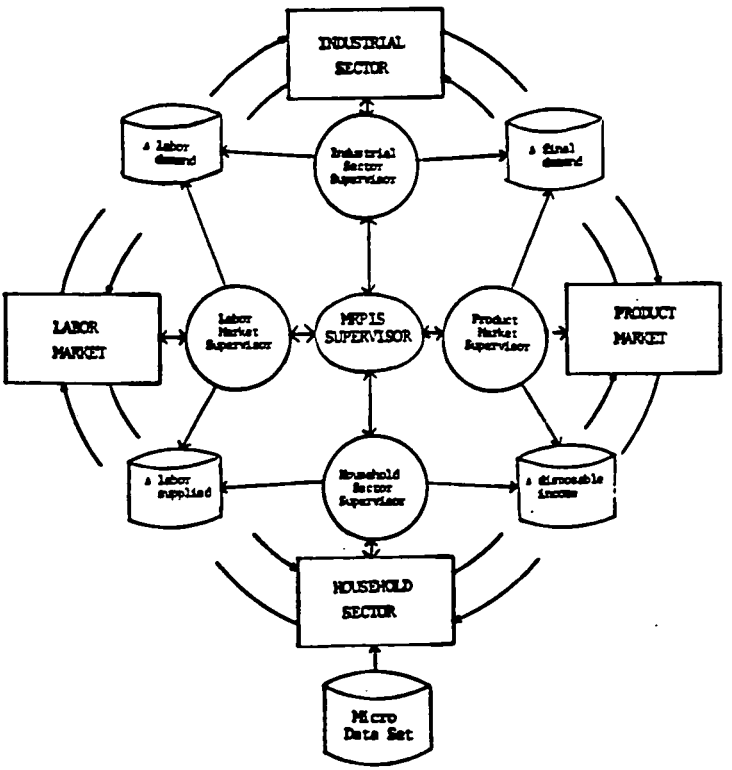
[*] For estimates of the "replacement ratio", see Wayne Vroman, "State Unemployment Insurance Replacement Rates in 1980," The Urban Institute, Working Paper No. 1280-5, August, 1980.

Level 1 Computer Model With
Linking Data Sets



receiving any UIB in the initial round. Any worker who was not initially receiving benefits must be unemployed in the model for 40 hours or more before they begin receiving insurance transfers. These assumptions very likely distort the actual distribution of UIB, for there is no cap on the total amount of benefits allowed to a worker and no variance in benefits among states. The first problem is relatively minor because in no simulation under contemplation here would a worker be made unemployed for more than 26 weeks and thus exhaust benefits. The second problem is much more severe because of the large differences in state programs. A substantially improved UIB simulator will be incorporated in future versions of the MRPIS model.

The product market in the model is used to translate changes in family disposable income into changes in consumption demand for 56 commodities. The present MRPIS model implicitly assumes the same consumption pattern for all households in the same income category. There is no variance with regard to family composition, the age of family members, or region. Moreover, in-kind transfers in the form of Medicaid, Medicare, Food Stamps, and subsidized housing are not included in the Consumer Expenditure Survey that provide the raw data for the calculation of commodity-specific budget shares. Hence the model implicitly assumes that two families with the same nominal income, but different access to Medicare, for example, spend the same amount on health care out of an additional dollar of disposable income. This assumption is obviously wrong, and we have no estimate of how much this might affect final results. Note also that the marginal budget shares used in these simulations refer to 1972-1973

expenditure patterns before the period of energy price inflation.

The business sector in the model is represented by the 1963 Multiregional Input-Output (MRIO) model which includes information on 79 industries in each of 51 regions (the 50 states plus the District of Columbia). The MRIO appears to provide reasonably accurate results, despite its underlying assumption of strict "linearity" in terms of inputs and outputs. Linearity means that no matter how large or small the change in final demand, it will always be satisfied with the same proportion of inputs. Hence, to produce $1 million worth of additional automobiles requires the hiring of more auto designers, even if in reality all that is done is to add a few more assembly-line workers to the production process. This assumption of strict linearity may very well bias in unknown ways the employment demand relation in the model. The vintage of the MRIO obviously biases the results, but again we have little information on how or how badly. At present a 1977 set of MRIO accounts are being developed.

The labor market in MRPIS was developed from the ground up by the MRPIS research staff. It assumes a job competition model with fixed wages. All adjustments in the labor market are therefore carried out in terms of quantity rather than price (wage) adjustments. In the Level 1 model, there are four aggregated industry groups; four aggregated occupation groups, 51 regions, and 17 employment status groups. Each worker is assigned to one of these IORS categories based on his or her employment in 1975. In assigning added or reduced hours to individuals, we assume no mobility between IORS categories. This is equivalent to assuming no interstate migration and no mobility

between broad industry and occupation categories. Hence if the model simulates an increase in the demand for operatives in a durable manufacturing industry in Ohio, only operatives from durable manufacturing industries located in that state will be eligible for additional hours of work. This is obviously a (very) short-run assumption. However, because of the level of industry and occupation aggregation in the model, this assumption of immobility is not particularly restrictive. A Michigan autoworker, for example, can be given additional hours of work in the state's steel industry.

The employment status groups refer to whether a worker was working full-time or part-time, full-year or part-year, and whether any unemployment was voluntary or involuntary in the base year. Additional hours of work (or reductions in hours) are assigned to individual workers in the MRPIS model based on their employment status group. In the present version of the simulator, additional hours are first assigned to workers who experienced involuntary unemployment in 1975. If there are sufficient hours to be distributed, overtime hours are eventually assigned. The hierarchy implicit in the hours assignments is identical in each IOR group and is based on a priori theory, not empirical analysis. In future versions of the MRPIS model, additional flexibility will be incorporated into the labor market structure. For the time being, it is sufficient to note that the assignment hierarchy does not distinguish workers by reason of age, race, sex, or educational attainment. This assumption can be easily relaxed in future modeling.

Representative REUSS. Thank you very much, Mr. Bluestone. Mr. Zysman.

STATEMENT OF JOHN ZYSMAN, PROFESSOR, UNIVERSITY OF CALIFORNIA, BERKELEY

Mr. ZYSMAN. One of the fates of having a name that begins with "Z" is you end up last in many of these situations and therefore learn quickly how to be brief.

Representative REUSS. Well, you've been very patient as we went from A to Z, and take as much time as you want.

Mr. ZYSMAN. It's a great privilege to appear before you. Like the other people here, I've been working over the last years on issues surrounding foreign and American industrial development. The most recent of those pieces is in fact a document that was brought out by the Joint Economic Committee, as you probably know, on United States-Japanese competition in the semiconductor industry.

We can talk about a number of those industrial sectors in the conversation that I hope will follow. Let me very rapidly present to you an outline of my prepared statement. In fact, to try and help you through this, I've in fact passed out an outline of the remarks here that I want to make.

Let me say first of all that it's clear, not only from before but from this conversation as well, that industrial policy emerges in a real sense from a commitment to promote consciously the development of American industry and its position in international markets.

We need a recognition that proper aggregate policies, though a prerequisite for economic revitalization, do not in themselves ultimately provide the basis for a sound expansion of the American economy. And all of us here today seem to be suggesting recognition that proper policies for industries of all sorts must ultimately rest on an analytic understanding of the conditions that assure competitive advantage for American firms in international markets.

Now all of our remarks implicitly assume the present policies have very serious shortcomings. Let me simply articulate what I think those are.

First of all, it strikes me that existing policies are fundamentally protectionist and defensive in character. When American industries find themselves in difficulty from foreign competition, the standard response in almost every instance is one form or another of protection. When in fact we have industries with large employment with large strategic interests we respond to the difficulties they get themselves into. We have a series of industrial policies, but they are in fact based not really on an analytic understanding of what we need to do but on the political pressures of the day. When the political pressures of the day are felt without government having its own conception of where it might want to take industrial development, without that basic kind of understanding, the result clearly is protection.

The second major shortcoming is that we do not have any means of assuring over the long run the infrastructure that firms, both in mature sectors and most importantly in growth sectors will require to expand and grow over the years.

Now we've had the luxury over the last decades to build that infrastructure on a piecemeal basis. Because of the pressure of foreign competition, that luxury of choosing our own pace of firm and national investment in these growth sectors is no longer available and we really need, in research and development, in manpower and capital provision, to be able to plan that over the future.

The last major weakness is there really is no easy way currently of reconciling the public interest in competitive firms with the other kind of competitive public purposes that government must and will pursue. In the absence of industrial policy, we often end up with what strikes me as a hopeless argument between public purposes—social purposes if you will, defined as the overriding public goals such as environment—and supposedly private interests of corporate competitiveness and profit. And it strikes me that in the long run we don't really want to be in a situation of choosing between those two. We need to be able to do both as public purposes and industrial policy strikes me as a means of reconciling those.

It strikes me these weaknesses are particularly significant because developments in the world economy at the moment really press and require new innovative policies. First of all, the United States is being pressured in many sectors by the developmental policies of other governments. By developmental policies, I mean policies that are intended in the short run to promote the competitive development of specific sectors with the long run intent of providing and assuring the industrial base required for the expansion of the whole economy.

Now I think that one of the outcomes of the last year's experience from looking around the world is that unlike our previous assumption, that when governments intervene in markets they fundamentally and inevitably distorted them, we're starting to see the fact that governments can, in alliance with industry, create comparative and competitive advantage for the firms.

Whether the story be the one we told in the report to your committee on electronics, or whether it be the story of aircraft or the story of automobiles, it's clear that the patterns of comparative advantage are created by coordinated policies of private and public investment.

Second, we're being pressured by labor intensive production from newly industrialized countries.

Third, slow growth in general makes the political problems of achieving the small micro adjustments that underlie aggregate growth all the more difficult. Dislocations result from economic change. That's not new. Nor is it new that the political resistance to those changes will in time find support in governmental policy. That's not new.

The fact is that during a period of slow growth, we can all the less tolerate that because we have a great need to assure a flexible factory and a mobility of resources. That's also true.

That problem is that people really are hurt during these periods and, therefore, the question becomes, how do we adopt policies that, on the one hand, in a real sense, assure the flexibility and mobility we need in the economy while, in some sense, providing for the people who are being damaged by the very changes we are trying to provoke?

It strikes me that industrial policy in many countries is a way of attempting to reconcile these economic and social objectives. The technical mechanisms of carrying out many of these policies I might

add strike me in most cases around the world to have followed rather directly from the basic political commitment. It strikes me that the basic political commitment is the most important thing. The techniques for carrying out these policies are something we can all find ways of doing.

Fourth, I believe the economy in all the advanced countries is really being reorganized around new advanced sectors such as electronics, in the future, biotechnology, if you like, but right now, let's focus on the electronics case.

Those countries that successfully and quickly and innovatively take advantage of the new possibilities for products and production technologies that these sectors imply are likely to enter a new stage of industrial development. The rest risk being left behind. I think that's very clear in a detailed look at something like the automobile sector. You look at what's going on in the automobile sector very closely and you'll discover that it's not simply that the Japanese firms produce more cheaply; it's not simply that their cars in some sense have achieved a reputation of being of better quality; it is more basic. It is that fundamentally different production and marketing strategies have been adopted by Japanese companies that rest on different strategies on the organization of production.

Why that's the case, I think we could explain. There really isn't time to attempt that now.

The point is that studies that we've done in the automobile industry, other studies that Mr. Magaziner has done in fact in other cases, really emphasize this reorganization of production as the advantage of the Japanese in many sectors.

Let me simply conclude by saying that industrial policy really is distinguished by the Government's capacity to evaluate the competitive problems of industrial sectors, not by the kinds of policies introduced to solve them.

It strikes me first that Government must provide for the growth sectors the proper infrastructure for companies to expand. The high technology sectors, being from California and not far from Silicon Valley, are something that I pay some considerable attention to. That means that one really needs to assure the adequate resources of research and development and the adequate resources in such things as financing of high technology, expanding high technology companies.

What strikes me as clear is that in the current period, policy has not really attended to the needs to either the mature sectors, such as automobiles, in their efforts to make a transition to a more competitive status, or to the needs of sectors such as the semiconductor or electronics sectors on which the new jobs will have to be based in the future.

Let me simply point to two examples of that. We've all been party to and have been following the decision to break up A.T. & T. I think it's little noted that one of the fundamental outcomes of that breakup will be a basic change in the role of Bell Laboratories. Bell Laboratories has functioned over the last years as essentially a public laboratory providing massive resources of research and development. If A.T. & T. is broken up, Bell Labs must inevitably become a private research laboratory of Western Electric.

The question then becomes, if we want to permit that breakup and that change in role, what public policies do we then adopt to substitute for that?

We can't afford to wait 3 or 4 years and make those choices because in the meantime, aggressive development policies, particularly in Japan, will have made the price of delay extremely high.

Similarly, in electronics, we're now discovering that firms that were successfully started, as Mr. Magaziner has suggested, with venture capital are running into serious problems as they become billion-dollar companies. It is the problems of continuing to expand and intense foreign competition to which no public policies are at this point adequately addressed.

Let me simply say that as we look at the menu of policies that this analysis suggests, it suggests infrastructure, obviously proper aggregate policies, obviously some policies derived toward the particular need of sectors under immediate pressure, but above all, policies aimed at making markets for finance, labor, and research and development work better. In this particular case, we don't really need to solve the problems of the semiconductor industry; we need to solve the problems of expanding industries that are taking enormous risks, and we need to address that. A variety of piecemeal efforts have begun—the research and development tax shelters that we've all come to be familiar with is a first step but it's a faltering first step and serious problems remain.

It strikes me that an industrial policy ultimately—my final remark—really has to be a way of reconciling the needs of the advanced sectors in the area where I now live, in a certain sense to have the resources they need, with the needs of changing sectors and adjusting sectors in the area where I used to live, around Boston, in which very real changes and adjustments have taken place. We can't have a set of social policies or adjustment policies that lock us into the industries of the past and we can't simply go forward without attention to what we're dragging behind.

The political problem that I really think has to be solved before the technical solutions become evident is what kind of balance and what kind of regional and social deal, if you will, is actually going to be worked out. Thank you.

[The prepared statement of Mr. Zysman follows:]

Prepared Statement of John Zysman

Until the late 1960's the economic debate in the West emphasized the possibility that government could maintain economic stability. The task, it was thought, was to find the right apparatus and techniques to balance aggregate demand against the economy's capacity to supply goods and services. Keynsianism, an effort by government to manage fiscal and monetary aggregates for stability at arm's length in pursuit of macro-economic stability and to avoid more detailed public intervention in the affairs of specific sectors and individual firms, was triumphant.

During the 1970's however the tone of the economic debate became increasingly pessimistic and acerbic. At first fears sprang from specific events: The Vietnam inflation, the Russian grain purchase which pushed up food prices, and the oil crisis which signalled clearly that the age of cheap energy which had lubricated the long expansion was over. It was thought, and still is by some, that the troubles of the advanced countries were the product of this unfortunate conjuncture of seemingly unrelated difficulties. The political debate about the economy changed so dramatically because the late 1960's came to be seen as a watershed, a time when long established growth trends began to change. Attention was suddenly focused on the problem of accomplishing the multitude

of individual changes in production that underlie the aggregate growth figures. Growth, it was observed, involved a continuous evolution in who produced what, how, and for which markets. Firms makes those adjustments, whether they respond autonomously to price signals or are directed to do so by bureacratic instruction. In either case, the continuing adaption to new market conditions requires a flexibility in the factory and the mobility of resources toward new uses. As it became increasingly accepted that the inability of industry to adapt to altered market conditions had contributed to the coincidence of higher inflation and slowed growth, the debate about industrial adjustment was begun. In the United States a call for industrial policy emerged from the growing belief that aggregate policies could not of themselves assure that the adjustment required for growth would continue.

The remarks that follow are drawn from an essay written with a colleague, Professor Laura Tyson of the Economics Department at Berkeley. They grew out of our analysis of a set of industrial sectors ranging from shoes to semiconductors. Our conviction is that while industrial policy is not a panacea, it is certainly necessary as part of the economic policy menu from which this country should draw.

Industrial policies are not a substitute for proper aggregate policies, nor do they offer an easy way to avoid the pains of the industrial adjustment required if producers are to make goods that consumers and other producers wish to buy. Nor can the scope of such policies be extensive. Since a national administrative cannot grasp all the complexities of

the market (nor should it want to) as a practical matter, any industrial policy will focus on broad trends or on the particular difficulties of only a few industries. Moreover, the evident complexities of any single industry should restrain any extensive interventionist ambitions.

There are economic and political circumstances, as we have argued before, that can make an industrial policy a useful part of the government repertoire. There are three broad economic justifications for an active industry and trade policy: (1) responding to foreign industrial policies toward critical national sectors; (2) facilitating adjustment processes for both efficiency and equity reasons; and (3) repairing market imperfections or offsetting market features that are producing specific harmful effects in specific sectors.

There are two political justifications for such policies: (1) shaping existing policies to promote competitive adjustment; and (2) developing policies to reduce political opposition to industrial adjustment by offering alternatives to outright subsidy or protection.

It is essential for any government under the current circumstances to have the capacity to analyze the competitive dynamics of industry. As argued above, there is a disjuncture between the way we think about industry politically and how we must think about it for purposes of making industrial trade policy that makes sense in business terms. And trade and industry policy must reconcile these competing perspectives. Although policy will always be made for political reasons of one sort or another, it must be made to work in

the marketplace. The central question which trade and industry policy must continuously confront is this: on what terms do firms in specific business segments fight for markets, and why are some more successful than others? The capacity to answer this question analytically is essential, whatever the particular policies selected.

Without an independent ability to examine industrial dynamics, government is entirely dependent upon the view of firms and sectors that seek assistance. It will be forced to deal with any industrial crisis on an ad hoc basis, in a panic, without the proper resources to make informed judgements. Such independent analytic capacity is needed not only to diagnose industry difficulties without bias, but also to give legitimacy to policies that may be proposed.

The capacity to analyze the competitive problems of individual industries does not imply that the solution will be sector-specific policies. Sector problems can be clues to flaws in our aggregate policies, and may suggest that we might use policy to improve the functioning of our markets for capital and labor. When we confront either a sector problem or a seeming shift in international trade flows that are of a broad national concern, there should be a clear order for policy preferences: aggregate policies first, policies to improve the workings of markets second, and finally - and only as a last resort - industry-specific policies.

At the very least, this ordering is a practical necessity. There are in fact thousands of different business segments, each with its own complexities. We cannot have industry

policies for all of them. Consequently, every problem that can be resolved at a general level will leave us freer to apply limited resources to the problems that seem to require sector-specific solutions. There is also the real danger that sector-specific policies will highlight the problems of a few sectors to the disadvantage of many others. Thus practical necessity pushes us in the same direction as economic theory - to rely on market outcomes at a macro-economic or sectoral level whenever possible.

The choice of any sector-specific policies depend, then, on the cost of not acting and on the feasibility of assisting firms to respond competitively. In growth-linked sectors, the issue is how broadly a particular sector affects the future of the economy as a whole. Some sectors have extensive linkages to the rest of the economy which are usually very evident. These linkages are often inputs (such as semiconductors) that one sector provides for many other industries, or transportation and communication products (such as trucks and cargo containers) that affect the size of markets. When the pace of growth in such a linked sector can affect the competitiveness or rate of productivity increase in many economic activities, a policy of market promotion may be justified. The aggregate benefits of more rapid growth may be greater than the benefits that could be captured by individual private producers. Since the terms of competition are in flux in such growing industries, policies should be targeted at lifting constraints on growth and expanding markets. In sectors that are in transition, the problem is to assess the likelihood of maintaining national production and employment during periods of dramatic

change and to assure that these changes result in productivity increases. Here externalities -- the costs of an action that are not borne directly by the actor -- are often expressed politically by the resistance of workers and communities to plant closing. It is important to remember that a competitive failure can erode the infrastructure on which a national competitive advantage rests, and that a competitive victory can establish national advantage. In some industries, the total costs to government of helping to reestablish a competitive position and maintaining a comparative advantage may represent a lower total than the cost of assisting the movement of resources to new uses and supporting individuals and communities while the shift occurs. Industrial infrastructure, both physical and social, is often the base on which a competitive position is built. A collapse in a major firm may undermine its whole network of suppliers, as in Britain where the decline of the automobile assemblers has damaged the auto components industries. In these cases, the loss of a potentially competitive firm may result in a change in national comparative advantage. It is important to remember that there are no simple rules for determining beforehand whether to respond to demands for assistance, or whether the policies should be aggregate, market-promotion or sector-specific - though we have contended that the presumption should be against sector-specific policies.

When government decides to respond to business demands for assistance, one objective of its policy must be to respond to political pressures for subsidy or protection with

programs aimed at helping firms move into more competitive positions and then to stand strong against those who cannot. The choice, we repeat, ought not simply to be between a hands-off policy or intervention. Yet without a high-level bureaucratic and political commitment to international adjustment and competitiveness, government policies will be formulated by those agencies closest to the industry and most receptive to special pleading. Our existing system is well designed to support the losers, and to assist with the policies that losers prefer. We must establish bulwarks against foolish antimarket policies and a means of wresting policy definition away from losing firms in declining sectors.

If sector-specific policies are adopted in some instances -- and we have argued that they should be seen as instruments of last resort -- there are three basic premises on which policy must be built into them.

1. Policies of protection should be self-liquidating. If there is any justification for protection, it is that some sudden change by international competitors has left potentially competitive U.S. firms without the time or the resources to respond. Protection, of course, reduces the incentive to adjust, but it does provide the time. Self-liquidating protection is perhaps the only means of maintaining the incentive. Adjustment or orderly exit should be the choices that firms are left with. An alternative, though a politically difficult one, would be product-specific taxes in lieu of protection.

The revenues from such taxes could be distributed among U.S. producers as a tax rebate, providing them with the funds needed to adjust but not distorting their real competitive position. The cost of protection would of course then be extremely visible.

2. Any sector-specific programs that provide specific gains to firms in the name of facilitating adjustment should be linked to obligations to spend those funds on adjustment activities. Sector-specific policies are a statement that under present market conditions firms have failed, either because of mistakes made by the firms, or because of rapid changes in market signals. Therefore, policies must be designed to accomplish very specific objectives. For example, if the externalisties of R and D keep private expenditures too low, then raising firm profits may not increase the overall level of research. Policies must be made conditional upon certain well-defined business responses, such as explicit or extraordinary tax breaks for reinvestment of R and D in a specific sector. The government need not become involved in the details of investment or research choices; it need only frame its policy to assure that the funds are directed toward solving the supposed problem. The public policy justification of a subsidy or protection is lost if the funds are used for some other purpose. If firms find the conditions placed upon such support unappetizing, it may discourage special pleadings.

3. Technical advisory boards or oversight boards for sector-specific policies should be drawn from a wide community. One reason for this is that cooperation between labor unions and the community will be required for successful adjustment, and these groups will need to be included at the outset. Another and equally important reason is that in the case of intermediate goods such as steel or textiles, the self-interest of producers can be balanced against the expertise of users.

In conclusion, the central economic challenge of the 1980's is the stimulation of supply rather than the management of demand. At the macro level, the goal is to promote production by allocating resources to their most productive uses. At the micro level, the goal is to enhance the competitiveness of business and ensure high wages and safe jobs for labor. Liberals and neo-conservatives share these goals and even agree on some of the general policies required to achieve them. Taxes should be adjusted to encourage savings. Without sacrificing the public interest, regulation should be minimized to reduce production costs. Energy-saving production processes should be encouraged by financial incentives.

Some analysts not only limit their focus to the supply side of the economic equation, but also insist that if government were to stop tinkering with demand and regulation, the market alone would solve supply problems. They see government as the villain behind today's economic difficulties. Such a simple diagnosis is attractive, but reality unfortunately

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is rarely very simply. During the past decade, supply problems have indeed intensified throughout the industrialized world. The cause, however, is not an increase in governmental villainy or stupidity, but rather genuine changes in real economic conditions, including higher energy prices and changing patterns of comparative advantage. Neo-conservatives underemphasize the significance of these real economic changes, and argue that an unfettered market system can solve our economic problems. Neither economic performance in the United States prior to the New Deal nor contemporary economic performance in the most successful industrial economies, such as Japan, Sweden, or Germany, supports this view. Markets failed to guarantee growth and resource utilization during the Great Depression; and strategic government intervention and comprehensive social welfare programs, rather than free markets, have been the engines of economic success throughout the advanced industrial world.

Government can employ a variety of tools to stimulate productivity, innovation, and efficient use of resources. These tools include aggregate policies to increase savings and investment; market-promotion policies, such as sponsorship of industrial research and development and the retraining and relocation of workers in "sunset" industries; and in some cases, sector-specific policies such as the selective use of procurement. Such approaches can involve the financial and administrative participation of business and labor, but there is economic justification for the participation of government as well. For example, because the social gains from research

and development frequently exceed the private ones, government funding is both necessary and socially desirable. Similarly, government retraining and relocation programs can facilitate the movement of workers from low-productivity to high-productivity industries, thereby limiting the structural unemployment that would normally ensue. Finally, government programs can improve our international competitiveness, which has suffered from the industrial and trade-promotion policies of foreign governments. The adverse impact of such policies on U.S. competitiveness is painfully evident in industries such as steel and consumer electronics.

Perhaps the most compelling reason for adopting supply management policies rooted in an understanding of the dynamics of competition is this: in their absence, political coalitions will thwart the transfer of resources made necessary by changing economic conditions. Change in the distribution of resources among firms and industries will always invite political pressure. No company or industry will calmly accept its own demise as a sacrifice to be made in the national interest. When it sees itself threatened it will agitate for government programs on its own behalf, and such programs will tend to be protectionist - they will tend to retard socially desirable decline, to increase costs and prices, and to be damaging to international competitiveness.

Political coalitions to promote structural change in industry are required to avert protectionist policies and alliances. Such coalitions should guarantee collaboration between government and business and at the same time serve the interests of a population much broader than businessmen and bureaucrats. A national industrial policy can be just such an involvement.

Representative REUSS. Thank you, Mr. Zysman.

As was said, there is an emerging consensus that there ought to be a consensus and I think inherent in the testimony of all the witnesses today is the idea that there ought to be some entity charged with riding herd on the industrial policies of this country.

Some talk about a revived RFC. Some talk about an Industrial Development Board or an Advisory Board or a born-again Federal Reserve, whatever. Suppose there were such an organization and suppose—and this wouldn't be a bad idea at all—you five gentlemen were members of that five-person Board. Let's just give you a couple of lines of Mr. Adams' testimony and ask for your views on it.

Mr. Adams says in his prepared statement that we need a perspective on American industry. He say it should try to evaluate where the comparative advantages of the U.S. economy lie—should we develop as a service economy, should we make use of our comparative advantage in agriculture, or should we aim for an economy focused on high technology and manufacturing?

All right. The Board will come to order and emit its first policy prescription. What should we do? Who wants to start? Chairman Pro Tem McAdams.

Mr. MCADAMS. My answer is that definitely we stick with the one sector of our economy which has a national policy that is functioning—agriculture. We should not move back from it. The world needs food and we're the best producer. By all means, we should stick with it and maybe we should stop paving our farmland and we should also find ways of avoiding the loss of top soil and things of that kind which are hurting us in the long run.

There's no question in my mind but that we need to move into the high technology areas and that we do have a comparative advantage there. We have been the creator of most of the major new industries that people are talking about and we hopefully will continue to be the creator of new industries. But we do need to have the ability to follow through in those industries where we have once created something to see that we don't lose it. We're certainly in tough shape in semiconductors today with the Japanese providing between 70 and 80 percent of the 64–K chips for memories; that is a disaster for the current and future positions of the American semiconductor firms.

I don't think that we have any way to avoid continuing with a very large service sector, but I think that that service sector can and will develop as a high technology service sector and an information base, computerized service sector.

So my view is that we really have no choice but to do all three of those and there's no way that we can do any of them well without an industrial policy. In one we've got it. In the other two we don't. And we certainly need it.

Mr. BLUESTONE. I think the major thing that I'd like to see such a Board do is basically to rationalize what we have already and see what can be done. For instance, in the deliberations over the accelerated cost recovery system, new so-called depreciation guidelines, I am sure that while some thought went into designing that ACRS system it was not part of an overall industrial policy. The result is that it's not clear whether the goals of industrial policy, if we were to see certain industries in trouble or certain industries that should be given greater incentive, are actually aided by this.

A recent study by the Treasury Department which was reported quite beautifully in Fortune magazine points out the differences between the new law and the old law in terms of effective rates of taxation on new depreciable assets. It turns out that services and trades which tend to use long-term capital do not gain very much from this bill. The machinery industry is not a major gainer, and yet one would think that machinery is something that we need more of and more advanced types of. The agricultural sector actually is not a major gainer.

On the other hand, mining is; transportation is. In fact, both of those industries end up paying negative effective rates on their depreciable assets.

The point I guess that I would want to raise as a member of such a Board would be, whenever we're contemplating such legislation—tax legislation, regulatory legislation—what we do with the Export-Import Bank has more to do with the survival of the aircraft industry than perhaps anything else we could think of today.

We would want to do economic impact analyses of each one of those policies and see whether it isn't possible to integrate our thinking on those things. On the basis of such analysis and information, I think we could then develop better industrial policy in terms of tax law, regulatory law, transfer policies, subsidies, banking policy, and so forth. But that's the first step and we're not even there yet.

Representative REUSS. Any other comments, Mr. Adams?

Mr. ADAMS. Well, first of all, I would like to say that I like the way in which you pose the question because it does seem to me—and I'll exempt myself from this comment and look only at my colleagues—that this is a question that should be addressed by a board of wise men, that we really do need an institution in this country which is not within the executive office of the President and which is not necessarily simply a tripartite or quadripartite group with large numbers of representatives but, rather, a group of people who are engineers, scholars, and wise men who can look ahead and can tell us a little something about what the perspective of our development ought to be.

Now I'm very much inclined to agree, on the one hand, with Mr. McAdams that we are going to answer all those three questions I posed with the notion that yes, indeed, we want to have an economy that takes advantage of agriculture, that has a great deal of service, and that has high technology; but I think we need to ask in a long-term view, 20 years from now, if we do everything right, what is the one factor that we have in this society which is in some sense unique or which will allow us to be unique. I suspect that is the high level of engineering, technology, education, and something along those lines.

And I suspect that will mean that we will want to develop industries, whether they are formally manufacturing industries or whether they're services I don't worry too much, that will take special advantage of the high educational and technology aspects of our society. And I might add, in that connection, I'm somewhat less concerned than Mr. McAdams about the 64–K chips because I think that is a sign of the fact not that the high technology industry has moved elsewhere in the sense that I'm driving at, but rather that mass production industry has moved elsewhere and that certain products that were once highly specialized have increasingly become the products of mass production and that may not be in the perspective of the American economy as we move along.

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Mr. ZYSMAN. I should say I grew up, in addition to living in Boston, in Nebraska, so the issue of support of agriculture is something I grew up with, but I do think in fact in industrial policy the problem in some ways is starker and simpler. On the one hand, we're really not going to be engaged in general indicative planning. I think we're going to have some very basic choices and I think they're going to break really into two parts.

One set of choices is going to be around what we do about the growing industrial sector, expanding sectors, which some label the engines of growth that a couple of generations ago were calling growth links and link sectors here.

The issue in that case really becomes the fact that we risk being engaged in unilateral economic disarmament in a sense of not providing the resources we need for those sectors. I think there the kind of policy that we need really is focused on identifying very specifically the infrastructure and the kind of techniques that make markets provide for the companies what's necessary. I don't think in fact we're going to have to go in and try to figure out whether National Semiconductor or Intel Corp. is going to be more or less successful. I think, on the other hand, we really will have to make a decision as to whether or not we think that mass production of commodity chips of memory devices is essential. I really take the floor here to underline that in fact I think one cannot survive in the components industry without a position in mass production of commodity random access memory devices and if one does not sustain successful commodity production of semiconductors one in fact endangers that whole long line of industrial development.

But whether we agree or disagree, I think we would in fact agree that those are the kind of choices that we need to make about the growth sectors.

In the case of transition sectors—automobiles, textiles, and so forth—that are in decline worldwide, the problem is very different. The problem is how do you get the firm back on its feet or how do you in fact phase out people who are on their way out.

In that particular case, I think one of the choices the Germans have made might very well be attractive to us. The Germans put the development of their growth sectors in the hands of the Ministry of Technology. This is assuming that what in fact companies are asking for is really going to be a fair indication of what the public is going to need and ought to be provided. In the case of declining sectors or sectors in difficulty, to the extent that the public sector is involved, they really place the situation in the hands of the Ministry of Finance which is ardently opposed to intervention. Therefore, in fact, when for social reasons one is obliged to intervene, the issue of the use of the Fed, which is one of the dangers of the use of the Fed, is it's institutionally committed to arm's length policy. The question is, can you in a real sense reform that institution sufficiently to make it into an instrument of industrial policy?

On the other hand, in the case of declining sectors or sectors of transition where your real intent is not to subsidize these sectors forever, it seems to me that's a place where administration of policies, anathema to the people conducting them, can in a very funny way lead to an interesting balance. So I think we don't need to solve the general problems of the economy. We do have to face the problem of what do

we need to provide the growth sectors. We need to find ways of making rational choices about the problems that we face in sectors that can be reconstituted on a competitive basis and the social problems that result from those that can't.

Representative REUSS. Mr. Magaziner, I want to recognize Congressman Richmond, but if you later want to assume the pulpit, you're welcome.

Representative RICHMOND. Thank you, Mr. Chairman. I certainly want to congratulate you for having the perspicacity to organize this hearing.

You're one of the few people who really recognizes the need for facing the incredible mess we're in today and I want to congratulate you for inviting these fine groups for panelists.

Professor McAdams, just to correct a misconception you have, MITI, as you obviously know, is just the tip of the iceberg. MITI is wired into the Ministry of Finance, the banks, the insurance companies, which are wired into industry. So while MITI has only a very small budget, MITI is the absolute autocrat of Japanese industry inasmuch as MITI can tell the Fuji Bank to either loan money to one of Fuji's companies or not loan money to one of Fuji's companies. And if we had the situation in this country where you had unlimited funds at 5.25 percent I think perhaps you'd see a little different attitude by American businessmen about reinvestment.

One of the saddest things I've seen is the fact that we have finally modernized the American tax code, which we should have done 20 years ago, and much to my amazement, instead of the American businessman using that modernization of the Code by improving his assets, he's down considerably. I think the machine tool orders were off 50 percent and it's frightening.

So let's understand that the Japanese have a totally controlled industrial policy just like we have a totally controlled agricultural policy, and I certainly applaud your intelligence and your understanding of our agricultural sector because that's the one sector in this country that's efficient.

Now Mr. Bluestone, what you say about the Pentagon is very interesting, the fact that we're only paying 16/1000th of a quarter of 1 percent on examining the Pentagon. You have to realize that the Pentagon literally answers to no one. So if we spent a billion dollars giving good, sound advice on how to clean up the Pentagon, what's the point of it? They want a continuation of the money as they have in the past and we'll continue being under pressure to rubberstamp everything they do. So we have to face the fact that the American people have just got to get up and push for some major changes in this country.

Obviously what we need is an RFC. If somebody in this administration would just read a little Roosevelt history, they'd see how to fix up this country. We need an RFC desperately, along with a WPA and a CCC.

If we had a rational industrial policy in the United States, if we had told United States Steel you cannot buy Marathon Oil with $6 billion, and instead said, if you take that $6 billion and you put it into your antiquated old factories which are so far behind the times, then we'll give you $3 billion for 20 years at 9 percent, that might have been a constructive way to finally begin modernizing the steel industry.

We need an RFC and a system of challenge grants. Giant corporations like Kennecott and Anaconda don't have enough money to build a modern copper smelter in the United States. They have to ship their copper ore to Japan to be refined and then the ingots come back to the United States. What an economic insult that is to the American people, to think that we in "Japan's colony" mine copper up in Montana and yet we have to ship our copper all the way over there for smelting and return.

Now, if we had an RFC we could say to Kennecott and Anaconda, open up a cooperative smelter and we'll provide you with an additional dollar for every $3 you put up. This is what we need so badly in the United States, but what we first have to do in the United States is to increase the awareness of the American public.

Here our President is trying to spend $1.5 trillion on defense in the next 5 years. Now what good is $1.5 trillion on defense when we have antiquated steel mills, antiquated shipbuilding facilities, antiquated electronic facilities, when we have to import our ball bearings from Sweden? What incentive do we have in the United States? We are going to take $1.5 trillion of your money and mine and throw it into the Defense Department where much of it will be wasted, when in case of war—and obviously that's why you put up the $1.5 trillion—we would be hard pressed to fight a war because our total industrial base has become so eroded.

Now has anybody got an answer to my various unpleasantries? You've got to make it brief because I know the chairman would like some time.

Mr. BLUESTONE. I guess I'd just make two very short points. One, the copper smelter question in Montana is an interesting one. As you may know, the major copper smelter in Montana was bought out by Arco. Arco then closed it down and the whole town on Anaconda, Mont., and now that smelting is done in Japan.

We have to have an industrial policy that looks into those things before they occur.

Representative RICHMOND. An RFC could say no you can't and, if you don't, we'll loan you x dollars to modernize that smelter and we'll give you some special legislation to facilitate cooperative ventures and we can make that smelter into an efficient cooper smelter.

Mr. BLUESTONE. We certainly have to take a look and see what could have been done in Montana.

The second point has to do with the RFC. We certainly need an industrial policy. Whether it should be patterned after the 1930's RFC I think is a very serious question. The person who wrote best on this turns out to be Will Rogers, our great American humorist. He looked into the RFC in the 1930's and said, it's too bad that money isn't like water. He said, "Water runs downhill and water is everything. Unfortunately, money is like gold. It runs uphill and ends up with Papa J. P. Morgan." When you look into what the RFC first financed in the 1930's it turns out that the very first grant given to any organization was a grant given to the Bank of America, now the largest bank in the country. The second went to the Von Swearingen Brothers who were the owners of the largest railroad in the country.

But the real question is, can we develop an RFC which in fact has a democratic decisionmaking process so that we get money to act like water rather than acting like gold?

Representative RICHMOND. Or like molasses, so it will spread around. Any other comments? Do you agree with my dire predictions?

Mr. MAGAZINER. I think one thing that I have seen in the last couple of years more than before from a lot of American companies is this whole question of looking to the source rather than replacing the manufacturing facility or modernizing it. In the whole range of industries that we've worked in that are final product industries, it's becoming much easier and much more attractive in the short term to say this plant is outmoded rather than put in the $40 to $50 million to retool the components in this plant. Why don't we just look and see where else we can get this, and set up a purchasing thing and we get a very good payback on that and let's do it. That's been a very startling trend and I think it's important to what you're saying. That's the kind of thing that we've got to arrest because that in the long term really runs down the whole manufacturing.

Representative RICHMOND. Aren't you all frightened by the fact that we're spending $1.5 trillion on defense and nothing on rebuilding our industrial base?

Mr. MAGAZINER. Yes, I'm frightened by that.

Representative RICHMOND. And we can't build a ship in the United States and we can't produce steel efficiently. I mean, the two most basic things that you need in defense, shipbuilding and steelmaking. We can't do either one any more, efficiently.

Mr. ZYSMAN. That's why I referred to it as unilateral economic disarmament. I think that we are rearming in one sense and disarming very quickly in another.

Representative RICHMOND. Again I commend our chairman for leading the way—he's always well ahead of everybody anyway—as hearings like this help lead the way toward getting this country to recognize the serious condition we're in. I am convinced that the United States is, in fact, a Japanese colony. We are in truth a colony and I just hate to see it. I hate to see us think of ourselves as a superpower when every year we become less of a superpower. I'm sure you all agree with me, too, unfortunately. Does anybody disagree?

Mr. Chairman, thank you very much.

Representative REUSS. Thank you, Congressman Richmond.

Back to Mr. Bluestone, going over your very interesting material, I want to see whether I've got you right.

It seems to be a fact—correct me if I'm wrong—that the administration's economic program in its totality has two States who are particular darlings; namely, California, which grows hugely, and Connecticut. Those are the two favorites of the Gods, is that not so?

Mr. BLUESTONE. Absolutely. If you decide to build an economy on the aircraft industry——

Representative REUSS. Those are the States of Ronald Reagan and George Bush.

Mr. BLUESTONE. If you decide to build an economy on the aircraft industry, given that many of our industries—like aircraft, like auto, like electronics—are regionally specific industries, you're going to find massive aid in those industries.

What's interesting, though, in California is that the gains in California are not equal. You do very well in the Long Beach area but if you were to look inside the State of California, the change in spending is such that it hurts the agricultural sector. So migrant farmers may

have some trouble in the State while you will have blue collar machinists working at McDonnell Douglas and Lockheed in the Long Beach area working 70 hours a week. There's something crazy about that and yet we've never looked at it very carefully.

In our study on the aircraft industry that we did a couple years ago as part of a project on New England economic development funded by the Economic Development Administration, we found, first of all, that throughout all of New England the aircraft industry is the No. 1 employer and part of the reason why we expect to see a continued renaissance in New England, at least in some of the social indicators, is because of the tremendous amount of money going into United Technologies Corp., in particular, which is the parent to Sikorsky Helicopter and Pratt & Whitney, the jet engine manufacturer—premier jet engine manufacturer in the world. That will help the economy of Connecticut and to some extent Massachusetts. It certainly is not going to help my hometown of Detroit, Mich., where they happen to produce cars rather than jet engines.

Representative REUSS. Sweeping generalizations are always something to avoid. It would be true, would it not, that under the present program, if you want to be happy, live in Connecticut or California, except for the central valley?

Mr. BLUESTONE. That's approximately correct. You also have to have the right set of skills for those industries. One of the problems we have in Connecticut—in a study we're just finishing this summer on Hartford—is at the same time we have a terrible skill shortage among blue-collar machinists. After all, they were trained as part of our industrial policy in World War II and we trained a very large number of machinists so there was no need really to train any more during the 1950's and 1960's. Unfortunately, like the one-horse shay, they all retired sometime at the end of the 1960's and the 1970's and we now have a terrible shortage of them.

At the same time, in Hartford, Conn., across the river from the largest jet engine manufacturing facility in the world, the unemployment rate among black teenagers is reputed to be in excess of 70 percent.

Representative REUSS. I look now at your table of losers and ask you what are other agricultural products, other than what?

Mr. BLUESTONE. Other agricultural products in this case refer to things like meat products, the cattle farms and so forth. The main agricultural products are things like wheat, corn, and so forth. In this model this refers to some types of fruits and vegetables and I believe some form of livestock production.

Representative REUSS. Well, why should they experience a decline, meats and vegetables? Won't the happy defense workers of Connecticut and California, and so forth, gobble up their share?

Mr. BLUESTONE. I presume that they will gobble up more beef and more pork. Unfortunately, because of some of the other cuts here, particularly in the food stamp program and in AFDC, those families in this country who are forced to spend the largest proportion of their income on food have such large cuts in their budgets that they have significant reductions particularly in those commodities.

Representative REUSS. Now trying to distill the bad news here in terms of particular cities, medical and education takes it on the chin.

That's got to be bad news for Boston, bad news for New Orleans, bad news for Columbus, bad news for Madison.

Mr. BLUESTONE. It certainly is. In fact, we did a separate analysis—I don't know if I have it with me here—of a bill called H.R. 850, which was a bill proposed to try and deal with the inflation in health care costs. The idea behind one part of the bill—it has many parts—was to make taxable to the worker part of the contribution by the employer for health insurance. In this case, in 1984 I think all contributions by the employer in excess of $154 per month per family would be taxable to the consumer, thus providing supposedly a large incentive to buy less health insurance. According to the Congressional Budget Office, such a program in the long run would have a 9-percent cut in the medical care sector.

For the Assistant Secretary for Planning and Evaluation we studied the long-run impact of this particular industrial policy.

It turns out—and the numbers are quite startling, but it only suggests how large the medical sector is now—that overall such a 9-percent cut, including all the indirect effects, would eventually lead to a decline of almost 470,000 jobs in the medical sector. The States that would be most affected in this country turn out to be, as you might imagine, New York, which would lose a net of 36,000 jobs——

Representative REUSS. Did you say States or cities?

Mr. BLUESTONE. Well, these are States. The one city I have here is your Washington, D.C., which would lose about 8,000. California, which also has large medical complexes, would lose about 25,000 jobs. And, of course, Massachusetts, which has a very large medical complex, would lose about 17,000 jobs by this program.

So that when you design a particular industrial policy for one sector like this, you're going to have a massive effect. On the other hand, if you spend that money, instead of on medical care, in the form of generalized tax cuts, as one version of the bill would suggest, it turns out that it helps the Southern economy—North Carolina, South Carolina. Georgia, and Mississippi—because they tend to produce more consumption goods not of the high technology medical care variety.

So every policy we have—as you pointed out over and over again in your introductory statement—has a defective industrial policy within it and some of those policies are extremely powerful.

Representative REUSS. To make a couple more specific references, you indicate that wholesale and retail trade suffers and maintenance and repair construction suffers. Those would tend, would they not, not to have a differential regional impact which is simply to say that misery is shared and it doesn't make existing inequalities worse or better?

Mr. BLUESTONE. That's correct. As you might expect, services and retail trade are industries which are spread much more evenly across the country. It is our core manufacturing sector which is regionally specific. Charles Schultz, former Council of Economic Advisers Chairman, testified I believe before this committee sometime ago about the impact of military procurement on the goods producing part of gross national product, and he comes to the remarkable conclusion that if you take that part of gross national product which is in goods producing in manufacturing, you're talking about, between 1981 and 1985—and this is certainly to Mr. Richmond's point—allocating something like 30 percent of all new additional goods production to the Department of Defense.

Given that, according to our analysis of the aircraft industry, that's going to be focused in Connecticut, to some extent Massachusetts, certainly in California, the State of Washington, you're going to see cities like East Hartford, Long Beach, Calif., and Seattle doing very well. To the extent that that means there will be cuts in retail trade because the consumer sector is squeezed, that's going to be spread more evenly across the economy.

Representative REUSS. As you say, the one city which you identified in table 12 is Washington, D.C. Am I right in thinking that your computer has a sad story to tell Washington? It's all bad news. Medical goes down. Educational goes down. Business services go down. Trade goes down. All bad and nothing good.

Mr. BLUESTONE. The one thing that might be helped is the big five-sided building in Virginia.

Representative REUSS. Did you do other cities?

Mr. BLUESTONE. At this point, in terms of our analysis, since this is a prototype of a model, we have not had the ability to generate the analysis at let's say the standard metropolitan statistical area level. The basis for this model in terms of the household sector is currently the survey of income and education done by the Department of Commerce in 1975. It has 151,000 random households in it across the country by State. We have for the largest SMSA's substantial data which would allow us to do this.

Unfortunately, we're running into the problem that funding for this project will end prematurely at the end of this summer and so it doesn't appear at this point that we're going to be able to go ahead to get to that level of analysis.

Representative REUSS. I would not advise you to apply to the Pentagon for a supplementary grant, unfortunately; but it's an absolutely fascinating study and I'm glad you've gone as far as you have. We've had first-rate testimony, gentlemen. We're most grateful to you. Do any of you have any postscript which you would wish to add? If any occurs to you the record will remain open. We are most grateful.

The committee will now stand in adjournment.

[Whereupon, at 12:30 p.m., the committee adjourned, subject to the call of the Chair.]

[Mr. Amitai Etzioni, professor, George Washington University, was invited to participate in the hearing, but was unable to do so. He subsequently supplied the following paper for the record:]

Reaganomics, Reindustrialization, and Industrial Policy

(By Amitai Etzioni, University Professor, George Washington University)

Underlying the daily debates on the future of American economic policy are competing conceptions of both what ails the economy and what prescriptions are called for. The advocates of all the varying positions despair, albeit to differing degrees, of the conventional econometric models, Keynesian theories, and policies based on them. All agree that something more is amiss in the American economy than unduly high readings on some indicators (e.g., inflation, unemployment), poor productivity growth, and low savings -- that the problem is more severe than just one more downturn of the age-old business cycle, soon to swing up again. All concur that the recent inflation is not merely or even mainly demand-driven (or OPEC-caused). All agree that the foundations of the American economy have weakened and need shoring up.

I. THREE POSITIONS ON GOVERNMENT/ECONOMIC RELATIONS

The differences are best viewed as divergent conceptions of the proper relationship between the polity and the economy, and where the levers for correctives are. The positions taken do not directly parallel those taken by political parties, or the conservative-liberal dichotomy. They may be arranged, for convenience of presentation, on a continuum from laissez-faire conservative to moderate-centrist to left liberal.

A. Non-targeted: Supply-side Economics

At the laissez-faire conservative end is the well-known position that what ails the economy is mainly an excessive level

of politicization, reflected not merely in an unduly high proportion of the GNP being used and allocated by the polity and excessive regulation of private decisions, but also in the revolution of entitlements, of attempts to deal with all social and many personal needs via the polity rather than the market. Daniel Bell and Irving Kristol have articulated this position, as has Milton Friedman.

The remedy which follows is to reduce the scope and intensity of the polity as much as possible, by releasing resources to the private sector, deregulating, and letting the market do its wondrous things. The most radical of the lot, such as Professor Arthur Laffer, Congressman Jack Kemp, and Senator William Roth, hold that the revenue lost via monumental tax cuts will be restored by the higher tax yield of a more productive economy. Other laissez-faire conservatives, say Milton Friedman, are satisfied to cut back government expenditures and taxation drastically, without assuming a proportionate gain in the economy and tax revenues.

In terms of the second defining issue, where the levers for change are, this approach is wholly non-targeted. It sees no need to direct, aim, or guide the public resources released to the private sector in any particular way. Indeed, freeing them to go wherever the market will take them is the kernel of the approach. This non-targeted approach, supply-side economics, lets private demand work its way, and the private economy respond to it by increasing its capacity to supply what the demand seeks.

B. Targeted: Industrial Policy

At the other end of the spectrum of positions is the notion that, far from being reduced, the polity's role should be intensified. Here the diagnosis is that, compared to other highly successful economies, especially West Germany and above all Japan, American institutions provide insufficient guidance and support for the private economy. The market, it is implied or openly stated, has shown its inability to invest enough in new plant and equipment, in innovative and competitive capacity. Executives have grown risk-shy and dividend-happy. Steel mills, auto plants, the textile and rubber industries are crumbling. Computers will soon face a government-orchestrated attack from Japan, while our industries' response is anemic and divided against itself.

According to this view, correctives are to be found in emulation of "Japan, Inc.," and above all its MITI (Ministry of International Trade and Industry). In other words, the solution lies in government-guided collaborative efforts, in which business and labor pull together, with government bureaucrats and technologists serving as the sources of analysis, tax incentives, capital, and informal if not outright control. Attempts by the Carter Administration, on its last legs, to turn around the U.S. auto and steel industries, following the suggestion of tripartite committees, were viewed as American early-bird industrial policy.

Beyond this, the advocates of this highly targeted approach see the Department of Commerce transformed into a Department of Trade and Development (or some new agency, the Americanization

of MITI) with a desk and a committee for each industry, from ball bearings to industrial diamonds. The trade desk would analyze the industry assigned to it, say, shoes; determine whether it is a winner or a loser, whether it has a promising future, in terms of productivity, export-ability, technology/innovations, labor intensiveness, and other good things in life.

The designated "winners" would be showered with government-provided subsidies, loans, loan guarantees, tax incentives, a measure of protection (as in a trigger price or import quotas), R & D write-offs, and what not. The "losers" would be "sunset." The government might provide the workers with "trade adjustment assistance" to help them move from parts of the country where the losers congregate (Detroit, Pittsburgh) to where the winners roam (the Sunbelt, coal states).

This policy might be called "national planning," but as the term tends to raise fears of creeping socialism, most of its advocates avoid the label, at least as long as their defenses are up. Instead, the term "industrial policy" is in favor. It is quite appropriate, because the assumption is that the unit at which the levers of policy are to take hold is not "the economy," or a major sector, but the specific industry. Also, "industrial policy" is the label used for such detailed government planning and direction of corporate efforts in other countries.

Critics raise three major questions: (1) Do we have the analytic capacity to determine correctly who will be a winner, who a loser? Does not our record suggest that we will misidentify industries and sink vast amounts of public resources in

tomorrow's Edsels? (2) Will our polity, in which the government tends to be weak compared to business, labor, and local communities, especially when these work together for their Chrysler, be able to channel resources to those who merit them by some rational analysis, rather than to those who have political clout? (3) Is the country -- both voters and leaders -- willing to accept more politicization, less reliance on the marketplace?

C. Semi-targeted: Reindustrialization

At the center of the continuum, between supply-side economics on the right and industrial policy on the left, is the conception that what ails the country is over-consumption, public and private, and under-investment, resulting in a weakened productive capacity. Signs of deferred maintenance and lack of adaptation to the new environment of expensive energy can be seen in most of the elements which make up the infrastructure and in the capital goods sector.

The suggested cure is semi-targeted: release resources to the private sector, but channel them to the infrastructure and the capital goods sector, away from either public or private consumption. For example, if we cut government expenditures by $50 billion through across-the-board tax cuts, the funds released might well be used mainly to spur private demand for consumer goods and services; little rejuvenation of productive capacity would occur. On the other hand, if the resources released are guided to the productive sectors of the economy -- not to specific industries -- reindustrialization may take place. Thus, if tax revenues are "lost" not just through tax cuts for individuals

but in part by allowing accelerated depreciation for companies which replace obsolete equipment, or which replace oil-based or energy-inefficient equipment with equipment which is energy-efficient or uses alternative energy resources, the released resources will revitalize, without determining which will benefit: steel or textiles, rubber or rails. The polity will set the context; the market will target.

Similarly, providing tax incentives for greater R & D expenditures spurs on all such efforts; it does not require any government trade desk or tripartite committee to decide which R & D project is desirable. And if workers are provided with productivity-based incentives, so they can share directly in renewed economic growth, Washington need not be involved in determining which group of workers is eligible; this is best done by the management and the workers within each corporation.

Critics suggest that such reindustrialization will return the country to the nineteenth century and focus on "basic" or "smoke-stack" industries rather than on post-industrial high-technology industries. The prefix "re-" does point to a return, but it should not be taken literally. A return to a strong infrastructure and capital goods sector does not require a return to the same mix of specific industries. Thus, communication satellites and data-phones could do the job of the Pony Express and the Morse telegraph, and slurry pipelines instead of barges might carry coal. The return implied is to higher investment and innovation in the productive sectors, not to anachronistic details.

On a second count, though, reindustrialization must plead guilty as charged: it does favor mitigating the criteria of "comparative advantage" with considerations of developmental economics, social responsiveness, and national security. Studies of developmental economics show that a measure of government-provided incentives and support, even short-term import limitations, is often essential for developing a new industrial base; the same might hold for renewing one. Social considerations provide many reasons why we should not export all blue-collar work to Third World countries; to start with -- we have plenty of unskilled labor of our own. National security requires us not to grow so dependent on imported coal, steel, and shipbuilding that we are unable to withstand boycotts or other supply-interruptions.

Reindustrialization thus stands between supply-side economics and industrial policy; it is semi-targeted, and the context it seeks to advance is a stronger productive capacity.

II. TWO ECONOMIC-POLICY PACKAGES

Two main policy positions which competed with each other during the 1980 election provide concrete illustrations of the underlying options. Neither position was cut from one cloth; each mixed elements of the various policy positions.

A. Alternate Public Policy: Carter's Revitalization

Carter's revitalization (named, in part, to avoid identification with any professor's term; "reindustrialization" was the preferred label in early White House memos) mixes much reindustrialization with some industrial policy. Thus, Carter

favored reducing labor costs (by offsetting part of business' contributions to Social Security) and helping replace obsolescent plants and equipment (by faster tax write-offs), two reindustrialization ideas. Programs to retrain workers and thus reduce the resistance to technological innovation were also in accord with reindustrialization. The same might be said about the American Revitalization Board, which aimed to increase general collaboration among business, labor, and the government. Touches of industrial policy were to be found in the suggestion to grant investment tax credits to unprofitable firms, specially tailored to help auto and steel manufacturers, and in industry-specific tripartite committees.

Altogether Carter's revitalization plan hardly left an indelible mark on American political-economic thinking, partly because it was pieced together and released very late in his administration, as other matters overshadowed his policy positions -- especially the situation of the hostages in Iran and Senator Kennedy's challenge. Also, Carter firmly believed that balancing the budget was both the best cure for America's economic malaise and the soundest political posture for himself. Since a full-blown revitalization drive would delay that goal by increasing government outlays and by reducing tax revenue, he preferred an anemic revitalization plan, which had neither economic scope nor great appeal, over a more imaginative, more encompassing, but much more costly program.

B. Reagan's 1981 American Economic Recovery Act

Reaganomics is more ambitious than reindustrialization. It seeks not merely to restore the productive capacity of the U.S. but also to reduce inflation, balance the budget, substantially increase military spending, and change the social profile of the government by doing less for groups which traditionally were Democratic constituencies (such as the poor, minorities, and labor) and more for groups closer to the Republicans (big and small business, and the farmers).

In the following discussions I focus on the steps taken that are relevant to reindustrialization (of which there are quite a few) and their expected consequences for this goal.

(i) New Tax Incentives for Saving and Investment

The best way to encourage a substantial increase in saving and investment, essential if the capital needed for shoring up the infrastructure and the capital goods sector is to be available without savaging other sectors (military, consumption), is to reduce inflation. The way a successful fight against inflation would affect investment is highlighted if one considers for a moment the effects of a few years of declining prices combined with the expectation that they would continue to decrease. With the expectation that one can both collect some interest (probably not more than 2-3 percent per annum, under these circumstances) and buy things more cheaply later, the incentive to save and to invest is obviously very considerable. From this view all the components of Reagan's American Economic Recovery

program are relevant, including deregulation, the cut in government expenditures, the supply-side cut in personal income tax, and efforts to reduce the size of the budget deficit. To the extent that this combination is successful in substantially reducing inflation, it would provide the soundest base for capital formation.

However, from the beginning, the Reagan Administration itself found it unwise, or at least insufficient, to rely only on these across-the-board, generic measures. It topped them with a large set of additional specific measures to encourage saving and investment, which might add to capital formation if the general program works, and might spur saving and investment even if the general, non-targeted measures fall short of their goals.

Reduction in Captial Gains Tax. The first step here was actually taken by the Carter Administration. In 1978 it reduced federal taxation of capital gains realized from assets held for more than 12 months. Before then, 50 percent of such "long-term" gains was subject to ordinary-income tax rates that could run as high as 70 percent; as a result, top-bracket investors might have had to pay as much as 35 percent tax on any net long-term gains realized during a given tax year. In 1978, a change in the law required only 40 percent of such gains to be taxed at ordinary-income rates. That amounted to a 20 percent tax cut for profits on assets held for at least a year.

The 1978 tax cut is believed to have played a significant role in sparking greater demand for equities, one main way capital

flows from savings into investment. The 1981 tax law promises to provide a similar spur to investment. To begin with, for investors in the upper brackets, it further cuts taxes on net realized long-term capital gains by slashing the peak rate applicable to "unearned" income from 70 percent to 50 percent. Result: the maximum tax on long-term gains after June 9, 1981, drops from 28 percent to 20 percent -- a reduction of 28.6 percent, coming on top of the 20 percent tax cut implemented three years earlier.

The volume of added demand for stocks generated by the lower tax rate cannot be quantified to any precise degree, but it could be considerable. Next year, according to some estimates based on Congressional and Treasury projections, the reduction in the marginal federal tax rate on unearned income from 70 percent to 50 percent could save over $4 billion for an estimated 5 to 10 million taxpayers. If only one million investors each bought, on average, $5,000 worth of equities more than they would have in the absence of the new tax law, that alone would mean $5 billion of new money in the stock market.

IRAs and Keoghs. Another boost to investment springs from the new tax law's liberalized provisions for Individual Retirement Accounts (IRAs) and Keogh plans, which permit people to invest more tax dollars for their own benefit. Barron's estimated that nearly $26 billion will pour into IRAs in 1982, compared with $18 billion "sheltered" under the old law.* No-

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* "Up the IRA," Barron's, September 14, 1981.

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body has yet come up with statistics for Keogh plans. But the annual maximum amount that a self-employed person can shelter from ordinary income tax by channeling it into this type of account has been doubled, to $15,000.

From a narrower reindustrialization viewpoint, the Keogh-IRA legislation has a particularly welcome feature that excludes investment in "collectibles," a major and unproductive kind of investment that in recent years has competed fiercely with investment in productive capacity. Attempts being made to remove this stricture should be resisted.

"All Savers" Certificates. An administration-supported initiative by Congress created a tax-exempt savings certificate that can be offered by savings associations, banks, credit unions and mutual savings banks between September 30, 1981, and January 1, 1983. As everybody has been told in thousands of ads, the one-year certificates carry interest rates equal to 70 percent of the rate on a one-year Treasury bill. Single taxpayers can exclude from taxes $1,000 in interest income from these certificates, and couples can exclude twice that much.

Institutions offering the certificates are required to invest three-fourths of them in home or farm loans. (Because the All Savers certificates have been enacted so far for two years only, most of the funds are not suitable for long-term investments and are expected to go mainly to the short end of the market, such as second mortgages and other shorter-term instruments).

From a capital formation viewpoint the All Savers certificates are likely to generate little new saving and might well cause considerable net loss. The reason is that despite the certificates' title, they are advantageous only to persons in relatively high tax brackets, roughly 32 percent or higher. As a rule people in higher tax brackets already have substantial savings, and will tend to shift their funds from other savings accounts to these certificates. For instance, the special difficulties the tax exempt bond sector encountered in September 1981, as people set aside funds for these certificates (within the context of a generally poor bond market), reflected in part the switch to All Savers certificates At the same time, the costs to the Treasury are quite hefty, running at an estimated $5.2 billion of lost revenue over three fiscal years, requiring it to borrow more in the credit markets.

From a narrower, reindustrialization viewpoint, All Savers certificates are even less desirable. The reason is that the thesis of reindustrialization is that we not only need more capital but we need to channel it toward certain broad uses, semi-target it -- specifically, to the infrastructure and the capital goods sector. The number one competitor to this investment in recent decades has been investments in residential housing. While the U.S. invested roughly $16 of every $100 in residential housing in the 1870s, at the height of the first industrialization of America, it invested $32 of each $100 over the past few decades. This was not because "natural" market forces played up this high-cost consumer item, but because various tax benefits, not available

to other investments, made housing the preferred tax shelter. Indeed, according to one report, 22 percent of the houses bought in the seventies were purchased by single persons primarily as a tax shelter. Of course, tax considerations also played a role in the considerations of other home buyers, especially those deciding to buy second houses or larger ones than they would have bought otherwise.

A decade of reindustrialization would need to channel funds away from housing (even if, for social reasons, one would increase funds available for low income housing) because houses do not add to productive capacity; rather, they compete with investment in it.

All-Savers certificates were not initiated by an economist's concept of how to redevelop America or set it on the road to economic recovery, but by a lobby anxious to bail out the savings and loan associations, which had invested heavily in housing and were stuck with long-term, low-return mortgages. However, there were many much less costly ways to bail out these associations, if that was desired. And, bailing industries out is contrary to economic recovery, which depends in part on allowing inefficient corporations to fail -- whatever the reason for their difficulties, even is such failure is caused by prior government regulations. The Reagan Administration, lacking a clear conception of reindustrialization, and faced with a lobbying blitz in Congress for the All Savers Act, did not resist but acquiesced. This could be corrected by not extending the life of the All Savers Act when the legislation comes up for renewal. At a minimum, restrictions on the investment of the funds generated should be removed.

"Leasing." Rules were liberalized to allow many more transactions to be characterized as "leasing." Under the new rules, a company showing little or no profit, and thus unable to use its full depreciation allowances and tax credits, can in effect sell those tax benefits to another company. To do this, it arranges to "sell" some of its equipment (or other assets) to another company, and then to lease it back; it retains title to the equipment, but the buyer, now the "lessor," is treated by both companies as if it were the owner. The lessee gains an immediate infusion of cash; the lessor acquires the tax benefits.

From a reindustrialization viewpoint this is a highly undesirable measure. The main beneficiaries of the changed leasing rules are weak corporations, corporations that have had little or no profit -- or even losses -- for several years in a row; otherwise they could have used the tax benefits themselves. A corporation may be weak for many reasons, including some that are its own fault (e.g., management misjudgment of the direction of the market, and thus continued production of fair-quality big cars when the market demanded high-quality small cars) and some that result from external factors over which it has no control (e.g., the 1973 oil crisis). But, if the economy is to adjust to changes in technology and the world markets, indeed to the cumulative effect of all changes, corporations that do not adapt (for whatever reason) must be allowed to reduce their size, even to go out of business (with some exceptions for genuine national

security reasons or in the case of temporary setbacks due to such things as dumping). Humanitarian and social considerations may suggest that workers laid off be helped to find new jobs, and that investors be compensated if the loss was due not to their judgment but, say, to a change in government policy, but to shore up failing corporations just delays the adaptation of the economy, reduces its ability to innovate and to change.

Among the prime beneficiaries of the new leasing rules are two failing industries, autos and steel. Both industries might well have to reduce capacity. U.S. needs for domestic auto and steel production seem to have declined permanently, and national security needs, it is believed, could be met as long as the production of certain specialty steels is not endangered and as long as 40 to 60 percent of capacity for all-purpose steel is maintained. A bailout of these industries, appearing to be semi-targeted (to all weak industries), but especially beneficial to these two major losers, is a good illustration of the follies of industrial policy.

(ii) Accelerated Depreciation

Conceived as a massive stimulus to new investment, the overhaul of existing depreciation regulations represents the largest business tax cut since the end of World War II. It scraps previous rules, which allowed companies to write off an investment over the "useful life" of the asset, a period that could be 20 years or more. Instead, investments in 1981 or

later can be written off over one of four periods, depending on the kind of aspect involved:

* Three Years: cars, light trucks, equipment for research and development, and equipment that has a useful life of four years or less. Equipment in the three-year category qualifies for a 6 percent investment tax credit. (Under previous law, the credit was 3½ percent for equipment with a useful life of three to five years, nothing if useful life was shorter.

* Five Years: virtually all other industrial equipment. This represents a dramatic shortening of write-off periods for much heavy equipment. For example, previously the normal write-off period was 13 years for oil refineries, 10 years for pulp and paper manufacturing plants, 12 years for steel mills. Computers (formerly eight years) and aerospace equipment (also eight years) benefit less. Investments in this category continue to receive a 10 percent investment tax credit.

* Ten Years: all public utility property with previous write-off periods between 18 and 25 years -- for example, a coal-fired electric power plant with a normal write-off period of 22.5 years -- and a few special categories of real estate such as amusement parks and large mobile homes. With the exception on real estate, which does not qualify for the investment tax credit, this category also receives the 10 percent credit.

* Fifteen years: all other real estate, plus any public utility property with a previous write-off period of more than 25 years. Low-income housing is slightly favored by a variety of

technicalities that allow it to enjoy a disproportionate share of tax benefits in the early years of the project.

Loss of revenues to the U.S. Treasury -- and gains to the corporations, under this Act alone -- are projected to rise rapidly from $9.6 billion in 1982 to $58.2 billion in 1986.

The idea, initiated through a bipartisan effort directed by Senator Lloyd Bentsen (D-Texas) during his tenure as chairman of the Joint Economic Committee, and embraced by both the Carter and the Reagan Administrations, constitutes an excellent example of a semi-targeted, reindustrialization approach. It does not seek to continue differentiating among some three hundred different kinds of machinery and equipment, each -- in the past -- calculated to have a different "useful life," but deals with four broad categories. Furthermore, it encourages replacing obsolescent or energy-inefficient machinery and equipment. When I discuss this bill with various groups across the country, I am often asked by the more liberal-minded members of the audience why machinery which makes, say, cosmetics, should be grouped together with oil drills, or autos with main frame computers? My response is that to screen more closely, an approach compatible with industrial policy, would create a bureaucratic and regulatory nightmare and would be deeply wasteful in other ways, since those in charge would frequently err in what they encouraged or discouraged. Thus they might frown on the production of equipment for electronic amusement arcades, where all too many young Americans spend all too much of their time and money, but these are the same machines that adapt basic computer chips to various

productive uses, and the computer industry is one of the most rapidly innovating, growing and competitive in the nation. It seems best to set wide supportive contexts, as the bill does, and let the market do the rest.

(iii) Research and Development

In the 1981 tax bill, to spur growth in innovation, corporations are given a 25 percent tax credit for research and experimentation costs to the extent that current or future expenditures exceed previous investments in the field. The base for calculating this amount is the average expenditure over the three previous years. In addition, corporations giving new scientific equipment to colleges and universities can claim a charitable deduction equal to the taxpayer's basis plus 50 percent of the appreciation.

My study of the first industrialization of America, to be published early next year, shows the cardinal role played by innovations, developed on the basis of strong domestic R & D, as well as the imported fruits of R & D in other countries. During the era of under-development in the U.S., especially in the 1970s, R & D was shown by several indicators to have weakened both in scope and in application. The new tax credit is a way to provide incentives for the private sector to increase its R & D expenditures. It is semi-targeted in that it rewards those who increase R & D expenditures but does not prefer one line of research over another. It contrasts sharply, for instance, with the decision

to commit twenty billion of federal funds to fusion research, which is based on a 1980 congressional decision that this specific research project deserves funds over numerous others, and that the government should supervise such projects, at least from an accounting viewpoint. Indeed, in the past, most public funds for R & D were allocated on the basis of project-by-project reviews. The Reagan approach in this instance favors a more semi-targeted and private sector approach, compatible with reindustrialization.

(iv) Human Capital

While the Reagan Administration did go a long way in providing semi-targeted incentives for capital formation, most of them quite suitable to reindustrialization (especially those with the big bucks), it did much less for R & D, and it did even less, systematically, for other elements of reindustrialization. Regarding human capital, no schemes were advanced or even developed to allow workers to participate in productivity gains. This is an essential element if workers are to become more motivated to contribute to economic progress, and if the American industrial system is gradually to shift from reliance on COLA to a productivity-based reward system, more compatible with reindustrialization.

Administration representatives may say that they did take a giant step in motivating people of all backgrounds -- investors and executives, workers and entrepreneurs -- when the administration engineered as its lead item (in terms of public attention-getting)

the personal income tax cut of 25 percent over three years. However, because of rising social security taxes, and the movement of people into higher brackets during these same years because of anticipated inflation, the personal income tax is expected to decline by a net of only 3 percent, which for most people will amount to a rather small dollar amount.

Moreover, from a reindustrialization viewpoint, the fact that the personal income tax is non-targeted means that much of the tax saved might go to consumption rather than to savings and investment. Supply-side economists suggest, and have some data to show, that concentrating the tax cut dollar at higher income levels concentrates it where people save and invest most. It remains to be seen whether, even in these brackets, individuals will save and invest much of the tax revenues released to them in a relatively high-inflation environment.

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In short, the basic policy direction of the U.S. is to restore economic growth as a high priority item, at least for a decade. This does not mean disregarding all other needs, from social to environmental, but it does mean not granting them the same high and rising status they commanded in the sixties (as far as social goals were concerned) and in the early seventies (as far as environmental goals go). Much more contested are the specifics of the approach. One approach calls for increased government guidance of the economy, via a procedure used in Japan, referred to as industrial policy, which tries to direct

resources and other modes of public support to industries considered likely "winners" in the future, while deliberately neglecting "losers." The opposite approach calls for the government to remove itself as much as possible from private decision making, by deregulation and by reduction of taxes and government expenditures. In between highly-targeted industrial policy and the non-targeted, unleash-the-market approach, is the semi-targeted approach of reindustrialization, which suggests that the government set up a context supportive of investment in the infrastructure and the capital goods sector, using broad-stroke incentives, and let the market work within that context. Reagan's policy includes a hefty mixture of semi-targeted and non-targeted measures.

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