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97th Congress
1st Session } JOINT COMMITTEE PRINT

THE 1981 MIDYEAR REPORT: PRODUCTIVITY

REPORT

OF THE

JOINT ECONOMIC COMMITTEE
CONGRESS OF THE UNITED STATES

JULY 23, 1981

Printed for the use of the Joint Economic Committee

U.S. GOVERNMENT PRINTING OFFICE
82-108 O WASHINGTON: 1981

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

firms have begun including production workers in business decisions through Quality Circles, in which small groups of workers meet regularly to define the problems they encounter on the assembly line or in their jobs and then develop their own solutions. Firms that use Quality Circles have found numerous ways to increase productivity. For example, at Honeywell, 11 quality circles at one plant implemented solutions to 109 production problems, reducing assembly costs by 36 percent.

Other witnesses told the Committee of more traditional ways in which their companies are enhancing productivity. Mr. Robert Lynas, a group Vice President for TRW, emphasized the need to engineer quality into products while they are being designed, by upgrading the "critical areas of quality and plant engineering" where the "Japanese are strategically out-engineering us." The Millipore Corp., according to its Chairman Dimitri D'Arbeloff, holds "that we must take the long-run view, make research and development expenditures in order to continue to grow and serve our customers here and around the world."

While there are a wide variety of ways in which American business firms are trying to improve productivity, a critical point that was demonstrated by the companies that appeared recently before the Joint Economic Committee is that there is much that American business can do to improve their own productivity, regardless of what the government does to help.

For its part, the Federal Government should develop an economic policy environment that encourages long-term noninflationary growth. This will go a long way toward reducing uncertainty, increasing saving and investment, and thereby increasing productivity. We also strongly urge each and every American business firm to develop its own productivity improvement program, as part of the solution to the Nation's productivity problems.

Recommendation No. 9: Encourage Labor and Management To Cooperate in Improving Long-Run Productivity and Competitiveness.

Cooperative activities by labor and management may significantly enhance government efforts to smooth adjustment problems and promote more effective uses of human resources. In hundreds of individual plants as well as several dozen industries and local communities, committees composed of worker and employer representatives have been formed to find acceptable solutions to issues of common concern.

At the plant level, for example, labor-management committees have arranged for training programs to meet changing skill requirements of employers and to alleviate labor bottlenecks. In other cases, labor and management have worked together to redesign production processes or deal with special workplace problems such as absenteeism. Community-wide committees have sought to encourage cooperative activities in local plants and create conditions that foster economic development. Labor-management committees in the retail food and steel industries have dealt with regulatory problems; in the railroad industry, cooperative projects have experimented with manpower and other changes to increase the efficiency of certain routes. While the scale, mix of activities, and success has varied from committee to committee, the initiatives have helped to improve productivity and strengthen labor-management relations in a variety of industrial settings.

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JOINT ECONOMIC COMMITTEE

(Created pursuant to sec. 5(a) of Public Law 304, 79th Cong.)

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INTRODUCTION BY REPRESENTATIVE HENRY S. REUSS, CHAIRMAN, AND SENATOR ROGER W. JEPSEN, VICE CHAIRMAN

The Joint Economic Committee has a long tradition of bipartisan collaboration on major economic issues. We are proud to continue that tradition in our 1981 Midyear Report on productivity. All 20 Members of the Joint Economic Committee, Republicans and Democrats alike, join in the recommendations which we present in this report. While, of course, many differences remain between the Republicans and Democrats on other economic issues, we are happy to be able to join together and present common recommendations on this most important question of productivity growth.

Higher productivity is vital if America is to restore its image and position of strength in the world. Higher productivity is vital if America is to stop its inflationary spiral. Higher productivity is vital if America is to maintain and increase the quality of life of its people. Without productivity gains, it will be difficult, if not impossible, to achieve the healthy and strong economy which we all are working for.

Congress has recognized the importance of this issue. The effort to reverse the productivity slump now takes center stage in virtually all Congressional economic policy discussions. Efforts to improve the level of productivity must remain at the forefront, not only of the work of the Congress, but also in the actions of business, labor, and the American people in general. The Joint Economic Committee's Midyear Report proposes substantive recommendations for all parties which have an important stake in reversing the productivity decline.

CHAPTER I. THE PAINFUL PRODUCTIVITY SLOWDOWN

Although productivity growth has long been recognized as one of the most important determinants of national economic growth and stability, it has not been until recently a major source of concern for Congress or the American public. The precipitous decline in productivity growth—the growth of output per worker—since 1973, and especially the absolute decline in the productivity level during 1978, 1979, and 1980, has changed all that. The effort to reverse the productivity slump now deservedly takes center stage in virtually all Congressional economic policy discussions.

Congress and the Administration, together with all Americans, should concert their efforts to reverse our productivity slump. Increased productivity will help reduce inflation by tempering the growth of unit labor costs; without renewed productivity growth, we will be forced to rely largely on monetary restraint to fight inflation. Without renewed productivity growth, we will be hamstrung in our efforts to approach full employment. We will witness a further erosion of our competitive position internationally and a renewed weakening of the dollar on the world's currency exchanges. The hope of all Americans—particularly the poor—for improved living standards will be dashed. And our relatively poor productivity performance in comparison with other industrialized nations could cause us to fall from the economic leadership position we currently hold in the Western World.

The Members of the Joint Economic Committee, Democrats and Republicans alike, unanimously agree that a primary goal of economic policy must be to restore our Nation's economy to healthy productivity growth. To do this, we must pursue macroeconomic policies designed to reduce inflation and achieve high economic growth, as well as microeconomic policies designed to enhance productivity directly. The fact that this is a unanimous report does not imply that the Members of this Committee agree on all aspects of economic policy. However, in this report, the Members of the Joint Economic Committee are united in making our recommendations for microeconomic policies to improve the economy's productivity performance.

During the three decades following the end of World War II, the American economy has been the strongest and most productive in the world. Not only did the vast majority of Americans enjoy rising standards of living, the economy also was able to finance a strong national defense that helped protect our friends and allies in Western Europe and Asia, raise millions of families out of poverty in the United States, and provide generous financial assistance to developing poor nations around the world. All of this was made possible in part by the growing productivity of American workers.

Since 1973, however, the growth in output per worker—the most widely used measure of productivity—has deteriorated sharply. This falloff in productivity growth—from an average annual rate of increase of 3.0 percent during the period 1950–65, to 2.4 percent

during 1965–73, to only 0.6 percent during 1973–80, with actual declines in 1978, 1979, and 1980—has become a major source of concern for Congress and the American public, and for a good reason. In the absence of productivity gains, there can be no general improvement in real U.S. living standards.

The close relationship between productivity growth and the growth of real income per worker is shown in Table 1. Over the postwar period, improvements in real hourly compensation have moved almost in step with improvements in productivity—from an annual average rate of growth of 3.1 percent during 1950–65, to 2.5 percent during 1965–73, to negative 0.1 percent during 1973–80. This slowdown occurred despite the fact that nominal hourly wages grew much more rapidly during the 1973–80 period than during earlier periods, as the table shows.

TABLE 1.—ANNUAL INDEXES OF PRODUCTIVITY AND HOURLY COMPENSATION IN THE PRIVATE BUSINESS SECTOR, 1950–80

[1977=100]

Year	Output per hour of all persons [1]	Compensation per hour	Real compensation per hour
1950	50.3	20.0	50.4
1955	58.2	26.3	59.6
1960	65.1	33.9	69.4
1965	78.2	41.7	80.0
1970	86.1	58.2	90.8
1973	94.8	71.3	97.3
1974	92.7	78.0	95.9
1975	94.8	85.5	96.3
1976	97.9	92.9	98.8
1977	100.0	100.0	100.0
1978	99.8	108.4	100.7
1979	99.4	119.2	99.5
1980	99.0	131.1	96.4

[1] There are many problems associated with the measurement of productivity, including distortions introduced by the business cycle, by technological and product quality changes, by unmeasured changes in labor input, and by changes in output not captured in the income and product accounts. Despite these problems, the trends are accurate so long as the methodology is consistent.

Source: U.S. Department of Labor, Bureau of Labor Statistics.

Along with excessive money growth, other policy mistakes and foreign price shocks, the productivity slowdown helped accelerate inflation in the 1970's. Sizable real wage increases had occurred year after year during most of the 1950's and 1960's and by the 1979's workers had come to expect them in future years. For example, with no inflation, a 3 percent pay hike also becomes a 3 percent real wage increase. This means that for workers to really end up 3 percent better off, productivity also has to go up 3 percent. If productivity growth falls short of the desired growth in real wages, then the pay gains will raise business costs more than workers had expected and the resulting price increases will generate unexpected inflation. When workers discover their higher pay eroded by inflation and their real gains held down, they will demand even higher pay increases the next time around. These, in the absence of productivity growth, may simply be translated into yet higher rates of inflation in unit labor costs and output prices. Furthermore, as we discuss later, inflation in turn depresses productivity by discouraging capital investment. In this way, reduced productivity growth contributes to the wage-price treadmill.

The fact that this process can work in reverse demonstrates the good sense of focusing economic policy on productivity growth. When productivity grows faster than expected real wages, unit labor costs will slow down and so will the rise in prices. A study prepared last year for the Joint Economic Committee demonstrated, in fact, that an increases in productivity can precipitate a deceleration in inflation, as one year's price moderation from higher productivity leads to next year's wage moderation which leads to further price moderation, and so forth. It is important, however, to note that this process can easily be thwarted by other sources of inflationary pressure—such as excessive monetary growth—and that renewed productivity growth alone will not guarantee lower inflation.

Taxes also enter into the wage-price spiral. Achieving a rising standard of living means achieving a rising disposable real wage, after taxes are subtracted. For most families, simply keeping even with inflation is not enough, since a nominal increase in hourly pay often means paying a higher marginal tax rate. A worker whose pay keeps even with inflation, but who faces higher taxes, actually falls behind in real disposable income. So, workers must seek nominal pay increases that not only keep up with inflation but higher marginal tax rates as well. As noted above, an increase in productivity can lead to a deceleration in wage and price increases, but so can a cut in workers' personal income taxes, since such lower taxes may ease demands by workers for pay increases, thereby reducing upward pressure on unit labor costs.

The productivity slowdown since 1973 also has contributed to a deterioration in the ability of American industry to compete in the world economy. All the industrialized Western nations experienced a marked decline in productivity growth after 1973, as Table 2 shows. But the reduction experienced by the U.S. economy exceeded the decline in every other country except the United Kingdom and Sweden. As a result, unit labor costs rose more in the United States than anywhere else when measured in U.S. dollars, with only two exceptions.

TABLE 2.—ANNUAL PERCENT CHANGE[1] IN MANUFACTURING PRODUCTIVITY AND UNIT LABOR COSTS IN U.S. DOLLARS, 11 COUNTRIES, 1960–79

Country	Output per hour			Unit labor costs		
	1960–73	1973–79	Percent decline	1960–73	1973–79	Percent increase
United States	3.1	1.4	54.8	1.8	7.9	339.9
Canada	4.6	2.2	52.2	1.3	7.1	446.2
Japan	10.3	6.9	33.0	6.7	9.4	40.3
France	5.8	4.8	17.2	4.6	11.3	145.6
West Germany	5.5	5.3	3.6	8.1	11.1	37.0
Italy	7.2	3.7	48.6	6.5	10.1	55.4
United Kingdom	4.0	.5	87.5	3.3	15.7	375.8
Belgium	7.0	6.0	14.3	5.8	12.2	110.3
Denmark[2]	7.0	4.4	37.1	5.4	11.3	109.3
Netherlands	7.4	5.3	28.4	7.8	11.7	50.0
Sweden	6.7	2.4	64.2	4.8	12.5	160.4
8 European countries	5.8	4.0	31.0	6.4	11.6	81.3
10 foreign countries	6.5	4.8	26.2	5.8	10.6	82.8

[1] Average annual compound rate of change.
[2] Excluding manufacturing handicrafts.

Source: U.S. Department of Labor, Bureau of Labor Statistics. Monthly Labor Review, December 1980, pp. 32-39.

Overall, when the 1973–79 period is compared with the 1960–73 period, productivity growth declined twice as sharply in the United States as it did elsewhere, while the rate of increase in unit labor costs accelerated four times as rapidly here as abroad.

Even though productivity has slowed in the United States, output per worker here still is the highest in the world, as Table 3 indicates. In only a few countries does productivity approach ours. However, if current trends continue, it will not be very long before many of the other industrialized countries achieve productivity levels that meet or exceed America's own productivity.

TABLE 3.—REAL GROSS DOMESTIC PRODUCT PER EMPLOYED PERSON IN LEADING INDUSTRIAL COUNTRIES BASED ON INTERNATIONAL PRICE WEIGHTS, 1950–79

[United States=100]

Country	1950	1960	1970	1979 [1]
Belgium	55.6	59.7	73.7	90.7
Canada	84.5	89.5	92.6	94.8
France	42.4	53.7	71.0	88.8
Germany [2]	37.3	56.0	71.3	87.9
Italy	25.5	34.9	53.4	59.5
Japan	15.5	23.8	48.7	66.4
Netherlands [3]	55.4	62.7	76.1	93.0
United Kingdom	53.4	53.7	57.6	59.5

[1] Data are based on preliminary estimates.
[2] Excluding the Saar and West Berlin in 1950.
[3] Employment figures for the Netherlands are Dutch estimates of work years of employed persons.

Source: U.S. Department of Labor, Bureau of Labor Statistics, unpublished data; Congressional Budget Office. From Congressional Budget Office, "The Productivity Program: Alternatives for Action." January, 1981, p. 135.

To the extent that a slowdown in U.S. productivity growth causes the prices of U.S. goods to rise faster than the prices of foreign goods, both U.S. and foreign consumers will shift their spending in favor of foreign products. The productivity gap has hit particularly hard at U.S. industries that compete head on in the world market with highly productive foreign firms. One recent witness before the Joint Economic Committee, Professor William Abernathy of the Harvard Business School, described the plight of two American industries that felt the onslaught of more-productive foreign competitors:

> There were 150 television set manufacturers in the United States alone in 1955. There are now almost no sets produced in the United States. The sets which are produced are produced by Japanese firms, and they tend to do a better job managing our own people, our own work force than we do ourselves, at least based on the productivity data and quality data I've seen.
>
> I happen to be honored by being the panel chairman for the National Academy of Engineering study on the competitive status of the U.S. automobile industry. I went into this study thinking that the difference in costs was going to be explained by the labor rate . . . . I was astonished to find that this is not nearly the whole story. That, in fact, the productivity gap is perhaps as large or larger than the labor cost gap. Consistently, the automobile industry finds in case after case that there is as much as a 50 percent differential in labor productivity . . . . Whereas we may take 100 hours to produce a car, Japanese firms produce them with 50 labor hours. For some engine cases, the gap is as high as a 3 to 1 productivity differential.

As the final report on "Productivity" of the Joint Economic Committee's Special Study on Economic Change [1] concluded:

[1] U.S. Congress, Joint Economic Committee, Special Study on Economic Change. "Productivity: The Foundation of Growth." November 1980.

At minimum, continuation of the 1970's (productivity) trend will see a deepening of America's pervasive international competitiveness decline that is seen most clearly in the increasing influx of Japanese and German automobiles, radial tires from France, textiles from Hong Kong, Japanese television sets, Italian shoes and foreign bicycles, motorcycles, flatware and machine tools, because the major force that drives this wave of foreign competition is productivity growth more rapid than that in the United States.

CHAPTER II. A PROGRAM FOR PRODUCTIVITY GROWTH

Why did our economy's productivity growth decline so sharply during the 1970's and what can be done to reinvigorate the productivity of American industry?

Our productivity problem is a complex one for which we have no simple explanation and no simple solution. Moreover, when we talk about reversing the productivity slump, we do not necessarily mean that we must reverse all the forces that were responsible for the productivity decline itself. Therefore, in our recommendations, we will not try to address each and every one of the causes of the productivity decline. Instead, we will present a series of recommendations, involving both government policies and the behavior of the private sector, that could help restore the American economy's productivity growth. We will make specific recommendations in three main areas.

First, Congress and the Administration should pursue economic policies aimed at restoring our economy to healthy long-run growth as well as toward lower inflation and unemployment.

Second, government and business should work together toward increasing the stock of capital available to America's workers, by pursuing policies to increase savings and investment in both real and human capital, by reducing waste, inefficiency, and unnecessary regulation, by improving the Nation's infrastructure, and by stimulating research and development.

Third, corporate managers should retune their thinking to look beyond short-term profits toward how today's business decisions influence productivity and affect American industry's long-run ability to survive and compete in the world economy.

Before we present our recommendations, we think it is important to note that the productivity slowdown can be attributed at least in part to factors that are beyond the pale of government policy.

Some of the slowdown can be attributed to decisions made by millions of consumers and workers, transmitted through product and labor markets, which Congress should not and probably could not influence even if we wanted to. For example, during the 1970's, consumer spending shifted markedly away from manufactured commodities—which are produced in industries where productivity is relatively high—and toward the consumption of various services—which are produced by industries where productivity is believed to be much lower. One study, by MIT Professor Lester Thurow,[1] attributes as much as half of the post-1973 slowdown in productivity growth to the fact that the output mix of the American economy has been shifting toward service-producing industries, where productivity is below the national average.[2]

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[1] Lester Thurow, "The U.S. Productivity Problem," in Data Resources U.S. Review, Lexington, Mass., August 1979, pp. 1.14–1.19.

[2] Another study, however, by the American Productivity Center, holds that the shift to services has, in fact, helped improve productivity. The APC study found that, while productivity growth in services lags productivity growth in manufacturing, the overall level of productivity may actually be higher in services. See Wall Street Journal, June 19, 1981.

Furthermore, the 1970's saw a rapid influx of women and teenagers into the job market. The fact that the economy was able to provide employment for these new workers in unprecedented numbers is testimony to its resiliency. However, most of these new workers were less experienced than their more seasoned cohorts, had less new capital to work with and were absorbed largely by the growth of the service sector of the economy, thereby reducing the average level of worker productivity.

Rising energy prices also contributed to the productivity slowdown. As the cost of energy increased during the 1970's, machines and equipment that were inefficient users of energy were removed from service, reducing the net capital stock. This contributed to the fall in the capital-labor ratio which we discuss later. Also, higher energy prices caused a surge in new oil and gas exploration, reducing output per labor hour in the mining sector—another source of the productivity slowdown that we would not necessarily wish to reverse.

The fact that we cannot or do not wish to "solve" or reverse these particular causes of the productivity slowdown does not mean we should not try to improve productivity. We believe there were a number of productivity-depressing factors at work during the 1970's which could respond to Congressional actions. These include our excessively high rate of inflation, the low level of savings and business investment in new plant and equipment, the inadequate growth of the Nation's real GNP, the decline in research and development spending in both the public and private sectors, the shameful waste of human beings caused by high unemployment and inadequate hiring and training incentives, the deterioration of the Nation's essential public and private infrastructure, and the excessive costs imposed on the private sector by wasteful government regulations. These are all areas that are particularly ripe today for a new direction in the economic policies of the Federal Government.

Wise government policies, however, will not solve the productivity muddle alone. There is much that the management of American businesses can do—regardless of what the government does—to improve productivity. In addition, business and labor and the government must cooperate and work together as part of the productivity effort.

Recommendation No. 1: Pursue Economic Growth, Reduced Inflation, and Full Employment.—High growth improves productivity for a simple reason: the increased production means there are more units of output per unit of fixed labor input. A reduced rate of inflation improves productivity by providing a more stable and less risky business environment. High employment improves productivity by making it easier for workers to adjust to technological change by finding new jobs at comparable or better pay and with better long-term prospects than the jobs they may be leaving.

While there were numerous specific factors contributing to the productivity slump of the 1970's, all were compounded by the fact that the American economy during the past decade was plagued by unacceptably high inflation and unemployment and by slow real growth.

During much of the 1970's, the American economy operated well below its productive capacity, as Table 4 shows. During the period

between 1973 and 1980, there was a much larger gap on the average between the economy's actual GNP and its potential GNP than during the period 1950 to 1972. Real GNP growth was lower, unemployment was higher and so was the rate of inflation. Furthermore, during the 1970's, the economy was hit by two major recessions, the OPEC oil price shocks, rapid food price increases, a grain embargo, drought, growing regulatory costs, high interest rates, and intense competition in selected industries from imports.

TABLE 4.—ECONOMIC CONDITIONS, 1950–80

	Annual average	
	1950–72	1973–80
Inflation rate, percent increase in the CPI	2.5	8.9
Unemployment rate, percent of labor force	4.8	6.8
GNP gap, percent difference between actual and high-employment GNP	[1] 1.73	[2] 3.23
Growth rate of real GNP	3.93	2.85

[1] For 1955–72.
[2] For 1972–79.

Sources: Bureau of Labor Statistics, Bureau of Economic Analysis.

A stagnating economy cuts into productivity growth by hampering the ability of business firms to make the best use of their resources as well as by depressing the willingness of businesses to invest in new plant and equipment, R. & D. and human capital.

Although many firms can vary the size of their work force as their output varies, there are a number of corporate functions which must be carried on regardless of the firm's prosperity. Businesses generally are reluctant to lay off administrative and management employees during periods of low growth, partly because of the high cost of training new employees when growth picks up and partly because of the havoc inexperienced workers can cause when firms are trying to expand sales and deliveries. Furthermore, during actual recessions, firms do not immediately lay off workers as sales and output decline—again because of the high cost of hiring and training—until they are convinced that output is down for an extended period. In this situation, measured productivity falls because less output comes off equipment manned by the same number of workers. Conversely, during upturns in production or periods of strong growth, employment also tends to lag the rise in output, and productivity rises.

A stagnating economy also restrains business investment. When sales are growing rapidly, businesses have a strong incentive to expand their productive capacity by investing in new plant and equipment or by upgrading their existing capacity. Testifying before the Joint Economic Committee, Mr. Abraham Krasnoff, President of the Pall Corp., stated:

I suppose it is fairly self-evident that productivity growth on the macroeconomic level can only take place under a system of economic growth—that is, sales growth by many individual companies. Fiscal and monetary policies as well as free trade policies conducive to growth are essential if the economy as a whole is to prosper.

In the view of a number of researchers, high rates of inflation also depress productivity by discouraging investment, raising interest rates and distorting household savings decisions.

High inflation, combined with the way depreciation is treated in the tax code, depresses the after-tax return on investment, which in turn results in a slower rate of capital formation and a slower rate of productivity growth. We will treat this problem in detail later.

When the future costs and revenues of a potential investment project become difficult to estimate because of inflation, the increased riskiness dampens business enthusiasm for new undertakings. Businesses increase the target rate of return for new projects, abandoning many investment projects that might otherwise have been undertaken. They also alter the structure of investment spending away from projects that yield a revenue stream over an extended period of time in favor of projects that promise short-term gains and quick payoffs. In addition, inflation makes it much more attractive to merge with an existing firm rather than take the riskier but potentially more productive route of investing in new plant and equipment. The impact of inflation on business behavior was discussed at length in the Special Study on Economic Change's report on "Productivity":

> Inflation discourages the risk-taking associated with long-term investment projects which could provide more modern and efficient equipment. Inflation simply makes long-term investment riskier. Both the estimates of the revenues that an investment might generate, and the costs that will have to be absorbed, are less predictable. Investment projects with quicker payouts become more attractive both because revenue and cost forecasts extend over a shorter (and presumably more foreseeable) planning horizon, and because profits generated further in the future by long-term investments are likely to be eroded by inflation. The investment emphasis then turns to other expansion opportunities (the modification or acquisition of existing products and production processes), rather than upon the development of new products and processes which can boost productivity . . . .

Finally, we believe it is important to point out that high unemployment also hurts the Nation's productivity record. During periods of high or rising joblessness, employed workers become more concerned about their own job security than about upgrading their jobs or pursuing the search for more productive and better paying jobs. During the late 1950's and early 1960's there was a widespread concern that automation would render millions of workers jobless. The rapid economic growth of the 1960's, however, should have laid to rest the fear that technological change would create endemic structural unemployment, as the new jobs created by the expansion of the economy provided a strong incentive for workers in declining occupations or industries as well as for new labor force entrants to learn new skills and enter new occupations. A strong economy makes workers much less resistant to change. In a stagnant economy, on the other hand, there is a much stronger incentive to preserve existing jobs by resisting the spread of new technologies or by appealing to the government to bail out failing corporations and raise barriers to imports.

The Members of the Joint Economic Committee unanimously agree that the economic policies of the United States should pursue the goals of strong economic growth, low inflation and full employment. These are the hallmarks of a healthy economy and the foundation of rising productivity, but they have evaded our economy for too long.

Recommendation No. 2: Change the Tax System To Encourage Productivity Improvement in the Private Sector:

(*a*) For capital-intensive industries, liberalize depreciation so as to stimulate business fixed investment. The revised depreciation allowances should be simple to understand and compute and neutral with respect to inflation and among categories of investment.

(*b*) For research-intensive industries, tax incentives for research and development should be tailored to approximate the benefits which liberalized depreciation gives to physical investment.

(*c*) For labor-intensive industries, the Targeted Jobs Tax Credit should be improved and more widely used in order to improve employee skill levels.

There can be little doubt that one of the most important factors in the productivity slowdown was the inadequate level of capital investment during the 1970's. The story is told in Table 5.

During the period 1974–79, real business fixed investment as a percent of real GNP was as high as, or higher than, during any comparable postwar period. However, according to the Council of Economic Advisers,[3] a greater share of total investment today is being spent on relatively short-lived assets, with the result that each dollar of gross investment now gives less net investment than before because the stock of capital is depreciating more rapidly.

TABLE 5.—INVESTMENT SHARE, AND GROWTH IN THE CAPITAL-LABOR RATIO, 1949–79

Period	Real business fixed investment as percent of real GNP[1]	Percent change, average annual rate (end of year to end of year)				
		Net capital stock (nonresidential)[2]	Employment[3]	Hours[3]	Capital-employment ratio[4]	Capital-hours ratio[5]
1949–59	9.1	4.0	1.1	0.7	2.9	3.2
1959–69	9.8	4.6	1.6	1.2	3.0	3.3
1969–74	10.5	4.2	1.2	.5	2.9	3.7
1974–79	10.3	3.0	3.1	2.8	−.1	.2

[1] Average annual investment-GNP ratio, in percent.
[2] Net fixed nonresidential business capital, 1972 dollars, end of year.
[3] For private business, all persons. End of year calculated as average of year's 4th quarter and following year's 1st quarter.
[4] Net capital stock per employed worker for the private business sector.
[5] Net capital stock per employee hour for the private business sector.

Sources: Department of Commerce, Bureau of Economic Analysis, and Department of Labor, Bureau of Labor Statistics. From "Economic Report of the President, 1981," p. 71.

The growth of the net capital stock has, therefore, slowed markedly from earlier periods. On the other hand, employment and hours worked grew much more rapidly during the 1974–79 period than earlier, so that the amount of capital per worker actually declined between 1974 and 1979. By comparison, between 1949 and 1974, the capital-labor ratio grew at an average annual rate of about 3 percent.

[3] Council of Economic Advisers, "Economic Report of the President, 1981," p. 71.

According to the American Productivity Center,[4] the capital-labor ratio peaked in 1975 for many industries—textiles, lumber, furniture, paper, petroleum, rubber, primary metals, electrical machinery, and transportation equipment—and has fallen significantly since then.

There are two ways in which this decline in capital formation can contribute to slower productivity growth. First, it is widely agreed that an increase in the amount of capital per worker will boost labor productivity. Tasks that have to be performed by hand when few tools are available can be performed by machinery when capital is abundant, and jobs can be made more efficient through specialization. Second, if new plant and equipment embodies the latest technology, investment should provide a further increase in labor productivity. Any slowdown in investment thus hurts productivity by slowing the growth of capital per worker and by delaying the introduction of new technologies.

Not all of the productivity slowdown that has occurred since 1973 is due to the recent stagnation of capital formation. But clearly it is very important. For example, a recent study that was performed at the Federal Reserve Bank of San Francisco [5] concluded that almost half of the recent slowdown in productivity growth could be attributed to the reduced growth of the capital-labor ratio. Virtually all researchers, even those who attribute less of the slowdown to inadequate investment, agree that a significant element in our current productivity problem is the inadequate level of investment in plant and equipment by American businesses.

There are a number of reasons why investment has slowed, including business-cycle uncertainties, higher energy prices, a reduction in the level of savings, the uncertainty caused by high and rising inflation, the growth of government regulation, and high interest rates. We discuss many of these issues elsewhere.

One important contribution to our inadequate investment performance is the U.S. tax code and the depreciation provisions in particular. This problem is discussed in the "Productivity" report of the Special Study on Economic Change:

> Under current tax law, businesses are allowed certain tax deductions based on the "historic cost" of their plant and equipment. (The idea behind these tax deductions is that some allowance should be made for the fact that machinery and equipment wear out, and that replacement will eventually have to occur.) But with inflation pushing current replacement costs above the historic cost of plant and equipment, two things happen. First, because depreciation allowances are based upon the purchase or historical prices of existing plant and equipment, current depreciation allowances are understated. Second, because depreciation allowances are too small, expenses are understated, and current profits are overstated. With profits overstated, taxes paid will also be too large, leaving less money to be distributed to shareholders, or to be reinvested for future growth.

In addition, the current depreciation provisions bias investment decisions away from long-lived investments toward investments with quick payoff periods, as the "Productivity" report explains:

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[4] American Productivity Center. "Total Factor Productivity Index," Houston, Tex., 1980, Table VI.

[5] Jack Beebe and Jane Haltmaier. "An Intersectoral Analysis of the Secular Productivity Slowdown," in Federal Reserve Bank of San Francisco, Economic Review, fall 1980, pp. 7–28.

Over time, longer lived plant and equipment suffer larger declines in the real value of depreciation allowances. As a result, the interplay of higher and variable inflation rates and inadequate depreciation allowances result in a bias against longer lived projects. In effect, the planning horizons of businesses become shorter. The result is that investment projects that might have yielded significant future benefits—particularly in the form of higher productivity—are rejected in favor of projects yielding faster payoffs.

Little wonder then that virtually every witness who recently appeared before the Joint Economic Committee to testify on productivity urged that Congress liberalize the depreciation allowances in order to stimulate business investment.

We agree. Liberalized depreciation allowances for business investment are needed because current allowances, which are based on historic cost, understate the real cost of replacing depreciated equipment in times of rapid inflation. Liberalized depreciation allowances, constituting a move toward replacement cost depreciation, would directly increase the after-tax profitability of new investment.

Depreciation schedules should also be reformed to eliminate the bias which they introduce into the composition of investment during periods of high inflation. Investment projects which yield the highest prospective returns before taxes are the most productive projects; they should, therefore, also yield the highest returns after taxes. Under current depreciation rules, the tax system is not "neutral" in this respect. Some projects having lower returns before taxes will be selected by companies because they have higher returns after taxes. These tax wrinkles are costly to the economy, since they result in inefficient investment patterns. In times of high and volatile inflation, nonneutrality of depreciation allowances works against long-lived investments, such as structures, and in favor of vehicles and equipment.

Any tax measures designed to provide a direct incentive for new investment should be supplemented by incentives to spur research and development (R. & D.). Total spending in the United States for R. & D. by industry, government, and universities declined from a peak of 3 percent of GNP in 1964 to 2.3 percent in 1979. Since there is a considerable lag between R. & D. and the time when it bears fruit in the form of new products or new production processes, it is not clear how much of our current productivity slowdown is due to the current slowdown in R. & D. spending. Today's reduced R. & D. spending, however, does portend poorly for the future, since R. & D. is the source of new knowledge and new technologies and thus helps stimulate long-run productivity growth.

The slowdown in R. & D. spending in the United States is compounded by the fact that many of our trading partners have increased their own commitment of resources to the development of new technologies, as Table 6 shows. Furthermore, a much greater portion of R. & D. spending in the United States is devoted to defense than in other countries.

TABLE 6.—RESEARCH AND DEVELOPMENT EXPENDITURES IN LEADING INDUSTRIAL COUNTRIES AS A PERCENT OF GROSS NATIONAL PRODUCT, 1963–77

	1963	1967	1973	1977
United States	2.9	2.9	2.3	2.3
Canada	.9	1.3	1.1	1.0
France	1.6	2.1	1.8	1.8
Germany	1.4	2.0	2.3	2.3
Japan	1.4	1.5	1.9	[1] 1.9
United Kingdom	[2] 2.3	2.3	[3] 2.1	NA
U.S.S.R.	2.8	2.9	3.7	3.5

[1] 1976.
[2] 1964.
[3] 1975.

Source: National Science Foundation, "Science Indicators, 1978," p. 140. From Congressional Budget Office. "The Productivity Problem: Alternatives for Action." January 1981, p. 71.

While depreciation reform will add productivity growth in industries which are capital-intensive, and is widely supported, it will not help firms in industries that are research-intensive. The needs of research and technology-oriented companies differ significantly from those which are capital-intensive, as Abraham Krasnoff, President of the Pall Corp., explained:

Small companies of a technological nature have, in my experience, relatively little fixed capital investment and relatively large expenditures in talent and in research and development. It takes them many years to generate a need for large capital expenditures. For the first 10 years of our growth at our inception, we needed the capital for research and development. It is pretty much true of any technological company I have ever witnessed. Many years later—we are a 30-year-old company—we have lots of smokestacks now. And we would benefit greatly from accelerated depreciation. We love it when we depreciate things 100 percent a year in Britain. We haven't paid taxes there for years.

But that is not what will benefit the growth of this society, which needs technological development and innovation.

The DNA companies, the genetic engineering companies, the VSLIC companies, don't need a lot of capital for equipment, but they need an enormous amount for talent and research and development. If your interest is in developing those technologies, you will see that their balance sheets are very low in capital equipment.

Spokesmen for research-intensive companies urged enactment of tax credits for research spending, similar to the existing investment tax credit, or a reduction in the capital gains tax. The importance, particularly to small business, of tax changes other than depreciation reform was explained by Arthur Levitt, Jr., Chairman of the American Business Conference:

The smaller growing companies tend to think that research and development dollars are of much more compelling importance to them than adjustments to our present depreciation practices.

At the recently completed White House Conference on Small Business, a task force that concerned itself with this issue felt that (depreciation reform) was an important issue but insofar as small business was concerned, it was far less important than some of the other points we've been talking about. A survey of companies listed on the American Stock Exchange found pretty much the same effect, that where help was needed was in terms of reduced capital gains taxes, in terms of research and development dollars, because these companies were heavily involved in high technology areas; and that, to be sure, depreciation allowance adjustments would be useful, but simply not quite as useful to them as in these other areas.

Enactment of measures to stimulate new investment in plant and equipment should be accompanied by measures which give substantially the same benefit to new spending for research and development. As the "Productivity" report of the Special Study on Economic Change concluded:

> R. & D. and investment are motive forces behind technological change, and therefore behind productivity increases. Anything that slows the rate of technological change—that slows the conduct of R. & D. activities, or that reduces new investment growth—therefore reduces productivity growth.

For many industries, particularly service industries, new tax provisions designed to stimulate investment or spending on research and development will have little effect on their future growth or their ability to provide jobs for our growing work force. Although productivity in these industries is generally below the national average, they are important sources of jobs for more than half the work force. These industries will be helped more directly by an employment and training tax credit designed to encourage new job creation and improve the skills of the service sector labor force.

The United States has experimented with two types of employment tax credits. The New Jobs Tax Credit, which applied in 1977 and 1978, provided a credit of up to $2,100 for workers added by firms whose payrolls grew by more than a specified amount from the previous year. According to the Treasury Department, about one million firms—nearly half of those eligible—utilized the credit.

The Targeted Jobs Tax Credit, begun in 1979, is targeted on particular categories of workers, providing tax credits of up to $3,000 in the first and $1,500 in the second year of an eligible person's employment. To date, participation by employers has been disappointingly low: in a recent survey conducted for the Department of Labor, 21 percent of employers had heard of the Targeted Jobs Tax Credit and only 3 percent reported using it. The single largest group of workers served by the program has been cooperative education students, who account for nearly one-half of the 300,000 persons hired in the first 18 months. Other eligible categories include more obviously disadvantaged individuals such as youth; Vietnam-era veterans from low-income families; handicapped individuals; ex-convicts; and recipients of public assistance.

The present credit is benefiting only a small fraction of those it was designed to help. In addition, the current employment tax credit is not linked to job training, which we believe should be part of any employment program since training provides the entree to better, more productive jobs.

We endorse the concept of an employment tax credit and employment and training incentives as a way of inducing businesses to expand employment. Although an expansion of employment in the service sector will probably reduce the growth rate of productivity, as it is currently measured, an employed person is more productive than an unemployed person and a trained employee is more productive in present and future jobs. Changes should be made in the current Targeted Jobs Tax Credit to make it more usable by employers and to link it to job training.

Recommendation No. 3: Incentives To Increase Investment Should Be Accompanied by Measures To Increase Saving.—Any tax measures designed to encourage the private sector to save more should be efficient and generate the least revenue loss for the added savings.

By almost any measure, the United States lags behind the rest of the industrialized world in its ability to make resources available for investment through saving. According to figures from the Organization for Economic Cooperation and Development (OECD), presented in Table 7, gross saving by both the private and public sectors of the American economy is a smaller percent of gross domestic product than it is for any of our major trading partners. The Japanese gross saving rate, in fact, is more than twice ours, while the savings rate by Japanese households has recently been three to four times our own. Moreover, when you look at any measure of saving, the figures tell the same tale: we save too little.

From a national standpoint, saving means deferring consumption in order to add part of current output to the Nation's stock of capital. If we don't save enough, investment will be inadequate and productivity will be hurt.

TABLE 7.—SELECTED SAVING RATIOS, UNITED STATES AND MAJOR FOREIGN COUNTRIES, 1965–76

Country and period	Gross private saving ratio [1]	Gross saving ratio [2]	Household saving ratio [3]
Japan:			
1965–69	29.6	36.6	18.6
1970–76	31.7	37.0	22.0
Germany:			
1965–69	21.6	26.4	12.1
1970–76	21.2	25.4	15.8
United Kingdom:			
1965–69	14.5	19.6	5.9
1970–76	14.6	18.5	8.1
Canada:			
1965–69	18.6	23.1	6.4
1970–76	19.5	22.3	9.0
France:			
1965–69		25.2	
1970–76	20.5	23.5	13.6
Italy:			
1965–69	22.1	23.5	15.7
1970–76	24.3	22.5	21.0
Average, 6 countries:			
1965–69	21.3	25.7	11.7
1970–76	22 0	24.9	14.9
United States:			
1965–69	16.9	19.7	7.4
1970–76	15.8	17.8	7.8

[1] Ratio of household plus corporate gross saving to gross domestic product (GDP).
[2] Ratio of total gross saving (including Government saving) to GDP.
[3] Ratio of household saving to disposable income.

Sources: OECD, National Accounts. From Board of Governors of the Federal Reserve System. "Public Policy and Capital Formation," April 1981, p. 67.

Households are an important source of saving, but during the recent past household saving has declined. One major culprit has been inflation. During 1979 and 1980, when the annual inflation rate averaged 12.9 percent, personal saving fell to only 5.4 percent of disposable personal income, compared to a postwar average of 6.8 percent. As

the report on "Productivity" by the Special Study on Economic Change observed:

(Inflation) encourages consumption and discourages saving because—anticipating higher prices in the future—consumers and businesses buy now rather than later. The result is a surge in anticipatory buying that adds to inflationary pressures. To finance these purchases, consumers and businesses borrow and draw down savings that might otherwise have been used to finance investment projects.

TABLE 8.—*Personal saving as percent of disposable personal income*

Period:		Period:	
1972	6.5	1977	5.6
1973	8.6	1978	5.2
1974	8.5	1979	5.2
1975	8.6	1980	5.6
1976	6.9	1981: First quarter	[1] 4.7

[1] Seasonally adjusted annual rate.

Source: Department of Commerce (Bureau of Economic Analysis and Bureau of the Census).

A recent look at the decline in personal savings by the Federal Reserve Bank of New York supports this finding: [6]

Inflationary pressures have intensified since the 1973–75 recession. The rate of increase in the consumer price index accelerated from about 5 percent in 1976 to 14 percent in the first half of 1980. Rapid increases in the price level have apparently caused families to turn away from financial saving and toward the purchases of real assets—housing and other durable goods—as a hedge against inflation. Unlike financial assets, this type of wealth is not eroded by rapid price increases. Further, an increase in all types of consumer spending—not just spending for durables—could be stimulated by inflation. When savers receive interest payments in dollars with eroded purchasing power, the return from saving is diminished. For this reason, a fall in the inflation-adjusted rate of return might encourage consumption and discourage saving. The tendency for inflation to discourage saving is reinforced by the progressive tax system. Inflation induces "bracket creep"—that is, individuals find themselves pushed into higher tax brackets even if their purchasing power has not risen. Bracket creep causes the after-tax reward for saving to fall even further because a greater proportion of the interest payments becomes subject to taxation.

A fall in financial saving due to a flareup in inflation marks a significant departure from past behavior. In the 1960's and early 1970's, outbursts of inflation were often unexpected, prompting households to protect the purchasing power of their assets by saving more. Because of the steady upward ratcheting of prices since the early 1970's, households began to manage their assets more effectively. Realizing that fixed-interest payments on financial instruments failed to yield an adequate return after allowing for inflation, consumers accumulated durable goods instead of financial assets. Much of the decline in financial saving which began in 1976 was offset by a step-up in tangible forms of saving.

There are a number of changes in the tax laws that can stimulate saving by the private sector, including reductions in marginal tax rates, reduction in taxes on income from savings, expansion of individual retirement accounts to those covered by an employer's pension plan, incentives to increase the availability and reduce the cost of home mortgages, an exemption for interest earned on a passbook savings account, and a reduction in capital gains taxes, to name only a few. The preferences and recommendations of the Democratic and Republican Members of the Joint Economic Committee are included in our 1981 Joint Economic Report.

[6] Donald Cox. "The Decline in Personal Savings," in Federal Reserve Bank of New York, Quarterly Review, spring 1981, pp. 25–32.

While Congress should act to encourage more saving by the private sector, we think it is important to point out that the public sector can also contribute directly by reducing its own dissaving. When government expenditures exceed revenues, the resulting deficit absorbs resources that could potentially be used for productivity-enhancing private investment. We caution that new private sector saving incentives can be offset if resulting government dissaving is excessive. Reducing deficits reduces government dissaving and thus increases overall national saving. For this reason, we urge that savings incentives be designed to minimize the long-term Federal revenue loss for each dollar of additional saving generated.

Recommendation No. 4: Create Conditions for Lower Interest Rates.—Lower interest rates will stimulate investment in business, agriculture, housing and research, and in all these ways help stimulate productivity and competitiveness.

Interest rates rose to record heights during 1973 and 1974, just prior to the 1974–75 recession, and again during late 1979 and early 1980, just prior to the sharp but short recession which occurred during the summer and fall of 1980. Although interest rates fell substantially following the 1974–75 recession, their decline during 1980 was quite moderate and by the spring of 1981 they had returned virtually to their 1980 peak. Although the current high nominal interest rates are in part the result of continued inflationary expectations with real interest rates being substantially lower, real interest rates are by historical standards very high and such high interest rates contribute to the poor productivity performance through their effect on business investment.

The stop and go policies pursued by the Federal Reserve during the 1970's sent interest rates on a roller coaster that discouraged long-term investment and induced lenders to channel their funds into speculative investments which held out the hope of returns in excess of inflation regardless of their contribution to productivity. The inability of the Federal Reserve to pursue a successful anti-inflationary monetary policy during the 1970's, despite well-publicized brief periods of monetary restraint, forced savers and lenders to include in interest rates a high inflation premium in anticipation of high money growth and continuing price increases. Recently, even during periods when inflation shows some signs of moderating as it has during the first half of this year, interest rates can remain quite high in large part because of policy uncertainties and lingering expectations of high inflation. This imposes a very high real interest cost on business borrowers and thus throws cold water on their willingness to invest. A recent Wall Street Journal article, examining the current attitudes of various businessmen, found that "they think that right now, the high interest rates are discouraging borrowing for capital investment." [7]

The impact of high interest rates on business investment was discussed at a recent Joint Economic Committee hearing by Mr. Don L. Gevirtz, Chairman of the Foothill Group, a small-business finance company:

[7] Wall Street Journal, May 20, 1981.

Let me give you a specific, Mr. Chairman, which has to do with a company's acquiring productive equipment. If you had to make a decision right now—if you ran a printing company in Dallas, Tex.—about acquiring a printing press, and you wanted to lease it for five years, you probably wouldn't make a decision to go ahead, because you would be locked into an interest rate of probably 19 or 20 or 21 percent. That interest rate would be fixed for the term. Therefore, when interest rates are high, it discourages the entrepreneur from making those productive equipment commitments, because he is waiting for the prime to go down so that his fixed rate commitment will be less.

Mr. Melvyn N. Klein, President of the Altamil Corp., provided another perspective:

The other direct aspect of high interest rates on the purchase of equipment is that these high rates discourage such purchases because in many areas your markets disappear or shrink terrifically because your customers don't want to buy when their cost of capital is as high as it has been recently. So you not only have a higher interest rate to yourself for the direct cost of purchasing and carrying that piece of equipment, but you have got the discouraging market aspect, which is that you're probably going to have a much longer time period before you recapture your cost because your customers generally tend to postpone buying decisions in this environment.

High interest costs have also sharply reduced economic activity in other interest-sensitive sectors. Perhaps the hardest hit are mortgage lenders and the housing industry they serve. Thrift institutions have suffered over $40 billion in deposit losses through disintermediation in the last 18 months, and the number of institutions in financial jeopardy has doubled to more than 250. The resulting surge in mortgage rates to 16 percent has plunged the housing and construction industry into a depression. In April, housing starts were 43 percent below the two million unit rate attained in 1978. Unemployment in the construction industry is 16.6 percent, well over double the national average.

The Democratic and Republican Members of the Joint Economic Committee believe that lower interest rates should be pursued as part of a program to resuscitate the Nation's productivity, by reviving capital investment, homebuilding, agriculture, small business and other interest-sensitive sectors that contribute to a healthy economy.

Recommendation No. 5: Improve Investment in Vital Public and Private Infrastructure.

Private sector investment thrives best in the context of an adequate and well maintained infrastructure. Proper macroeconomic policies or a well-designed capital depreciation program will not have a maximum effect without proper highways, ports, railroads, bridges, satisfactory water systems, utilities, and the like. Throughout the 1970's, however, State and local governments put relatively few investment dollars into building or maintaining the Nation's industrial infrastructure.

The steady shift of population from the Northeast and Midwest to the South and West has increased the demand for new roads, sewers, and waterworks. High and rising energy prices have spawned boom towns in many parts of the West that have seen little or no development in past decades. Furthermore, the infrastructure needed for offshore energy activity has strained the budgets of coastal State and local governments. Inadequate infrastructure also has become a problem in many of the older cities of the Nation where existing facilities are rapidly deteriorating. This problem is particularly

acute in the Northeast and Midwest, where adequate infrastructure must play a vital role in industrial revitalization. Recent Federal Highway Administration studies have found that one in five American bridges should be replaced and more than half the Nation's roads require major repairs. A 1976 Environmental Protection Agency study has estimated that local government requirements for water and sewage treatment to comply with Federal regulations amount to some $150 billion. The figure would be considerably higher today.

Despite the need for infrastructure investments, real capital expenditures by State and local governments fell during the past decade. While public works investment in constant dollars by the Federal Government has remained near its 1968 peak, such investment by State and local governments declined by 40 percent and 25 percent, respectively.

In part, this decline represents the aging of the baby boom generation and the resulting reduction in demand for schools and other local services. In some cases, responsibility for extending sewer and water lines has been transferred to private developers. But the decline in public spending on infrastructure also reflects real disinvestment by State and local governments in existing capital facilities. Particularly in cities suffering from a fiscal squeeze, the deferral of new construction or maintenance of existing facilities can be an attractive, seemingly painless way to bring the local budget into balance. However, over the long haul, the accumulated effects of deferred maintenance can deter the private sector investment that assures the community of continuing economic strength.

The present Federal system of categorical grants emanating from various agencies and departments may limit the ability of State and local entities to respond effectively to their infrastructure needs. Some revision or consolidation of existing programs may stimulate a more effective use of public funds and diminish the risks of waste and fraud occurring in these programs.

Recommendation No. 6. Reduce the Burden of Paperwork and Anticompetitive Economic Regulation, and Ensure That Social Regulation Meets Its Objectives in Cost-Effective Ways.

It is difficult to quantify the effect of government regulation on productivity, although various studies estimate that up to one-quarter of the productivity slowdown has been due to government regulation. A program to improve the productivity of the American economy must include measures to improve regulatory cost effectiveness and reduce the unnecessary costs of redundant, ineffective, wasteful, and conflicting regulations. Measures to sharply reduce the paperwork burden of Federal rules and regulations must be taken as well.

A recent study for the Joint Economic Committee [8] examined a number of ways in which regulation affects productivity. First, regulations divert management time and often require investment which competes with normal investment in productive plant and equipment, thus crowding out the latter to some extent. Labor ends up with less productive capital to work with than it would otherwise have, reducing its productivity. Second, by emphasizing engineering standards rather

[8] Gregory Christainsen, Frank Gollop, and Robert Haveman. "Environmental and Health/Safety Regulations, Productivity Growth, and Economic Performance: An Assessment." U.S. Congress, Joint Economic Committee, August 1980.

than performance standards, regulations often force investment in excess of that needed to achieve regulatory goals, further diverting capital from productive uses. Third for water and air pollution regulations, new plant and equipment is more stringently regulated, which induces businesses to retain existing—and less productive—equipment while delaying the introduction of new, more productive, capital. In addition, pollution control equipment requires manpower which adds to labor input without generating marketable output.

Many government regulations—particularly those affecting health, safety, and the environment—have contributed significantly to the overall well-being of consumers and workers. However, through poor planning and management, too many regulations have been issued which are wasteful, unnecessary, duplicative, or conflicting. These reduce productivity, and their effect cannot be ignored. Regulatory cost effectiveness must be improved, either through a cost-effectiveness requirement, a regulatory budget, or any other measure which causes Federal regulatory agencies to issue regulations which achieve their congressionally mandated goals while minimizing the cost on businesses and the public.

The burden of Federal paperwork must also be reduced. During the past year, in three paperwork management audits performed for the Joint Economic Committee, the General Accounting Office identified a number of ways in which regulatory agencies impose excessive paperwork on businesses. In one audit, involving the Department of Agriculture,[9] the GAO found over 1,100 recordkeeping and reporting requirements affecting the meat industry that had never been approved by the Office of Management and Budget, as required by the Federal Reports Act. In another case,[10] the Interstate Commerce Commission requires truck drivers to maintain a daily log of their on-the-job activities—to monitor regulations for reducing fatigue—which simply are kept on file by trucking firms and virtually ignored by the agency. GAO also found [11] that the Environmental Protection Agency distributed 18,000 questionnaires under the Clean Water Act to 18 of 38 target industries before instituting a quality control program. Many of the earlier questions had been so poorly worded that the information collected was useless. These are only a few examples of paperwork mismanagement discovered by the GAO, all of which impose an unnecessary cost on those forced to comply, diverting resources from more productive uses.

Eliminating anticompetitive economic regulation of certain industries can also help increase productivity. Until the mid-1960's, government regulation aimed primarily at achieving strictly economic objectives, such as control over monopoly or stabilization of a particular industry. It did so through intervention in the market place in the form of entry requirements or other aspects of economic activity. In specific industries, such as transportation, banking and communications, the effect of economic regulation generally has been to raise the level of consumer prices or rates above what they

[9] Comptroller General of the United States. "Department of Agriculture: Actions Needed To Enhance Paperwork Management and Reduce Burden." Report to the Chairman, Joint Economic Committee. Mar. 10, 1980.

[10] Comptroller General of the United States. "The Trucking Industry's Federal Paperwork Burden Should Be Reduced." Report to the Chairman, Joint Economic Committee, Mar. 3, 1981.

[11] Comptroller General of the United States. "The Environmental Protection Agency Needs To Better Control Its Growing Paperwork Burden on the Public." Report to the Chairman, Joint Economic Committee. May 15, 1981.

otherwise would be and to reduce the incentive for existing firms to introduce new products or cut costs.

Deregulation can help improve productivity by forcing increased competition. For example, deregulation of financial institutions has already generated lively competition, with many depositors now able to earn interest on checking account balances, and more services to customers.

Recommendation No. 7: Improve the Productivity of the Federal Government.

Although our recommendations so far have sought to improve productivity growth in the private sector of the American economy, Congress should also be concerned with improving productivity within the government itself. Just as America's businesses use scarce resources to produce privately consumed goods and services, the government also absorbs scarce resources in order to produce public goods and services. Improvement in government productivity will not increase the published productivity indices, since they do not include measures of government productivity, but there can be little doubt that such improvement would be of great benefit.

For example, given the desire to control the size of government, an improvement in productivity could permit more effective achievement of governmental objectives without expanding the budget or Federal employment. If the enhanced ability of the government to produce public goods and services were channelled primarily into infrastructure, as we discussed above, this would benefit private sector productivity. Conversely, an improvement in government productivity could permit the government to deliver its current level of goods and services while absorbing fewer resources.

In testimony before the Joint Economic Committee during the 96th Congress, the former Comptroller General of the United States, Elmer Staats, discussed the importance of government productivity:

> Although productivity has long been recognized as important for a strong national economy, its value in the government sector has largely been ignored. Yet, governments at all levels employ one out of every six American workers. The productivity of government workers is an important factor in the national economy.
>
> Broad measures of Federal Government productivity have been developed for about two-thirds of total Federal employment. These measures indicate that Federal productivity has been increasing about 1.2 percent per year since 1967, or slightly less than the depressed rates of increase in the private sector.
>
> There are significant benefits to be derived from improved productivity of the Federal work force. If overall productivity could be increased by only an additional 1 percent, 29,000 fewer workers would be needed to provide the present level of goods and services. Two potential changes could result from such an improvement in the use of people. The level of goods and services could be increased using the same number of workers, or the work force could be cut and result in budget reductions.

The General Accounting Office has published numerous reports recently on how the Federal Government could improve its own productivity. In one report the GAO argued that the Federal Government could recover billions of dollars in debts by adopting certain debt-collection techniques practiced by the private sector. In another report, the GAO found that a selected group of private hydroelectric powerplants was more efficient than a comparable group operated by the Federal Government. Another report found that private day-

care centers were operated more efficiently than those operated by federally subsidized nonprofit organizations and identified ways in which the federally funded centers could become more cost effective.

The GAO has recommended that Congress establish a National Productivity Council under a presidentially appointed chairperson which would guide and coordinate Federal programs aimed at improving national productivity and work with the private sector to develop a national productivity plan. GAO found that because no agency in the Federal Government acted as a focal point for productivity concerns: [12]

Federal programs directly related to productivity improvement, now totaling more than $2 billion annually, are funded and operated without any central review, direction, coordination, or evaluation.

There is no recognized spokesperson for productivity concerns.

There is no open channel for airing private sector problems and concerns about productivity-related policies.

GAO recommended development of a national productivity plan outlining what the government is doing and should be doing to improve productivity.

Waste by Federal agencies also reduces productivity by diverting resources from their primary purposes. Eliminating waste would clearly improve Federal productivity by increasing the ability of Federal agencies to carry out their legislative mandates with the limited resources at their disposal.

Recommendation No. 8: Encourage Business To Develop a New Emphasis on Long-Run Competitiveness in Product Development, Production, Engineering, Distribution and Marketing.

The recommendations we have made so far to improve government policy will help restore our productivity growth. It has become widely recognized that there is also much that the private sector can do on its own that would significantly enhance productivity. Most importantly, American business management could better focus corporate policies on productivity, with more emphasis on such productive long-run actions as developing new products, creating new markets and technologies, enhancing the quality of their products, upgrading the skills, and training of production workers, and looking to long-run business survival in an increasingly competitive world economy.

Following a long period of steady growth and low inflation during most of the 1950's and 1960's, the changes which occurred in the economy during the 1970's inhibited corporations from making the long-term investments that enhance productivity in favor of short-term investments with quicker payoffs. The higher and unpredictable inflation of the 1970's contributed much to the turmoil and uncertainty businesses faced, as we have discussed. So did the gyrating interest rates during the decade, the energy crisis, the growth in government regulation, and the relentless drive for market share here by foreign competition in certain industries. All of these contributed to a business climate that discouraged long-term productive investment.

[12] Comptroller General of the United States. "Stronger Federal Effort Needed To Foster Private Sector Productivity." Report to the Congress of the United States, Feb. 18, 1981, p. ii.

According to two witnesses who recently appeared before the Joint Economic Committee, Professors Robert Hayes and William Abernathy of the Harvard Business School, a change in business management theory and practices during the 1970's also contributed to the productivity slowdown.

Hayes and Abernathy found, by comparing modern American business practices with those of successful Japanese companies, that American managers had placed less emphasis than the Japanese on using long-term technological superiority as a competitive weapon. Instead, American managers had focused more heavily on shorter term business goals such as cutting costs and improving financial returns.

As a consequence, too many American businesses have given us imitative rather than innovative product design, a reliance on capital goods producers to develop new technologies rather than through in-house equipment design and development, and an emphasis on merging with other companies as a way of surviving the vicissitudes of competition rather than by developing superior products at lower cost.

While the business emphasis on short-term returns is largely the result of inflation and the structure of the tax code, and is therefore correctable by government actions, Hayes and Abernathy argue that management practices must become more tuned to productivity:

> The responsibility for these problems may rest in part on government policies that either overconstrain or undersupport U.S. producers . . . . It will also require some fundamental changes in management attitudes and practices.
>
> The key to long-term success—even survival—in business is what it has always been: to invest, to innovate, to lead, to create value where none existed before. Such determination, such striving to excel, requires leaders—not just controllers, market analysts, and portfolio managers.

What should be done by American industry to enhance productivity? The business practices of foreign industry, particularly the Japanese, as well as the practices of successful American firms, can provide some direction for extricating ourselves from the current productivity muddle.

According to witnesses who appeared before the Joint Economic Committee, Japanese productivity growth has been enhanced by their emphasis on product quality. Within the Japanese system, quality means more than just having a low product rejection rate—it involves the whole approach to the production process: training workers to have pride in their work, developing an environment which encourages workers to expose quality problems and correct them, and checking all materials for defects.

The emphasis on quality is already being adopted by some American companies. According to its president, Thomas J. Murrin, the Public Systems Co. of Westinghouse Electric "made an emphasis on quality throughout our entire production process one of our key strategies for productivity improvement." Also, the Motorola Co. statement said:

> The classic definition of productivity is output per man-hour. We firmly believe that a high quality product or service is a greater output than a poor quality product or service. In addition, by building a quality product, we avoid the wasted man-hours required to repair faulty products and eliminate the man-hours of labor that wind up in the scrap barrel in many factories.

Participatory management is another successful Japanese technique for improving productivity which is being adopted by American firms. Recognizing that no one knows as much about a job or a product—and how to improve it—as the person who works on it, many