BUDGET OF THE UNITED STATES GOVERNMENT

FISCAL YEAR 1991

THE BUDGET DOCUMENT

This single volume, the *Budget of the United States Government, Fiscal Year 1991* replaces several publications previously issued by the Office of Management and Budget:

- *United States Budget in Brief;*
- *Budget of the United States Government—Appendix;*
- *Special Analyses, Budget of the United States Government;*
- *Historical Tables, Budget of the United States Government;*
- *Management of the United States Government; and*
- *Major Policy Initiatives.*

The information presented in the above mentioned volumes is incorporated, in somewhat revised form, in this document.

GENERAL NOTES

1. All years referred to are fiscal years, unless otherwise noted.
2. Detail in the tables, text and charts of this volume may not add to the totals because of rounding.

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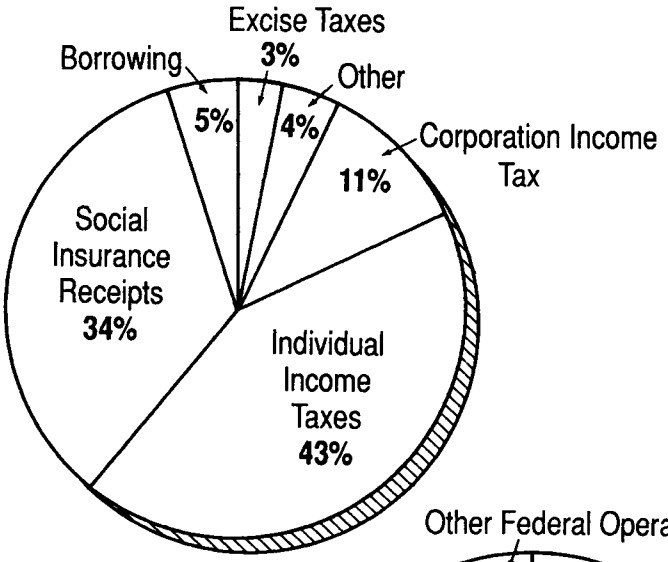

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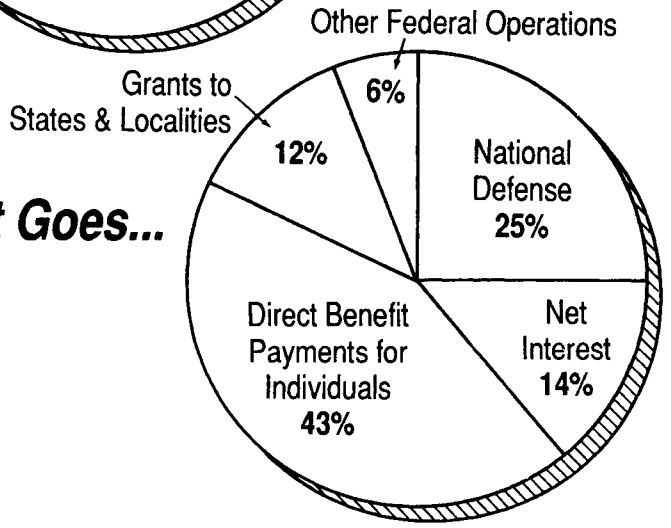

RECEIPTS, OUTLAYS, DEFICIT/SURPLUS UNDER THE PRESIDENT'S PROPOSED POLICY

(In billions of dollars)

	1989	1990	1991	1992	1993	1994	1995
Receipts	990.7	1,073.5	1,170.2	1,246.4	1,327.6	1,408.6	1,486.3
Outlays	1,142.6	1,197.2	1,233.3	1,271.4	1,321.8	1,398.0	1,476.9
Surplus or Deficit (+/−)	−152.0	−123.8	−63.1	−25.1	+5.7	+10.7	+9.4

I. THE BUDGET MESSAGE OF THE PRESIDENT

To the Congress of the United States:

I have the honor to present the *Budget of the United States Government for Fiscal Year 1991.*

The American economy is now in its eighth consecutive year of expansion and growth. It is essential that the growth of the economy continue and increase in the future. The budget is designed to achieve that goal.

The budget has five broad themes:

- ***Investing in Our Future***—With an eye toward future growth, and expansion of the human frontier, the budget's chief emphasis is on investment in the future. It proposes: a capital gains incentive for long-term private investment and new incentives for family savings; record-high amounts for research and development, space, education, and Head Start; a major investment in civil aviation; and a large increase in spending to attack the scourge of drugs. At the same time, the budget maintains a strong national defense while reflecting the dramatic changes in the world political situation that are taking place; and it fulfills responsibilities to protect the environment, and preserve America's cultural heritage.
- ***Advancing States as Laboratories***—The budget recognizes the emergence of new ideas and initiatives originating at the State and local level. The Federal Government will foster such innovation and experimentation in numerous fields, from transportation to health, through waivers of certain rules and regulations, and through demonstration grants.
- ***Reforming Mandatory Programs***—Entitlement and other mandatory spending now constitutes nearly half the budget, not counting an additional 14 percent for interest. The budget provides for full payment of social security benefits and funds growth in health, low income and other mandatory programs. However, it proposes reforms where warranted to slow the growth in some of these programs and thus leave more room in the budget for priority initiatives.
- ***Acknowledging Inherited Claims***—The budget faces up to such inherited claims as the cleanup of decades old environmental damage at nuclear weapons facilities. It analyzes potential claims from unfunded annuities and Federal insurance programs. It assesses the growing volume of defaults in Federal credit programs and proposes essential credit reforms.
- ***Managing for Integrity and Efficiency***—The budget contains suggestions for reforms in the way Congress deals with the budget. It provides more resources and suggests improved methods for managing the vast Federal enterprise better. It identifies low-return domestic discretionary programs where a smaller investment of budgetary resources is warranted.

The budget meets the deficit target of $64 billion for 1991 established by the Gramm-Rudman-Hollings law, without raising taxes. It would balance the budget by 1993 as required by that law, begin reducing debt, and protect the integrity of Social Security.

Each of the themes outlined above is discussed in more detail in Section One of the budget, the Overview. The customary tabular and appendix material is contained in Section Two.

I look forward to working with the Congress in the weeks and months ahead to produce a budget that meets the Gramm-Rudman-Hollings target, advances the Nation's essential interests, and keeps the economy on the path of continued growth.

GEORGE BUSH

JANUARY 29, 1990

II. DIRECTOR'S INTRODUCTION TO THE NEW BUDGET

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GREEN EYESHADES AND THE COOKIE MONSTER

If anything were meant for viewing through proverbial green eyeshades, it would seem to be the Federal budget. The typeface is small. The text is tedious. Tables are seemingly endless.

The sheer size of the budget makes it seem like a monster. It contains almost 190,000 accounts. At the rate of one per minute, eight hours per day, it would take over a year to reflect upon these! The budget's annual outlays are larger than all countries' economies except those of the United States, Japan, and the Soviet Union. (The Federal budget is roughly the size of the entire West German economy.) Clearly, at some point, green eyeshades must be put aside. Detail must be considered; but the capacity to abstract should not be lost.

Of course, with or without green eyeshades, monsters do not naturally invite examination. Still, if a monster is present, one might address certain threshold questions: Is it threatening or potentially helpful, and how is one to tell? The answers are not always as obvious as the questions.

On "Sesame Street," the children's educational television program, there is a wonderful character known as Cookie Monster. As all monsters are, Cookie Monster is initially intimidating. His manner is gruff. His clumsiness occasionally causes damage.

But quickly, Cookie Monster comes to be seen as benign—indeed, downright friendly. He has a few bad habits. He cannot resist gobbling up anything and everything that might be consumed—especially cookies. And he cannot quite control the way in which he spews forth crumbs. He is the quintessential consumer. Yet clearly, he means no harm.

The budget, for all its intimidating detail, might be seen similarly: as the *Ultimate Cookie Monster*. Its excessive tendencies toward consumption are not exactly ennobling. (It does not ordinarily present itself as seriously concerned with investment.) But at the same time, its underlying motivation is clearly not malevolent. What harm it may cause is largely unintended. Its massive presence might be understood as little more than a compilation of cookies received, cookies crumbled, and crumbs spewed forth.

Yet apt though the Cookie Monster perspective may be, it does not suffice. It is not quite fair to either Cookie Monster or the budget. In reality, a budget is not just a monstrous mass of cookies and crumbs. It is more: an implicit statement of values and expectations for the future. Inescapably, it is headed somewhere—or other. To gain a meaningful sense of the whole, and where it may be headed, one must look beyond green eyeshades and the Cookie Monster. One must frame the budget from several broader (and more serious) perspectives. This introduction tries to help do that.

Among the additional perspectives are these: a global historical perspective; a conventional deficit-estimating perspective; a capital budgeting perspective; a perspective that gives greater weight to future liabilities; another that attends to investment in the future; and finally, a congressional perspective. These are discussed (sequentially) below.

AND THE WALL CAME A'TUMBLIN' DOWN . . .

Looking a bit beyond Cookie Monster to the television news, one is struck with a rare impression: there may be a compelling pattern to the flow of current events. It is not represented in the budget detail by any quantitative "baseline," nor any conventional statistical

measure. It was captured visually by a single dramatic symbol, beamed around the world, and etched in the mind of people everywhere: the fall of the Berlin wall.

To put the symbolic fact more clinically: State-centered, command-and-control systems seem to be decomposing. The Soviet Union has been forced to explore the virtues of restructuring, decentralization, and openness. Communist regimes in Eastern Europe have been falling like dominoes. The Iron Curtain has been opened. And the drama has not been confined to Eastern Europe. Just as liberated celebrants have cheered the opening of the Berlin wall and the decline of communist dictators, so too have liberated Panamanians celebrated the fall of the dictator in near-by Panama.

While it would be naively euphoric to consider this pattern "the end of history" (even in the limited Hegelian sense), clearly the sudden and dramatic shift toward pluralist democracy has far more than the ordinary historical significance. The events of 1989, and what they will have unleashed, may one day rise to a place with those of 1688, 1776, or 1789. This is not small stuff. It is another giant leap of the human spirit yearning to breathe free.

Yet this great historical shift has been almost trivialized in its translation into public debate about the budget. The issue has been framed as: "How big is the 'peace dividend'?"—and, in effect, "How can I get mine?" These are issues that the budget and the political system must treat. They are discussed further in the budget. But they are second-order issues at best.

Ahead of them in line, surely, ought to be these points:

- The favorable pattern of recent events has not been caused exclusively by the political and economic bankruptcy of particular state-centered regimes. It has also resulted from U.S. (and allied) military and economic strength. These, in turn, have resulted from market-oriented economic policies and sound public and private investment policies. It would be a highly unfortunate irony if—just as the world were affirming more market-oriented and investment-oriented principles—the United States were to do anything other than strengthen its commitment to these very principles.
- As the world moves away (at whatever pace) from an emphasis on the risk of traditional military superpower conflict, the relative importance of U.S. economic strength only increases. Increased economic strength is essential to inspire and to assist evolving lesser powers. And it is fundamental to success in the global competition with rising economic superpowers.
- Thus, there is a first-order issue for the budget (and the economic policy it represents): How can it best preserve and build on America's strengths, while advancing the American economy toward even greater capacities for leadership and growth? If the "dividend" metaphor must be applied to the budget: How can policy best assure that there is a continuing *growth dividend?*

HOW BIG IS THE DEFICIT?—LET ME COUNT THE WAYS

In considering this issue, many traditional analysts turn first to the size of the budget deficit. This is not necessarily as relevant a starting point as many argue. But it is relevant.

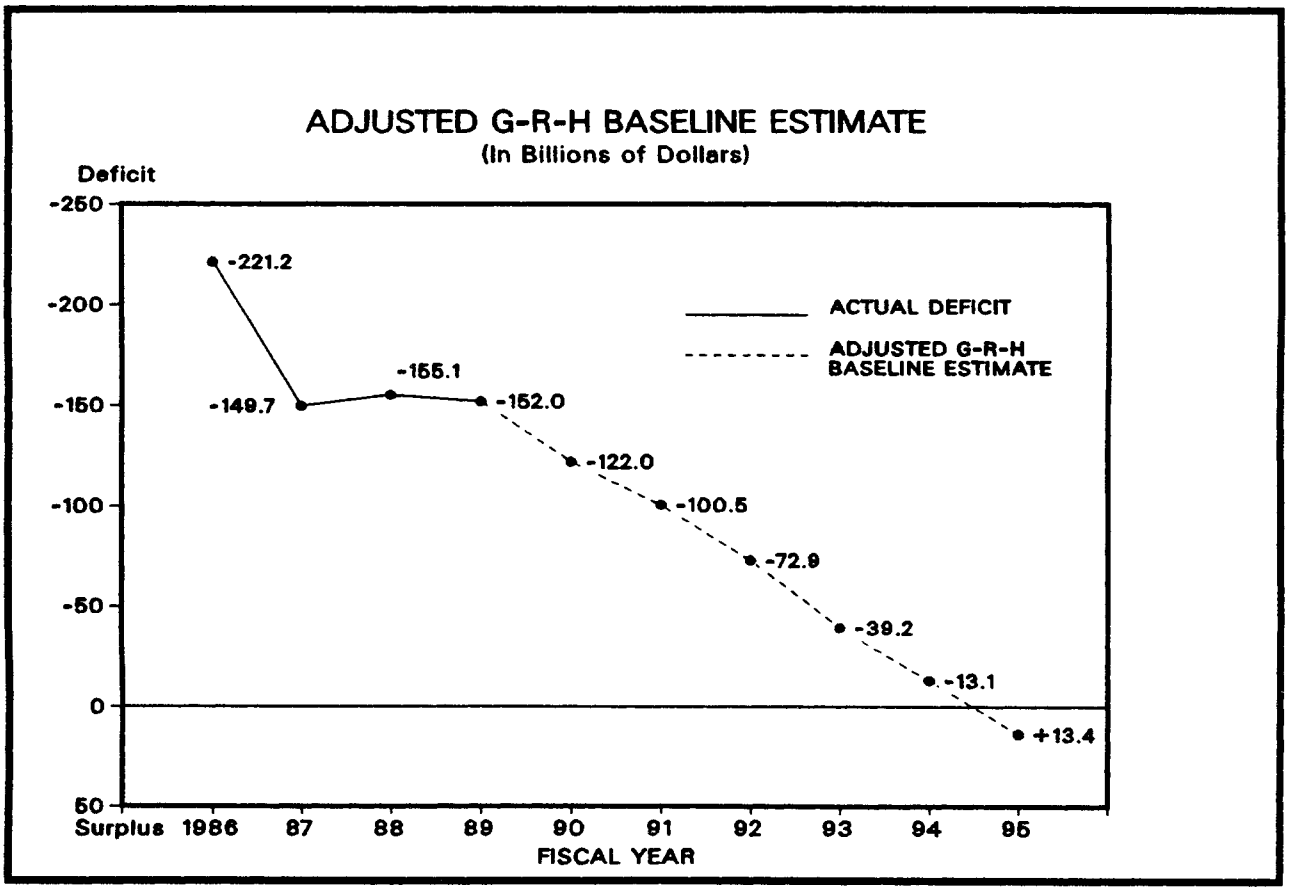
Unfortunately, a meaningful answer to the question—How big is the deficit?—is not quite as simple as the question. This budget attempts to answer the question from a wide range of relevant perspectives.

- ***The "Gramm-Rudman-Hollings (G-R-H) Baseline Deficit"***—This perspective is flawed. It biases analysis toward excessive outlay growth. But it is required by law. It constructs an estimate that uses the Administration's economic and technical assumptions; assumes entitlements grow with the beneficiary population and with prescribed benefit changes; and assumes discretionary programs grow with inflation (in effect, treating them as permanent entitlements). It assumes *no change in current law.* From this perspective, the estimated deficit for the current fiscal year (1990) is $122 billion; and for the coming

budget year, 1991, it drops to $84.7 billion. It moves to surplus in fiscal year 1994.

- *"Adjusted G-R-H Baseline Deficit"*—The G-R-H baseline, an artificial construct, is used by some for reference purposes. Even for its advocates, it can be misleading. This year, for example, the Food Stamp authorization for appropriations expires. It will almost certainly be extended in some form, but G-R-H does not assume that. Conversely, the decennial census of 1990 will not be repeated in 1991. But G-R-H implicitly assumes that it will be. If one adjusts for these anomalies, the adjusted G-R-H baseline deficit for 1991–95 would be as in the chart below.

This suggests that without major legislative action—but *assuming continued economic growth*—the deficit would move toward surplus in 1995. This would mark a steady, although slow, pattern of correction from the deficit high of $221.2 billion reached in 1986.



- *The "President's Policy Deficit"*—The President's investment-oriented proposals would help assure that the economic growth assumed in the baseline is actually achieved. Other policy proposals would further improve the rate of deficit reduction by reducing spending on low-return programs, reforming selected mandatory programs, and charging appropriate fees. These additional program savings (relative to the G-R-H baseline) are discussed further in Parts V and VII below. Their total contribution is $36.5 billion for 1991, rising to $95.8 billion for 1995.

As a result, the Administration estimates that implementation of the President's budget would meet (and slightly surpass) the legally required G-R-H deficit targets of $64 billion in 1991 and zero in 1993. The President's Policy deficit would be $63.1 billion in 1991, moving

to surplus for 1993-95 (even after adjusting to assure Social Security integrity). (See table.)

Overall spending for 1991 would still *increase*—by about 3.0 percent. Almost every Department of the government would have higher budget outlays than it did the previous year. But the deficit would be reduced because estimated receipts would increase even more—by $96.8 billion or 9.0 percent (without "ducks"). *This reflects the "flexible freeze" at work:* spending growth is held at a level slightly below the inflation rate; while revenues increase at a higher rate on the strength of economic growth. This is summarized in the table, "President's Policy: Outlays, Receipts, and Deficit Improvement for 1991."

PRESIDENT'S POLICY: OUTLAYS, RECEIPTS, AND DEFICIT IMPROVEMENT FOR 1991

(In billions of dollars)

	1990	1991	Change Amount	Change Percent
Outlays:				
Department of Defense	286.8	292.1	+5.4	+1.9%
Non-Department of Defense	910.4	941.2	+30.7	+3.4%
Total Outlays	1,197.2	1,233.3	+36.1	+3.0%
Receipts:				
Current Law	1,072.8	1,156.3	+83.5	+7.8%
New Measures	0.6	13.9	+13.3	+1.2%
Total Receipts	1,073.5	1,170.2	+96.8	+9.0%
Deficit	123.8	63.1	-60.7	-49.0%

- ***The Treatment of Social Security***—Current law defines Social Security as "off-budget", but requires its inclusion for purposes of G-R-H deficit calculations. Social Security is also included in traditional "consolidated" or "unified" deficit estimates. There are many good and important reasons to continue to include Social Security in these calculations.

  But in recent years a problem has arisen. The increasing annual Social Security operating surpluses have masked the true size of the underlying non-Social Security operating deficit. In effect, the surpluses have allowed more non-Social Security spending than might otherwise have been the case. If this were long to continue, it would result in an excessive burden of debt for future generations. It would thus undermine the effect of the build-up of reserves intended for retiring baby-boomers.

  To address this problem, without doing violence to the traditional concept of a consolidated budget, the Administration proposes to establish a "Social Security Integrity and Debt Reduction Fund." It would receive each year, as outlays, an amount equivalent to an increasing portion of the

projected Social Security operating surplus (reaching 100 percent in 1996). It would be obliged to use these outlays to reduce Federal debt and thus leave a more manageable financing burden for future generations. This Fund would be linked with a continuing obligation to meet a G-R-H deficit target of zero (i.e., a permanent balanced budget) starting in 1993. Thus, the proposal *would effectively prevent the government from spending Social Security receipts on non-Social Security purposes.* The proposal is discussed further in Parts VI-A and VII-A below. Its effects on the deficit are displayed along with the other ways of looking at the deficit in the table: "Deficit/Surplus—Under Selected Definitions."

DEFICIT/SURPLUS—UNDER SELECTED DEFINITIONS

(In billions of dollars)

	1990	1991	1992	1993	1994	1995
"G-R-H Baseline Deficit/Surplus"	-122.0	-84.7	-55.5	-20.1	7.9	36.3
Adjust for outlay anomalies:						
Food Stamps	--	-16.2	-17.0	-17.7	-18.6	-19.5
Census	--	1.0	1.3	1.3	1.5	1.5
Debt service	--	-0.6	-1.7	-2.6	-3.9	-5.0
Total "Adjusted G-R-H Baseline Deficit/Surplus"	-122.0	-100.5	-72.9	-39.2	-13.1	13.4
Adjust for policy recommendations	0.6	36.5	46.9	57.5	75.6	95.8
Adjust for "Social Security Integrity and Debt Reduction Fund"	--	--	--	-14.1	-53.6	-101.8
Total "President's Policy Deficit/Surplus" excluding "gimmicks" (speed-ups)	-121.4	-64.0	-26.0	4.2	8.9	7.4
Adjust for on-off budget:						
Exclude Social Security	-62.0	-80.3	-93.1	-107.4	-124.2	-137.2
Total "On-Budget Policy Deficit/Surplus"	-183.4	-144.3	-119.1	-103.2	-115.3	-129.8
Adjust for G-R-H and speed-ups:						
Include Social Security	62.0	80.3	93.1	107.4	124.2	137.2
Include withholding and other speed-ups	--	1.0	--	--	--	--
Total "President's Policy Deficit/Surplus" including speed-ups	-121.4	-63.0	-26.0	4.2	8.9	7.4
Adjust for "Consolidated Budget":						
Include asset sales	--	1.6	1.6	1.6	1.6	1.6
Include Postal Service	-2.4	-1.7	-0.7	-0.1	0.1	0.4
Remove nondefense spendout adjustment	--	0.1	--	--	--	--
Total "Consolidated Budget Deficit/Surplus"	-123.8	-63.1	-25.1	5.7	10.7	9.4

- ***The Effect of Alternative Economic Scenarios***—In considering the deficit—by whatever definition—it is important to consider its sensitivity to economic variables. For a discussion of these sensitivities, see Section Two, Part I: "Note on Economic Assumptions and Sensitivities." The single most important variable affecting the size of the deficit is probably the real economic growth rate. As a practical matter, the net deficit-reducing effects of economic growth (or its absence) are likely to be far greater than the effects of a so-called peace dividend.

  As a general rule of thumb, a sustained one percent additional increase in real GNP growth—with all else equal—would reduce the deficit by an additional $18 billion in 1991 and an additional $98 billion in 1995. (A sustained one percent lesser increase in real GNP growth—all else equal—would have roughly the equivalent numerical effect, but with the sign changed.) For those seriously interested in either achieving greater deficit reduction or freeing up resources for greater spending, this underlines the importance of pursuing policies likely to maximize the *growth dividend.*

  The economic assumptions used by the Administration are toward the optimistic end of the credible range. But the Administration's assumptions are plausible and achievable.

  The Administration first presented its own economic assumptions in July 1989—at which point they were also judged to be at the optimistic end of the credible range. Intervening performance has, in fact, been highly consistent with the Administration's forecast. But that does not mean either that macroeconomic science has improved substantially, or that the Administration will always be so fortunate as to be correct.

  In developing the budget, the Administration formally considered several alternative economic scenarios. Two of these are discussed in the "Note" in Section Two, Part I. Both of these are also plausible. One is slightly more optimistic, and one more pessimistic, than the scenario actually adopted. These alternative scenarios are specifically described in the Note. If the President's Policy deficit were presented with either the higher growth or the lower growth assumptions, the deficit (or surplus) would appear as follows (after adjusting to assure Social Security integrity).

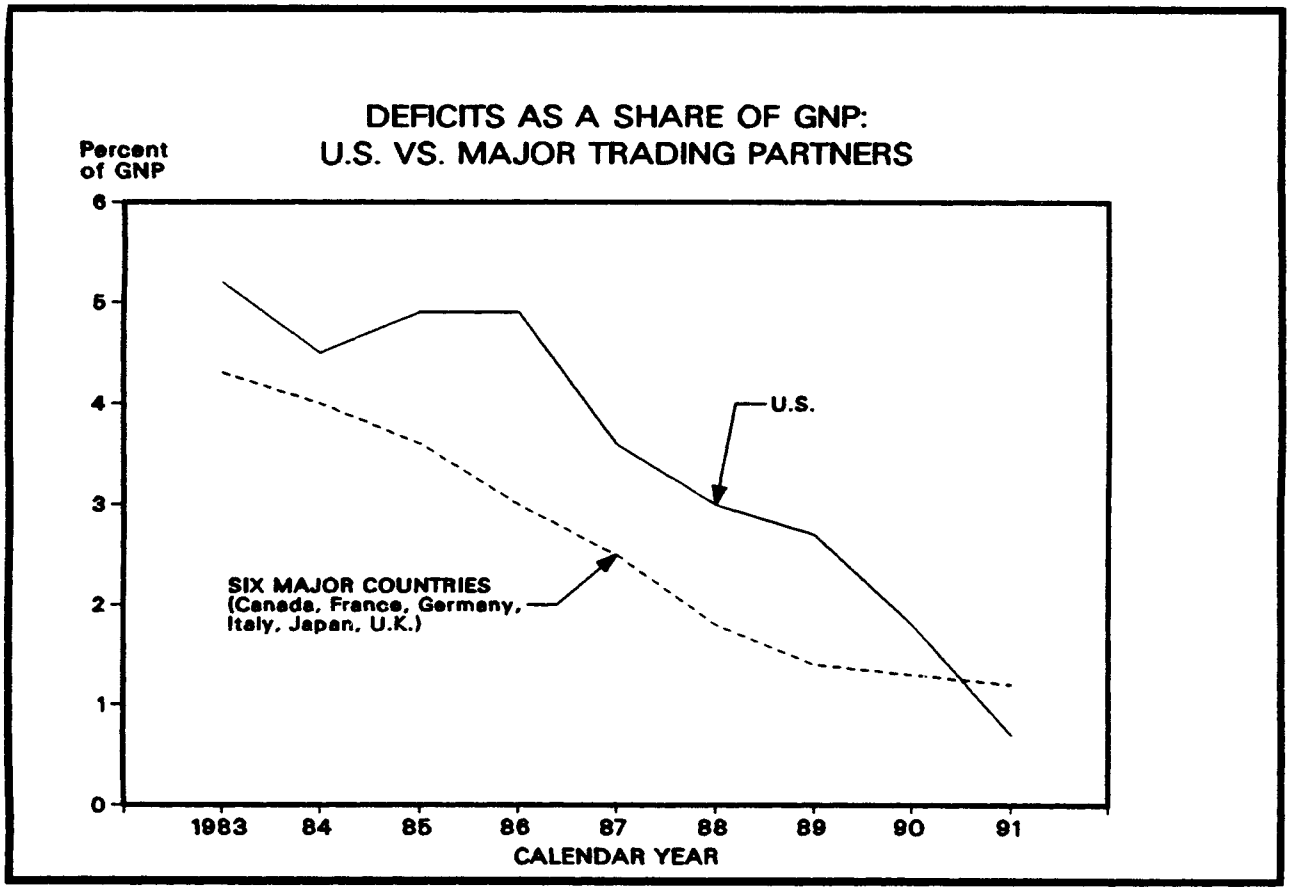
DEFICIT (–)/SURPLUS (+) UNDER ALTERNATIVE ASSUMPTIONS

(In billions of dollars)

	1991	1992	1993	1994	1995
Higher growth scenario	-54.6	-16.9	+15.1	+24.7	+31.6
Lower growth scenario	-77.5	-48.4	-27.2	-32.9	-42.4

- ***Deficits as a Share of GNP***—Meeting the G-R-H deficit target for 1991, as proposed by the President, would reduce the consolidated deficit to about 1 percent of GNP. The deficit would thus fall clearly within the "normal" range for most of America's

major trading partners. In any case, it would mark a significant improvement from the 5.2 percent level of 1983 (6.3 percent for the fiscal year). The pattern is suggested by the chart, "Deficits as a Share of GNP: U.S. *vs.* Major Trading Partners." While the trend is favorable, however, it should not be given excessive weight. The United Kingdom and Japan are both running surpluses—but with very different real growth rates. *As with all measures of the deficit, it is necessary to get beyond this somewhat superficial measure, to an examination of the underlying economic policies and their relation to the future.*



- ***Deficit Effects of Capital Budgets***—The current budget concept—essentially a "cash" budget—was developed to conform with the President's Commission on Budget Concepts (1967). The "cash" perspective is especially useful for determining needs for financing in the public debt market. Indeed, it is essential. That is why, regardless of whether trust funds are treated as "on" or "off" budget, there must be some consolidated accounting that shows the total governmental cash position. *But if one is seriously interested in the effects of budget policy on the future, one must get beyond the cash budget frame of reference represented by the G-R-H and consolidated deficit calculations.* One needs a better sense of future liabilities and of the extent to which current income and borrowing are financing investment for the future (as opposed to current consumption and transfers).

With this perspective in view, many have criticized the Federal Government's "cash" budget. Some have argued that the Federal Government should adopt one form or another of capital budget and/or a budget that better distinguishes between

trust funds, governmental operating needs, and activities conducted by Government-sponsored enterprises.

In order to begin to address this thoroughly appropriate interest in getting beyond cash budgeting, the President's budget is re-configured as it might appear under the conceptual approach suggested by the General Accounting Office and the approach used by the state of California. These approaches are strictly illustrative—and are presented in Section Two, Part II: "Note on Alternate Approaches to Budget Presentation." They are not intended—now, or in the future—to displace the cash budget; but rather, they are intended to supplement it.

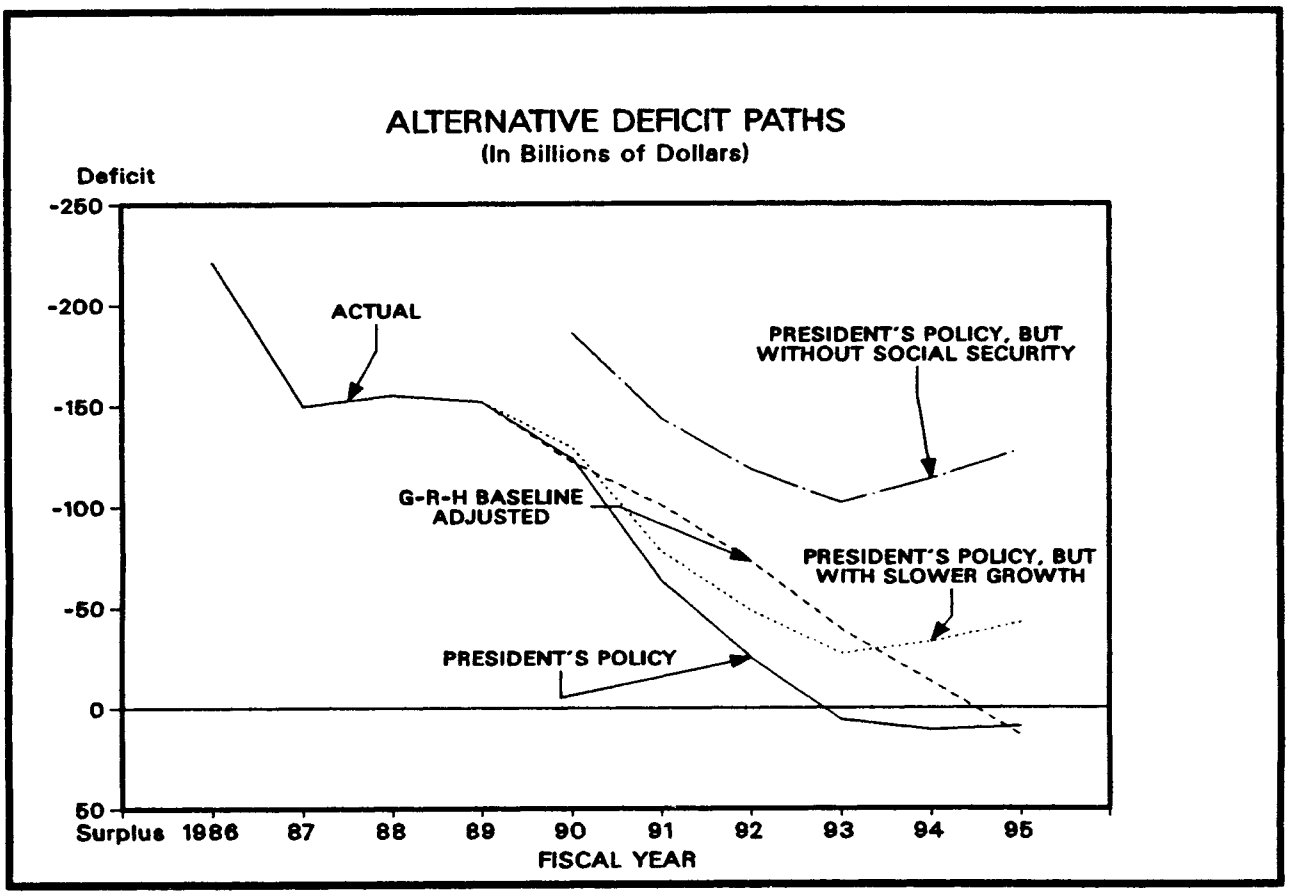
While these additional perspectives are useful, it is clear that they, too, are not fully satisfactory. In going only as far as they do, they tend to do little more than confirm what is now generally accepted wisdom: that the Federal Government invests a relatively small percent of its annual expenditures in capital; and that there is a sharp dichotomy between the operating surpluses in certain trust funds and the operating deficits that characterize the rest of government. They necessarily suggest, but do not satisfactorily settle, many difficult issues of definition as to what is and is not investment. They do not adequately treat "intellectual capital" and "human capital," for example. And they do not provide a dynamic picture of expected future liabilities and future returns.

Stepping back from this surfeit of deficits—all differently conceived and defined—one might summarize where the collection of different deficit pictures suggests things may be, and where they may be headed.

- *First*, by several different deficit measures, *the consolidated Federal deficit seems, at worst, to have stabilized.* If the President's policies were adopted, this pattern of stabilization would obtain, in the near term, even if Social Security were excluded from deficit calculation. *The pattern of continuous erosion that characterized the early- and mid-1980s seems to have been broken.* By many measures, the deficit is headed toward improvement—*assuming that economic growth continues.* Although further progress is not guaranteed, the change in the underlying pattern must be viewed as welcome. See chart: "Alternative Deficit Paths."

  The proviso concerning the necessity for continued economic growth is fundamental, however. The economy is in its eighth consecutive year of growth. This is the second-longest period of continuous growth in America's history. (Post-War Japan has enjoyed two longer periods of growth: one of 20 years, 1953–73 and one of 15 years, 1975 to the present.) There is reason to suggest that the traditional notion of the inevitability of a tight business cycle may be overtaken. But, to underline the obvious: Growth is not automatic. It depends on growth-oriented policies being pursued not only by the Administration, but also by Congress and the Federal Reserve.

- *But second, stabilization of the underlying deficit should not lead to complacency.* Complacency would lead to a loss of fiscal discipline. And even with stabilization, deficits mean rising debt. America's recorded Federal debt is already approaching three trillion dollars. (See Parts III–A and VI–A.) That is not necessarily bad per se. It depends on whether or not the debt is being used in conjunction with policies that will increase future productivity, growth, and capacities for debt service—and whether future hidden liabilities are being kept within reasonable bounds. Here, unfortunately, is where conventional Federal deficit accounting and budget presentation have been woefully inadequate. And here is where there is legitimate cause for concern—as is discussed further below.



HIDDEN PACMEN

The problem with relying solely on the consolidated cash budget—or even on that plus a capital budget—is that it does not give a full picture of the Federal "balance sheet." There is a host of technical reasons why it is not now possible to present a complete and valid Federal balance sheet—not to mention a valid projection of the future balance sheet. But it is possible to do a better job of highlighting potential liabilities, as well as important areas of investment, which have significant future effects. This budget presentation attempts to move in that direction.

One curious thing about future Federal liabilities is that many of them are not yet fully visible. Their particular nature varies. But each is like a hidden PACMAN, waiting to spring forward and consume another line of resource dots in the budget maze. These hidden PACMEN are discussed in some detail in Parts VI-A and VI-B below. A few introductory points may help outline the problem:

- ***Rising Costs of Health Care***—A quarter of a century ago, health care expenditures consumed about 6 percent of America's GNP. Now, that share has almost doubled, to 12 percent. Within the growing Federal budget, the share has risen even more rapidly, from less than 5 percent in 1970 to a projected 15 percent in the early 1990s. Obviously, this is a trend that cannot be sustained forever—or health care costs would drive out all else. There are, nonetheless, increasing demands to assure health insurance coverage for those not now covered, and to provide better financing for long term care. Each of these could entail an additional multi-billion dollar annual bill. Yet the projected health expenditure obligations of current law are not fully covered by projected future receipts. The estimated present value of unfunded liabilities (the actuarial deficiency)

for Medicare hospital insurance alone could be over *$250 billion.* (See Parts V and VI-A.)

- ***Rising Budgetary Claims of Mandatory Programs***—In President Kennedy's Administration, transfer payments to individuals comprised about a quarter of the Federal budget. Now they consume almost half. So-called "mandatory" programs—selected payments to individuals (entitlements) and other automatic spending programs—have grown from 34 percent of the budget in 1970 to roughly half the 1991 budget—and will reach a projected 57 percent for 1995. (Mandatory programs plus net interest expenditures account for almost 62 percent of the budget.) Since these programs generally have broad-based and well-represented beneficiary populations, they tend to have a powerful claim on resources, and grow faster than the economy as a whole. Yet again: It would seem obvious that this pattern of more rapid growth cannot be extended indefinitely. (See Part V.)
- ***Unfunded Retirement Program Liabilities***—There is much talk about the projected build-up of Social Security reserves to cover the anticipated obligations to the baby-boom generation when it reaches retirement. The medium term build-up intended by (and projected under) current law is, indeed, enormous. But even so, over the long term, under some assumptions, the present value of current-law obligations minus projected receipts could be a negative number. This is a speculative matter with a high degree of uncertainty. (See Part VI-A.) Somewhat less speculatively, there are clearly identifiable major shortfalls in unfunded Federal employee retirement programs—although these should be able to be serviced by future contributions. And the Railroad Retirement System, although not fully a Federal responsibility, is substantially underfunded—with a reported actuarial deficiency of *$14 billion.*
- ***Obligations to Clean Up Federal Facilities***—For a variety of reasons, the Federal Government historically has not been prompt in attending to environmental clean-up at many of its facilities. For reasons of both law and policy, the pattern of the past is now changing. But the bills are yet to be fully paid. The present-value cost of already-identified future clean-up obligations and waste management improvements at Federal facilities over the next 30 years is on the order of *$140-200 billion.* (See Part VI-C.)
- ***Contingent Risks of Federal Credit Programs and Government-sponsored Enterprises (GSEs)***—The Federal Government's direct and indirect credit subsidies are far more extensive than is commonly appreciated. In housing, over a trillion dollars in outstanding mortgages have been guaranteed by Federal agencies or securitized by GSEs. In agriculture, the Farmers Home Administration has accounted for 15 percent of all farm debt outstanding, and the Farm Credit System has financed another 26 percent—for a combined total of about $55 billion. In education, nearly all student loans are Federally guaranteed. The government helps provide credit for export finance, rural utilities, small businesses, and minority-owned businesses. The purposes of all this credit support are generally worthy. But there can be no denying that there is an enormous and increasing Federal exposure—approaching one trillion dollars in direct and federally guaranteed loans alone. This necessarily involves a risk of substantial future claims against the government. These claims are virtually certain to be in the *tens of billions of dollars.* Without continued economic growth, and the credit reforms proposed by the President, the claims would be substantially higher. (See Part VI-B.)
- ***Contingent Risks of Federal Insurance Programs***—The Federal Government funds programs that directly insure individuals and firms against many hazards not covered by private insurance. These formal insurance programs cover bank deposits, pensions, veterans life insurance, crops, floods, overseas private investment, nuclear risks, and war risks. The total face value of this insurance coverage (excluding Medicare) exceeds four trillion dollars. Deposit insurance accounts for about 70 per-

cent of this total. But the remainder is still over one *trillion* dollars. Clearly, the Federal Government is not at risk for the entire face value of the insurance. But again: The likely future claims are virtually certain to be in the *tens of billions of dollars.* (See Part VI-B.)

When one adds up all these likely future claims—unfunded health and retirement programs, environmental clean-up obligations, credit risks, and insurance risks—one can produce a rather intimidating total. (See especially Parts VI-A and VI-B.) But it is important to put this, too, in perspective. The claims do not come due all at once. Indeed, they come due over an extended period of time. If one assumed that the likely range of unfunded claims were spread smoothly over the extensive time period in which they are to come due, one would reduce the total to a much less intimidating—indeed, a *manageable*—level.

This is not to say that there is not a built-in shortfall. There is. (See Part VI.) *It is to say, rather, that the "amortized" annual amount of the projected shortfall may be on the order of one-half to one percent of GNP—assuming the problem is managed on an orderly basis.*

Over the long term, there are five ways this shortfall could be handled:

- by reducing the growth of future obligations—through "mandatory" program reforms, credit reforms, and insurance reforms (these are discussed in Parts V, VI-A, and VI-B below);
- by reducing spending on other Federal programs where returns on investment are judged to be of lower relative value (these are discussed in Part VII-B-1 below);
- by increasing the government's managerial integrity and efficiency (this is discussed in Part VII below);
- by pursuing growth-oriented economic and budgetary policies—investing in the future—so that future economic productivity and Federal receipts are higher than otherwise projected (this is the principal area of emphasis in Section One, the Overview, and is discussed especially in Part III below); or
- by increasing the relative burden of debt and/or new taxes (these latter approaches are not a part of the President's program).

INVESTING IN THE FUTURE

As noted, "Investing in the Future" is a theme given special emphasis in the Budget Overview. It was first introduced to the presentation of the budget by the President, last year, in *Building a Better America.*

The emphasis is consistent with three fundamental points: First, a budget must be viewed as more than a static snapshot; it necessarily influences the future, and the nature of that influence must be examined. Second, there is a generally accepted moral obligation to try to leave future generations in a better position than their predecessors. Third, the obligations for future expenditures and debt service are more manageable insofar as current expenditures and tax policy contribute to increased growth. Together, these three points argue compellingly for attention to the extent to which a budget (and its associated economic policy) encourage *investment*—investment in the future.

The President's budget encourages investment in a host of ways that are discussed in greater detail in the Overview. These are outlined here—with references to appropriate Parts of the Overview noted parenthetically:

- ***Deficit reduction***—By reducing the deficit, meeting the G-R-H targets, and then buying down debt, the President's budget policy would improve the U.S. savings rate and reduce the cost of capital. (This is discussed further in Part III-A below.)
- ***Incentives for Private Savings and Long-term Investment***—The President's program would improve the incentives for saving and investment through *Individual Retirement Accounts* (IRAs); create a new all-purpose savings incentive through *Family Savings Accounts*; and encourage growth-oriented, job-creating investment through a new long-term *capital gains incentive.* (These are discussed further in Part III-A below.)

- ***Research and Development***—The President's budget funds initiatives to expand human frontiers in space—NASA would grow 24 percent over 1990 to a record $15.2 billion—and in biotechnology; to advance the development of the superconductive supercollider and to increase investment across the full range of basic research ($12.3 billion—up almost $1 billion); to advance applied research in areas as diverse as defense and health, agriculture and high speed rail transportation, semiconductor development and materials processing. The President also proposes to enact and extend major tax incentives to encourage greater investment in R&D by the private sector. Total proposed governmental expenditures for R&D would exceed $70 billion. (These are discussed in Parts III-B and III-C below.) In the design and implementation of Government programs, the President's budget also recognizes and encourages the innovative role of "States as Laboratories" (discussed in Part IV below).
- ***Investment in Human Capital***—Although Federal money is not the key to solving the nation's serious education problems, the President does propose to increase the discretionary budget authority of the Department of Education by $1.2 billion—bringing the Departmental total to a record $24.6 billion. Program increases are principally in areas of investment that are consistent with the Federal Government's role and responsibilities—reflecting the basic understanding that true solutions must depend heavily on states, localities, parents, and a system that promotes greater innovation, flexibility, and accountability. The budget re-proposes the President's child care initiative—on which the Congress failed to act last year. And the President proposes not only to reauthorize Head Start, but to increase it by half a billion dollars in a single year—bringing Head Start to an unprecedented $1.9 billion. (These and other investments in human capital are discussed in Part III-D below.)
- ***Drug Control Strategy***—Clearly, it makes little sense to invest in human capital only to have drug abuse undermine that investment and, indeed, destroy the very social fabric that makes human growth and investment worthwhile. Drug abuse negates investment. It is fundamentally destructive. It must be stopped. Like education, drug abuse is a problem that cannot be solved by Federal funds alone—or by funds alone whatever their source. Nonetheless, the 1991 budget proposes $10.6 billion in budget authority and $9.7 billion in outlays to combat drug abuse. These levels represent increases of 12 percent in budget authority and $2.8 billion (41 percent) in outlays relative to 1990. They are necessary to advance the next stage of the comprehensive National Drug Control Strategy (and are discussed further in the Strategy, which is published separately, and in Part III-E below).
- ***HOPE and Enterprise Zones***—The problems of economically distressed areas will be alleviated some by the job-creating effects of continued economic growth. The problems will be mitigated also by the President's anti-drug abuse strategy. But more needs to be done to bring hope and opportunity to severely distressed areas. Thus, the President is re-proposing his initiative to stimulate growth through the creation of special incentives for investment and job creation in *Enterprise Zones*—a proposal on which the Congress has failed to act. And he is introducing legislation to advance project HOPE—Homeownership and Opportunity for People Everywhere. (These proposals are discussed further in Part III-H below.)
- ***Transportation Infrastructure***—Improving the U.S. transportation system is essential to economic efficiency and growth. It is a shared responsibility involving the private sector, Federal, state, and local government. The Federal contribution is substantial. For example, the President proposes a record $8.6 billion for aviation in 1991 to help keep the U.S. commercial aviation system the best in the world. Of this, $2.5 billion—an increase of 45 percent—is proposed to modernize the FAA's air traffic control system. (These and related transportation issues are discussed in Part III-G below.)

- ***Environmental Protection***—The emphasis on the importance of economic growth must, of course, be accompanied by a responsible concern for the protection and preservation of the environment. The President proposes over $2 billion in new spending to fund: "America the Beautiful," a new program to improve the stewardship of public lands and natural resources, and to promote reforestation; a major increase in the U.S. Global Change Research Program; an acceleration of hazardous waste clean-up; and a 12 percent increase in the EPA operating budget. (These are discussed in Part III-F below.)
- ***The American Heritage***—To the extent that investment tends to emphasize rapid technological advance, there is need for a complementary emphasis on aesthetic values, history, and the traditional cultural values that have made America uniquely strong. Although the Federal role in this area must be limited—for important reasons of pluralistic philosophy—it must not be overlooked. America's progress in the future will be the greater for building on its diverse cultural strengths. Thus programs to foster and preserve the American Heritage are treated as themselves an issue of investment. (These are discussed in Part III-J below.)
- ***National Security***—None of the foregoing would be worth very much if the budget failed to provide for the protection of U.S. national security. Though responsible analysts may differ about the best means of protecting it, national security holds a fundamental claim on governmental investment. Without adequate investment in national security, ultimately, all that America holds dear could be lost. There is, further, an obligation that America has long championed: the advancement of pluralistic, market-oriented democracy throughout the world. These fundamental interests and obligations are dependent upon U.S. economic growth. But they are also, in some respects, preconditional to it. (They are discussed in Part III-I below.)
- ***Management Oversight***—Federal investments in the future will only achieve their objectives if they are effectively managed. Improved returns on investment require a better budget process and more effective management oversight. Americans are entitled to greater assurance that their tax dollars are being invested wisely and managed with efficiency and integrity. Proposals to manage America's government better are discussed in Part VII below.

WONDERLAND REVISITED—THE CURRENT CONGRESSIONAL PATH

In the presentation of the first Bush Administration budget, a critique of "Wonderland" budgeting was offered. It focused on the curious Washington habit (indeed, legal requirement) of "current services baseline" budgeting. Under this system, a "cut" may really be an increase; and a deficit said to be going "down" may really be going up. With "current services'" built-in bias toward increasing expenditures, it should be little wonder that the system has failed to bring the deficit under satisfactory control.

In the Mid-session Review of the Budget, OMB introduced a new budget projection: the "Current Congressional Path." This was done in order to underline what some might think an obvious point. That is, the deficit is not determined, in the end, by either "current services" projections or by mathematical extensions of a "President's Policy." Forecasts based on such projections are almost always bound to be wrong. Budgets are legislated. Congressional action (or inaction) is, therefore, a fundamental determinant of actual deficits. In trying to forecast realistically, it is important to have some sense of the "Current Congressional Path."

Unfortunately, however, the Current Congressional Path is not entirely clear. Indeed, Wonderland seems to be running wild with attractive fantasies, but without yet having established coherent direction. One might consider, for example, the two big games now in play—and a third that is soon to be:

- ***The Spend-the-Peace-Dividend-Game***—This is a new game, premised on the assumption of a substantial, near-term "peace dividend." It starts by over-estimating the dividend. Then each player plans to spend

the dividend in his or her preferred way. The sum of all such planned expenditures totals about ten times the over-estimated dividend, which is itself perhaps five times the actual dividend. Thus, Washington entertains the notion of spending fifty times a dividend that has not yet definitively materialized—a true Wonderland phenomenon.

In reality, the *near-term* peace dividend is likely to be smaller than is commonly assumed for three reasons: First, the true cost of the previously planned and Congressionally-approved defense program is substantially higher than the current DoD funding levels (and higher than "current services"). Much of the dividend will have to be used just to adjust the previous program downward toward current levels. Second, this adjustment—while politically popular in the abstract—will not be politically popular in all its particulars. Third, any tendency to cut further would likely focus on reducing U.S. troop strength abroad at a more rapid rate than proposed by the President—a more rapid rate than consistent with preserving a strong alliance and negotiating equitable and enforceable agreements with the Soviet Union. Presumably, these countervailing interests will be better appreciated as the debate about the "peace dividend" unfolds.

- ***The Cut-Social-Security Game***—This is ordinarily a very dangerous game politically. But in its most recent form, it has started with a superficially attractive proposal: to cut Social Security taxes. Clearly, that would be desirable if it could be done without significant cost to the people paying the taxes and to the economy as a whole. Unfortunately, the most recent proposal to attract significant attention fails that test.

  It is ironic in three respects. First, some of its advocates have argued, until recently, that the government was under-financed (and under-taxed) *not over*-financed. Yet few, in fact, can seriously argue that the government as a whole is over-financed. Second, the emerging conventional wisdom had been that one needed to do more to protect the capacity to pay future Social Security benefits, *not less*. Cutting Social Security taxes now would mean giving up on that objective—giving up on the bipartisan commitment to build up reserves for the future retirement needs of the baby boom generation. Third, and perhaps most telling: Cutting Social Security taxes now would likely hurt the very people it is ostensibly intended to benefit, today's workers. It would either force an increase in their non-Social Security taxes (to compensate for the enormous revenue loss—$55 billion in 1991 alone); or it would force a reduction in their future retirement benefits. (See Part VI-A.)

  The President's proposal to establish a "Social Security Integrity and Debt Reduction Fund" is a responsible way to protect the future interests of today's workers. But Social Security is a notoriously volatile subject when it enters the political domain; and whether rationality will prevail remains to be determined.

- ***The Beat-the-Budget Game***—This is the game that begins with the reaction to the President's budget. It has become an annual ritual. At the start, it is predictably partisan. Priorities are judged to be incorrect. Economic assumptions are ridiculed (but later adopted). Gimmicks are scorned (but later outdone). The failure of the budget process is lamented (but ideas for evasion proliferate). The refusal to raise "new taxes" is condemned (as proposals to cut taxes are advanced). Incentives for savings and investment are criticized for their alleged adverse effects on the deficit (as alternative proposals to increase the deficit are advocated). Stalemates are followed by "heroic compromises" that earn the parties self-congratulation, but somehow manage to leave much of the serious job to the future. And the public, understandably, grows more skeptical.

It may be apt to view all this metaphorically as a set of children's games: the Budget as Cookie Monster; its future threatened by hidden PACMEN; its path a journey through Wonderland. But at some point, it is appropriate to put games aside—at least for a while. *At some point, there is an obligation to be serious.* At some point, partisan posturing must yield to the responsibility to govern.

Sooner or later, the American political system will rise to the responsibility to be serious: to complete the job of fiscal policy correction. It may do this in small steps or large. It cannot do it with side-steps.

This year's budget meets the responsibility to be serious. It is seriously presented—giving a more complete and balanced perspective on both the present and the future than has previously been characteristic. Its emphasis on investment and growth-oriented policies and its realistic attention to long-term liabilities should be welcome. Its economic assumptions are not outside the credible range. It meets the Gramm-Rudman-Hollings deficit targets with specific and defensible deficit-reduction measures—and without gimmicks. It seeks to preserve a meaningful consolidated budget, while tightening the budget process. If implemented, it would reach balance in 1993 (as required by law), and would thereafter begin the process of reducing Federal debt.

This, of course, is not to assert that the budget will be treated seriously in the very next round of the Beat-the-Budget game. It is simply to suggest that it should be.

Richard G. Darman
Director,
Office of Management and Budget

Note: This budget is presented in a new, comprehensive, single-volume form. There is no formal record of the number of individuals who may have read, cover-to-cover, the previous seven-volume editions of the budget. (Nor are there epidemiological studies of their fate.) This new single-volume form is provided with the hope that it may be more convenient for the reader; and with the belief that it may actually provide more, not less, useful information. If any reader finds important information to have been dropped, OMB will try to remedy that unintended effect.

III. INVESTING IN THE FUTURE

III.A. INCREASING SAVING, INVESTMENT AND PRODUCTIVITY

The United States faces major challenges and opportunities in the coming decades. To take advantage of these opportunities and to meet the challenges, a step-up in the rate of economic growth is essential. Higher economic growth is needed to increase living standards, sharpen international competitiveness, and lessen the burden of the surge in retirement expected in the next century.

This Part analyzes saving, investment, and productivity growth: their historical record, the factors that influence them, and how they can be increased in coming years. The key to faster productivity growth is an increase in investment, where investment is broadly understood to include not only additions to physical capital, but also additions to knowledge in the form of research and development (R&D) and improvements in human capital resulting from education and training.

SOURCES OF ECONOMIC GROWTH

The rate of economic growth can be thought of as the sum of the growth in employed labor plus the rate of increase in labor's productivity. Economic output can expand either because more people are working or because those who are working are able to produce more.

Productivity Growth and Living Standards

In the long run, the standard of living depends essentially on productivity. While it is also essential for employment to rise when the number of willing workers is growing, simply having more people at work does not necessarily mean higher wages per worker. Higher earnings and a better standard of living require that increased productivity accompany increases in the number of jobs.

The chart below shows the relationship between productivity advance (measured by output per hour in the nonfarm business sector) and growth in average living standards, (measured by real per capita disposable income). Productivity and living standards both rose at a relatively high rate of about 2½ percent a year from 1948 to 1973. However, growth in both measures declined sharply after 1973, especially the rate of productivity advance.

Factors other than labor productivity affect growth of income per capita, particularly labor force participation rates. Women (who previously had been excluded to some degree) have been joining the labor force in increasing numbers since 1973, adding to measured output and causing per capita income to rise faster than productivity.

Demographic developments suggest, however, that this source of growth will not be as strong in the coming decades as it has been during most of the postwar years. A slower rise in female participation rates is expected. More importantly, the United States population is getting older, and its rate of increase is much smaller. Between now and the turn of the century, the labor force is projected to increase at an average annual rate of only 1.2 percent—below the 1.6 percent rate of advance since 1980 or the 1.8 percent average since 1950. After the year 2000, current projections show labor force growth slowing almost to nothing for the next several decades. The population slowdown has the potential to raise significantly the proportion of retirees to workers. For this reason, the prospects for achieving higher real living standards will depend even more on strengthened growth of labor productivity.

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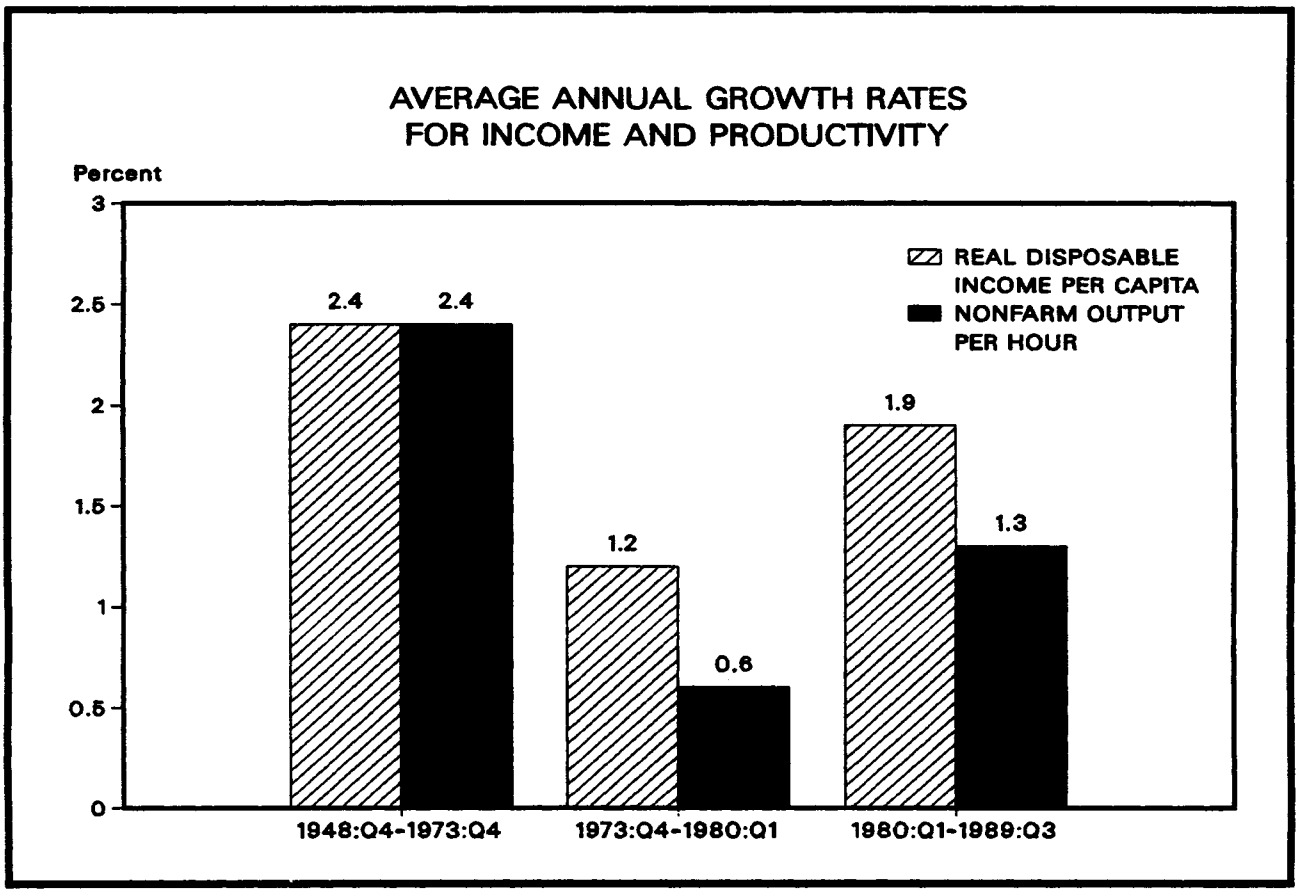


SOURCES OF LABOR PRODUCTIVITY GROWTH IN THE NONFARM BUSINESS SECTOR

(Average annual percent change)

	1948–73	1973–79	1979–87
Output per hour	2.5	0.6	1.2
Contribution from:			
Capital/labor growth	0.8	0.6	0.8
Labor quality	0.2	—	0.3
Business R&D, direct impact	0.2	0.1	0.2
Other factors	1.3	−0.1	—

Factors Behind Productivity Growth

Among the factors that explain trends in productivity, the most important that have been identified are R&D, investment in human capital, and the capital/labor ratio. Based on the latest work of the Bureau of Labor Statistics (BLS), these three factors accounted for all of the 1.2 percent average annual rate of growth in output per hour during the 1979–87 period. These variables can be positively affected by public policy.

PRIVATE AND PUBLIC INVESTMENT

This section analyzes four major categories of investment with significant productivity effects: R&D, human capital, business capital, and Federal physical capital.

RESEARCH AND DEVELOPMENT

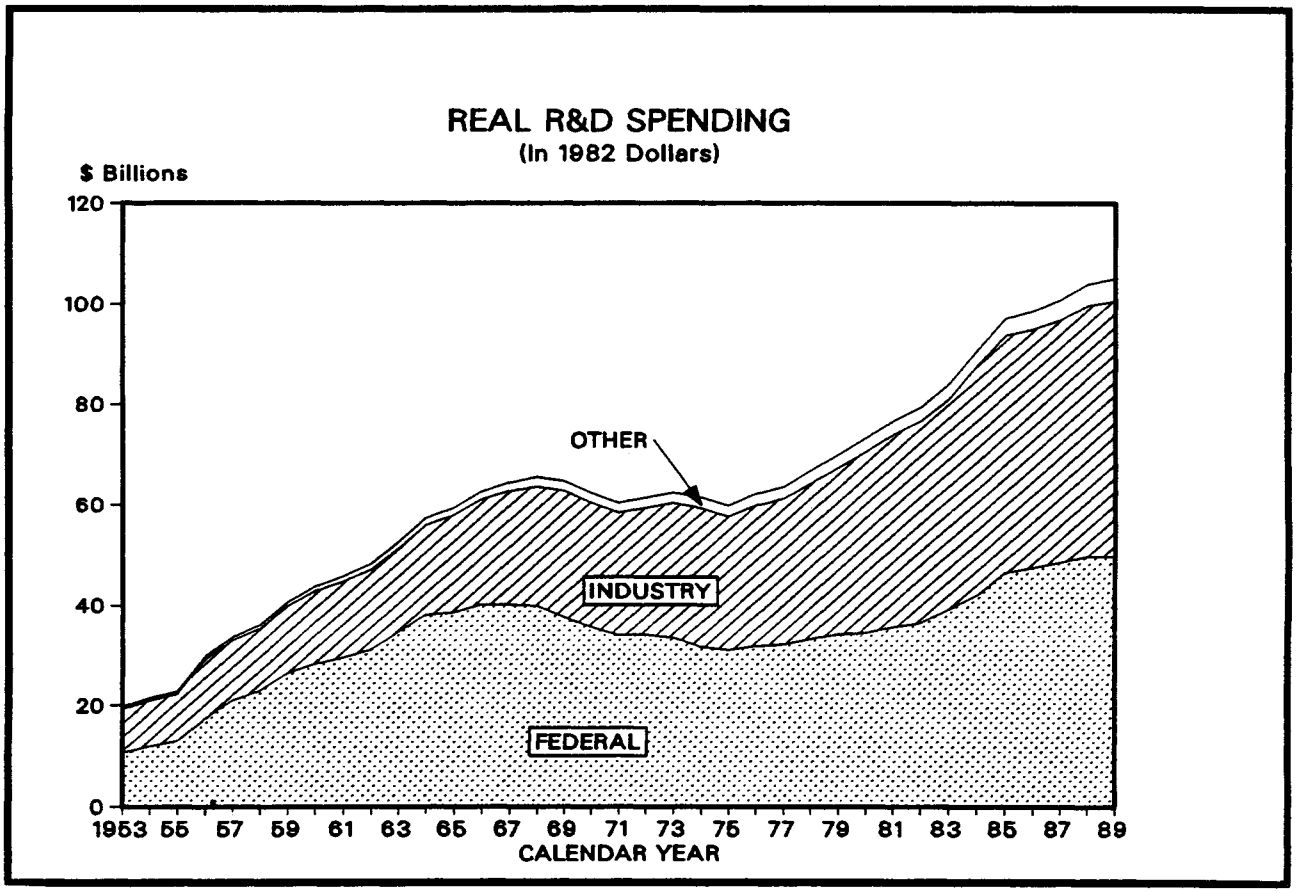
R&D has long been identified as a major source of economic growth. It results in new processes that produce more output with less input, it creates innovative products to perform old tasks more effectively, and it opens up previously unimagined markets.

In today's international marketplace, the United States can remain competitive only if it stays at the forefront of technological innovation. In calendar year 1988, the United States spent $132 billion on R&D, more than the combined R&D spending of France, West Germany, the United Kingdom and Japan. In relation to the size of their overall economies, however, the United States and each of these other nations spent about the same—roughly, 2½ percent of GNP.

Industry R&D

Industry accounted for about half of the Nation's R&D spending in the 1980s, up from 35 percent in the 1960s. This investment has both a direct and indirect effect on productivity growth. The direct effect stems from the higher returns earned by the firm making the investment and by the other firms in the same industry that also benefit from the innovation. The direct rate of return for R&D is high: a mid-range estimate is in the neighborhood of 30 percent—about three times higher than for physical capital. Combining the high rate of return with industry outlays on R&D, the direct contribution of industry-financed R&D to productivity growth is estimated by BLS to be about 0.15 percentage point per year in each of the last 35 years.

Industry-financed R&D also has an indirect effect on industries that use the innovation or imitate the new process. This indirect contribution is probably as large or larger than the direct contribution. The successful development of new computers, for example, can offer a high rate of return to computer-makers, but it also can raise the net returns to industries purchasing this improved capital equipment. Such "importation" of R&D is substantial. Over 40 percent of the R&D used within a typical manufacturing industry was developed in another industry. In non-manufacturing, where little R&D is done, the proportion is much higher.



It is difficult to get a reliable estimate of these indirect benefits because the returns attributable to purchased R&D are often inseparable from the returns to the capital in which it is embodied. A mid-range estimate would put the indirect return at slightly larger than the direct return. This puts industry R&D's total contribution to long-term productivity growth in the range of 0.3 to 0.4 percentage point per year on average over the postwar period, compared with 0.15 percentage point estimated for its direct contribution.

Although 0.3 or 0.4 percentage point per year may appear small at first glance, it represents nearly 20 percent of the productivity rise during the postwar period. More importantly, from a long-term perspective, even small changes, compounded over many years, can have a big impact on living standards. Starting at current levels of GNP, a yearly contribution of this magnitude would mean $350 billion of additional GNP over 20 years, or over $1,200 per capita.

Government R&D

Government R&D outlays totaled $61 billion in calendar year 1988, slightly less than half of all R&D spending, down from two-thirds 25 years ago. The budget proposes outlays of $65 billion for the conduct of R&D and another $3 billion for investment in R&D facilities in 1991; these proposals are discussed in Part III–C, "Enhancing Research and Development." Like industry R&D, the Federal Government's R&D dollars contribute to higher measured output as well as other kinds of well-being. It is, however, much more difficult to measure the benefit of the Government's R&D for the economy.

In part the problem is that much of Government R&D improves the delivery or enhances the performance of public goods whose values are not easily measured in economic terms. In the 1980s, 65 percent of all Federal R&D spending went to defense, 11 percent to health, and 6 percent to space. In an ultimate sense, a secure and healthy nation is a prerequisite for

continued economic growth—but the dollar value of health and security is unknowable. Environmental research is another example of a public good that improves the quality of life but does not directly raise GNP as currently measured.

One area where Federal R&D has focused directly on improving private sector productivity is agriculture. Because there is a market valuation for farm products, the returns from improved yields can be measured more reliably than in most other areas. Here, the returns to Government outlays are very high, often estimated in the neighborhood of 50 percent.

While R&D spending for defense and space are primarily directed toward achieving payoffs in these fields, the experience of the past 45 years shows that they have spillovers into commercial applications. Significant advances in civil aviation have their origins in defense-sponsored R&D, as do civilian uses of lasers, integrated circuits, and weather satellites. In the field of medical technology, defense R&D has contributed to acute trauma care, laser surgery, magnetic resonance machines, and the lithium batteries used in pacemakers.

The need for public support for basic research has long been recognized, and substantial funding has been supplied in this area. Basic research accounted for 16 percent of Federal R&D spending in the 1980s, up from about 12 percent in the prior two decades. Commercial payoffs from basic research, funded in part by the National Science Foundation, include genetic engineering, solar collectors and testing for carcinogens, to mention only a few.

Conclusion

R&D contributes substantially to economic well-being both in terms of measurable additions to private output and in unmeasurable improvements in welfare. Moreover, because the benefits to society from R&D are often much higher than those accruing to the individual innovator, not enough resources from the point of view of society would be devoted to R&D. These externalities are the principal justification for the Government's role in boosting the Nation's R&D effort.

HUMAN CAPITAL

During the past 30 years, there has been a growing recognition that the quality of the Nation's workers is an important factor determining trends in productivity. Education and training at home, at school, and on the job affect the skills, ingenuity, and adaptability of the work force. The better educated and trained the work force is, the higher will be its productivity.

The decision to undertake education and training is similar to the decision to acquire physical capital, which is why education and training are often referred to as investment in "human capital." Such investment involves costs in terms of actual outlays and forgone earnings, and it leads to benefits, both monetary and nonmonetary, accruing over many years. The similarity between the two kinds of investment decision has enabled the extensive research on physical capital to be applied fruitfully to human capital. The result has been estimates of how much is invested in human capital annually, the existing stock of human capital, the quality of the labor force, and the rate of return to investment in education and training.

There is reason to be both encouraged and concerned about what the recent trends in human capital formation imply for productivity growth. On the plus side, the aging of the baby-boom generation will make the work force of the 1990s more experienced; the average worker will have had more on-the-job training. In addition, as described in Part III-D, "Investing in Human Capital," the Administration is committed to improving the quality of American education and job training.

On the other hand, the average level of educational achievement remains disappointing, far below that of students abroad. Furthermore, an increasing share of future school children and new workers will come from minority groups that our educational system has been least successful in reaching.

Investing in People

Because of its substantial returns, governments, individuals and businesses invest heavily in education and training. In calendar year

1988, $330 billion—nearly seven percent of GNP—was spent on private and public school education. Roughly 60 percent of this amount went to elementary and secondary schools; the remainder, to colleges and universities. The Federal Government spent about $20 billion, directly and indirectly, through grants to State and local governments. That sum does not include funds for Head Start and worker training, which are also investments in human capital. In addition, businesses spend about $30 billion annually for direct training of their workers. All of these outlays together were two-thirds as large as the total physical investment of business in new plant and equipment in 1988, and they do not even include the forgone earnings and out-of-pocket expenses of students and trainees, which often exceed the direct expenses.

Looking at it another way, the stock of human capital can be thought of as the discounted value of the future stream of income provided by that capital. A more educated and better trained population produces a larger stream of income. A recent estimate of the value of human capital using this method reveals, indeed, that our Nation's wealth resides in its people, rather than its material possessions: the stock of human capital based on discounted future life-time earnings is estimated to be three and a half times larger than the stock of private nonhuman wealth.

Contribution to Productivity Growth

The "quality" of the labor force is an ambiguous term, but work experience, years of schooling, and the quality of our educational system are all elements of it. Studies of the first two factors, conducted at BLS, suggest that there was a favorable shift in the quality of the labor force during the 1980s. By contrast, during 1973–79, the influx of baby boomers into the labor market reduced the average work experience of both men and women, partially offsetting the contribution to labor quality from an increase in years of schooling. In the 1980s, both work experience and years of schooling were on the rise.

These improvements had important consequences for the growth of productivity, raising it by 0.3 percentage point per year in 1979–87, compared with no positive impact during 1973–79. Although a contribution of 0.3 percentage point per year might appear small, it accounts for 25 percent of the overall rise in productivity of 1.2 percent per year during the 1980s. In dollar terms, the upward shift from the flat trend of the 1970s boosted real GNP in 1987 by about $80 billion.

Both work experience and years of schooling could provide a still larger contribution to productivity growth through the year 2000. By then, the average age of the labor force will be just over 39 years, up 3½ years from the late 1980s. (During the 1980s, it rose about a year and a half.) Because length of work experience is related to the age of the labor force, there should be a similar or even larger gain in this component of labor quality. Years of schooling should also be on the rise.

The challenge will be to make the quality of those years of education better than it has been in the past. How well or how poorly students learn the essential skills of reading, listening, writing, analyzing, and thinking has serious consequences for productivity growth. Between 1967 and 1980, the average scores obtained by students taking standardized general intellectual achievement tests fell by the equivalent of 1¼ grade levels. If, instead, scores had increased at the pace of the prior quarter century, the improvement in productivity growth observed in the 1980s, as these students matured and entered the labor force, would have been even stronger. By 1987, real GNP could have been two percent higher, a gain of over $85 billion above the actual level of output. The nonmonetary benefits to society from a better educated population would have made the total gain even larger.

Benefits to Investment in Human Capital

The more educated a person is, the greater is the likelihood of success in the labor market. Among persons aged 25–34, almost 90 percent of those graduating from college were in the labor force in 1988, compared with 82 percent for high school graduates and 69 percent for those without a high school degree. The average unemployment rate for these college graduates in 1988 was just 2.3 percent. The rate for those finishing high school was 6.9 percent; for those dropping out of high school but still in the labor force, 13.9 percent.

1988 EDUCATIONAL ATTAINMENT AND MEDIAN EARNINGS

(Dollars)

	Under 35 years			
	All workers		Year-round full-time workers	
	Male	Female	Male	Female
Less than 4 years of high school	4,720	2,160	14,790	10,500
1 to 3 years of college	15,540	9,510	20,620	15,220
4 years or more of college	26,310	18,850	30,440	23,260

The monetary returns to investment in education and training are substantial. For people under 35 years of age working full-time during all of 1988, the average earnings for college graduates were twice those of people without a high school degree. The relative effect of education is enormously magnified when the earnings-depressing effect of unemployment is considered as well. In 1988, the average earnings of all college-educated male workers under the age of 35 were about six times larger than that for men with less than 4 years of high school, many more of whom were not working; for women, the differential was 9 to 1.

In light of the close relationship between education and income, it is not surprising that the poverty rate is highest among families with the least education, and falls off sharply as educational attainment rises. In 1988, 21 percent of all families headed by someone without a high school degree were in poverty. The poverty rate for families headed by a high school graduate who had not gone on to college was only 8.9 percent; and for those with one or more years of college, the rate was just 3.5 percent.

Experience on the job has a measurable effect on human capital and on earnings. Holding education levels constant, an additional year of work experience in the mid-1980s is estimated to have boosted real earnings by about 2½ percent. For those recently entered into the work force with only 5 years of experience, the payoff from additional experience was a much larger 6.4 percent for men and 4.6 percent for women. These newer workers were on the steep part of the learning curve, where additional time on the job adds substantially to their skills.

The monetary returns to investment in human capital are just one of its benefits. Higher levels of educational attainment result in better health, better child rearing, reduced crime, and increased donations of time and money to charity. A better educated citizenry is able to make more intelligent choices. Such external effects provide the rationale for the public support of education.

PRIVATE PHYSICAL INVESTMENT

Business capital formation provides workers with the tools they need to work effectively. The increase in the ratio of business capital to labor has been the single largest source of productivity growth throughout the postwar period. It accounted for about two-thirds of the increase in productivity from 1979 to 1987.

This section discusses recent changes in the determinants of business investment, focusing particularly on changes in Government policies. It analyzes how investment has responded to these policies. And it concludes that additional investment, and therefore additional saving, will be needed to meet the challenges of the 1990s and beyond.

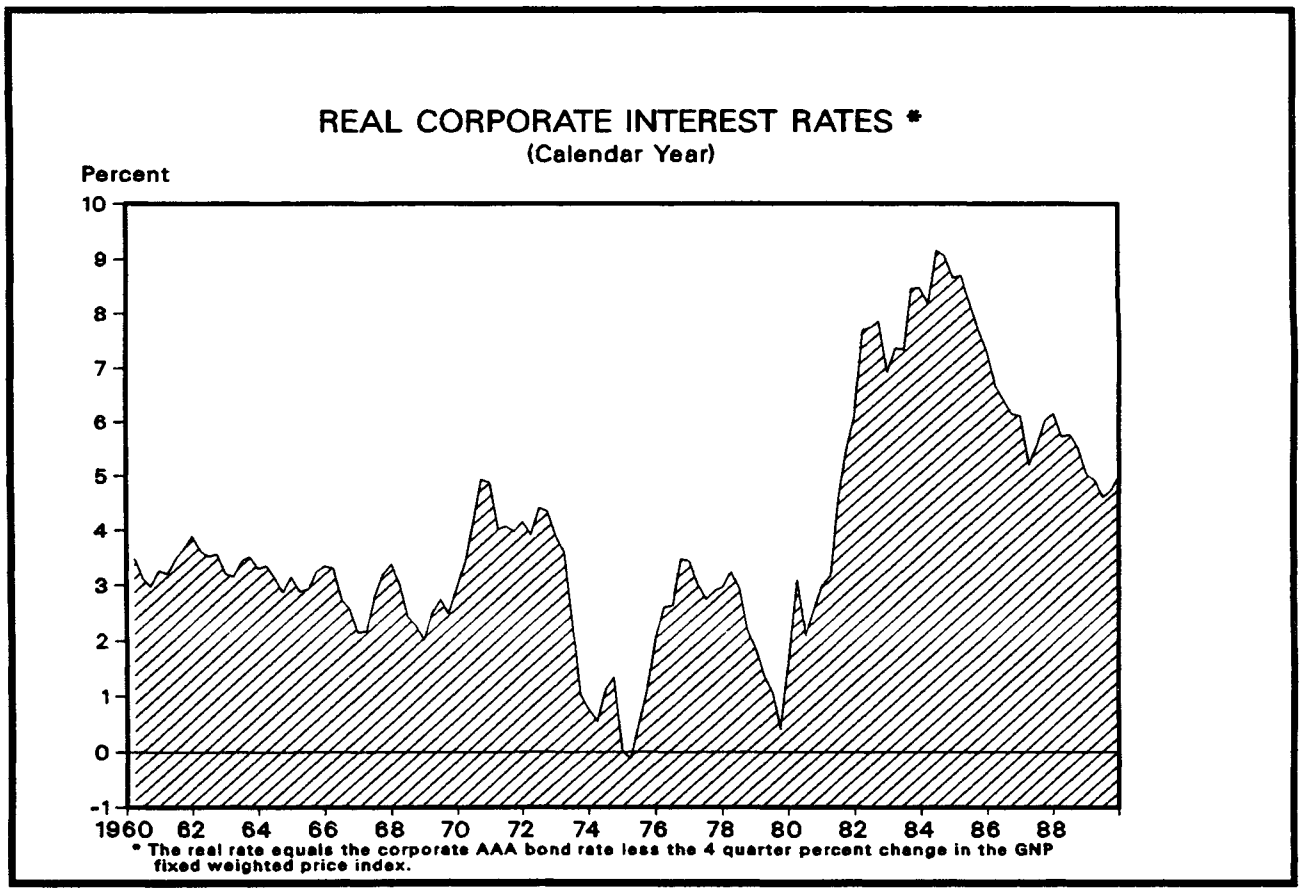
Determinants of Investment

Business fixed investment is determined by the change business desires in its stock of fixed capital. Decisions to spend on plant and equipment are made by comparing the benefits—the

net revenues to be earned from additional sales of output—and the costs. Therefore, expected sales have a dominant influence on the rate of investment by business. Although the 1980s began with a deep recession, it has been followed by 7 years of economic expansion. There were pauses and not all sectors or regions benefited equally or at the same time, but the overall strength of the economy in the 1980s was a plus for business investment.

The cost of capital also determines business investment. A lower cost of capital can induce additional investment even when sales are not expected to change. This is a complex calculation with several elements. First, it depends on the actual purchase price of capital. A lower price relative to other goods and services will encourage businesses to use more capital. Prices for business plant and equipment have been rising much more slowly than for output generally over the past two decades. Indeed, the effective price for computers has plummeted, which has greatly increased their share of investment dollars. The cost of capital also reflects the expenses of maintaining capital as it ages. If these costs are not covered, the investing firm will not preserve the capital value of its assets.

The cost of capital also depends on interest rates. When interest rates rise, the carrying cost of capital increases. This is obviously so when capital is financed by borrowing, but it is also the case when equity investment is the source of the funds, because interest income is forgone when investing in equities. Real interest rates reached record highs in the first half of the 1980s. Rates came down somewhat in recent years in response to lower budget deficits and reduced inflation expectations but, even so, the dearth of saving helped to keep rates high. For the decade as a whole, real interest rates on corporate borrowing averaged about 6 percent, compared with under 3 percent in the prior two decades.



It is the after-tax return on capital that really matters to investors, so taxes also affect the cost of capital. High tax rates can raise the cost of capital sufficiently to discourage investors from undertaking otherwise profitable investments. The impact of tax changes on capital costs in this decade has been mixed. The 1981 Economic Recovery Tax Act reduced the cost of capital by accelerating depreciation schedules, increasing the investment tax credit for some types of equipment, and lowering the maximum marginal tax rate on capital gains to 20 percent. The 1986 Tax Reform Act had mixed effects. It raised the cost of capital by repealing the investment tax credit, lengthening depreciation guidelines for structures, and eliminating the preferential tax treatment of capital gains. But the Act also lowered the top corporate tax rate from 46 to 34 percent. Overall, the changes in the 1986 Act diminished the distortion between one kind of investment and another that was inherent in such special provisions as the investment tax credit. Therefore, tax reform promises to have long-term positive effects on investment and the economy by increasing economic efficiency.

Finally, the general investment climate shapes business expectations and thus helps to determine the level of investment. In a climate of rapidly rising and widely fluctuating prices such as prevailed in the 1970s, price signals are distorted. Uncertainty about the future is increased, inducing private decision makers to emphasize the short run. High real interest rates can have a similar effect on business incentives, favoring quick payoff investments over those requiring longer commitments.

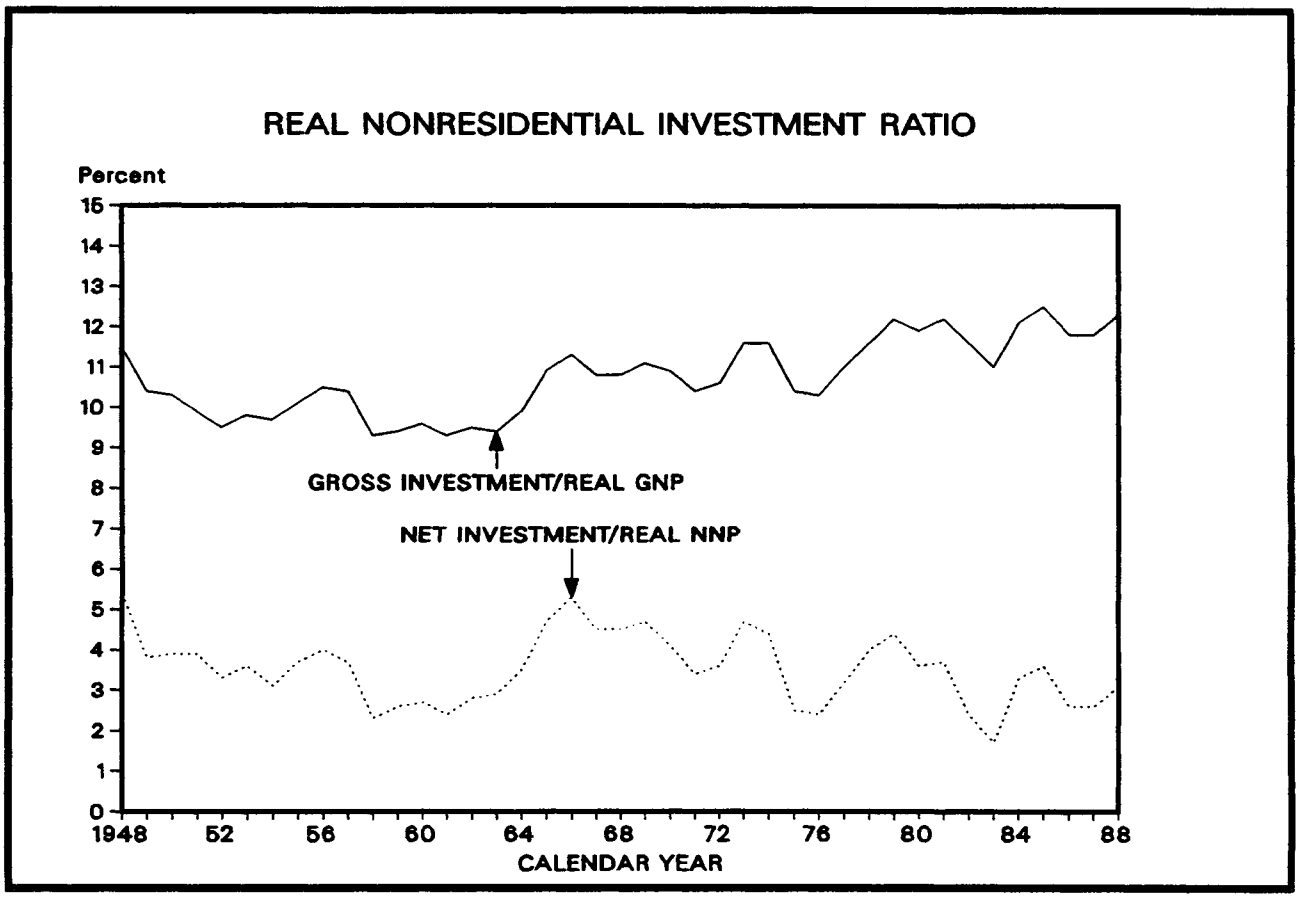
The Effect on Investment

As a result of the relatively favorable cast of some determinants of investment—economic growth, the tax and regulatory environment, and capital goods prices—the share of real gross business fixed investment in real GNP reached its highest postwar levels in the investment boom of the mid-1980s. As the chart shows, it remained near those levels in late 1989. By contrast, real net business fixed investment measured as a share of Net National Product has been on a declining trend for almost a quarter of a century, reaching a postwar low during the 1981-1982 recession but hardly recovering thereafter.

It is important to understand why the two differ. There has been a major shift in the composition of investment over the last 25 years away from structures and towards equipment. This shift was accentuated in the 1980s when investment was concentrated on computers, which have a very short service life. Because the average service life of capital goods is shorter, depreciation now equals a larger share of total investment. Thus, trends in gross and net investment diverge.

These considerations argue for taking the actual level of capital services into account when estimating productivity, rather than any single measure of gross or net investment. That is how the contributions of capital to productivity, shown in the table on sources of labor productivity growth, were estimated. When that is done, the contribution of business fixed investment, as reflected in the rate of change in the capital/labor ratio, turns out to be about the same in the 1980s as it was in the 1970s and earlier decades. There was no decline in the past decade, but there was not a major improvement either.

To increase the supply of capital services used by business—which is what counts for accelerating productivity growth in the long-run—will require more investment, and therefore more saving, than the Nation has achieved in recent decades.



FEDERAL INVESTMENT IN PHYSICAL CAPITAL

In addition to its support for R&D and human capital, the Federal Government invests in tangible capital, some of which contributes to economic growth and the rest of which contributes to national security or serves other public purposes. Federal outlays for physical investment are estimated to be $131.6 billion in 1991, up 54.6 percent in real terms from 1980. They will amount to 10.7 percent of Federal outlays. This section analyzes the composition and effects of such investment; more detailed data are provided in Section Two, Part IV-F.

Direct Federal Investment

National defense accounts for $87.9 billion, or two-thirds of the total Federal physical investment proposed for 1991. Defense is very investment-intensive; 29.0 percent of the defense budget currently goes for investment, compared with 4.7 percent of the outlays for nondefense programs. Most defense investment is for weapons and other equipment (e.g., ships, planes, and computers); one-tenth is for construction.

Defense has accounted for most of the growth in real Federal physical investment since 1980. In this budget, the President proposes to reduce real defense investment, accelerating a change in direction that began in 1988. Details concerning the defense investment proposed for 1991, and the changes in international conditions and strategies on which the proposals are based, are discussed in Part III-I, "Preserving National Security and Advancing America's Interest Abroad."

Direct Federal Nondefense Investment

The Federal Government also invests directly in nondefense physical capital. This budget proposes $18.2 billion for such projects, including the space investment described in Part III-B, "Expanding the Human Frontier;" major improvements in the air traffic control

system described in Part III-G, "Improving the Transportation Infrastructure;" and computer purchases to improve Federal management. This category also includes investments made by the Army Corps of Engineers, the Tennessee Valley Authority, and the VA health care system. Proposed outlays for such projects are $5.0 billion in 1991, up 12.2 percent from 1990.

Direct Federal investment surged during the 1960s when the Apollo program geared up. Thereafter, it grew in real terms roughly in line with the growth of total real Federal outlays. Including R&D, this budget proposes an increase of 20.8 percent in total outlays for space investment from 1990 to 1991.

Capital Grants to State and Local Government

Of the $43.7 billion proposed to be spent on nondefense physical capital in 1991, 58.5 percent is in the form of grants to State and local governments, which make the actual investments. This has been the principal form of Federal nondefense investment since the late 1950s. More than half of these grants are spent for highways; the rest for community and regional development, mass transit, pollution control facilities, and airports. For these types of projects, Federal grants finance a large share of State and local investment; for other types, such as schools and prisons, Federal grants finance little or nothing.

Capital grants to State and local governments grew rapidly in the 1950s and remained high during the 1960s and 1970s. The initial increase was largely for the interstate highway system. Subsequently, grants for mass transit, community and regional development and pollution control expanded. Since 1980, grants have declined in real terms, with the largest declines coming in the areas of community and regional development and pollution control. Grants for highways and other forms of transportation are now higher in real terms than in 1980. The budget would maintain current spending levels for highways and provide increases in mass transportation and airport grants.

FEDERAL INVESTMENT IN PHYSICAL CAPITAL

(Dollar amounts in billions)

	1960	1970	1980	1985	1989	1990 est.	1991 est.
Current dollars:							
Direct investment in physical capital:							
National defense	17.2	23.6	32.5	78.0	90.5	90.4	87.9
Nondefense	1.9	2.5	8.1	11.7	13.9	15.5	18.2
Subtotal, direct	19.1	26.1	40.5	89.7	104.4	105.9	106.1
Grants to State and local governments	3.3	7.1	22.5	24.9	24.5	25.3	25.6
Total	22.4	33.2	63.0	114.6	128.9	131.2	131.6
Constant 1982 dollars:							
Direct investment in physical capital:							
National defense	51.7	55.8	39.6	72.3	87.4	84.0	78.4
Nondefense	5.9	6.1	9.1	11.4	13.2	14.1	15.9
Subtotal, direct	57.6	61.9	48.7	83.7	100.6	98.1	94.2
Grants to State and local governments	12.2	19.4	24.6	22.9	20.3	19.9	19.1
Total	69.8	81.3	73.3	106.6	120.9	118.0	113.3
Percentage of total Federal outlays in current dollars:							
Direct investment in physical capital:							
National defense	18.6	12.1	5.5	8.2	7.9	7.5	7.1
Nondefense	2.1	1.3	1.4	1.2	1.2	1.3	1.5
Subtotal, direct	20.7	13.4	6.9	9.5	9.1	8.8	8.6
Grants to State and local governments	3.6	3.6	3.8	2.6	2.1	2.1	2.1
Total	24.3	17.0	10.7	12.1	11.3	11.0	10.7

When the benefits of capital projects are limited to the locality where they are built, it is more efficient, as well as more equitable, for State and local governments to make the decisions and provide the funds. If outside funds are provided, it is more likely that the projects will fail to meet the test of balancing expected future benefits against the cost of investment. At the same time, there is no guarantee that Federal funding for capital projects will actually result in greater spending for such investments.

Contribution to Growth

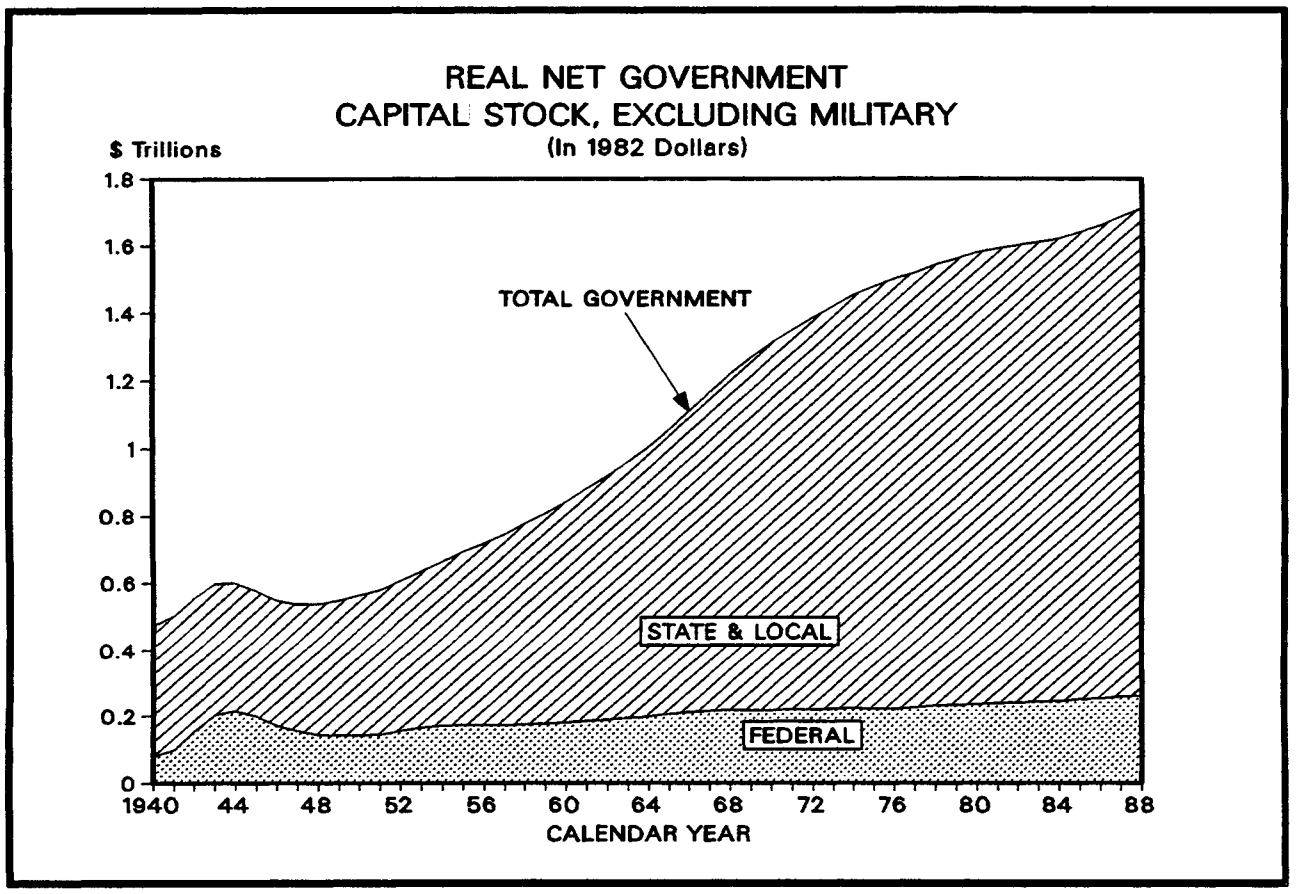
The Federal Government rarely invests to earn income, as businesses do. However, a small part of its investment is recovered, in whole or in part, by subsequent revenue that is paid by the buyers or other beneficiaries of the services that these investments help to provide. Examples include TVA plant and equipment and many Corps of Engineers projects.

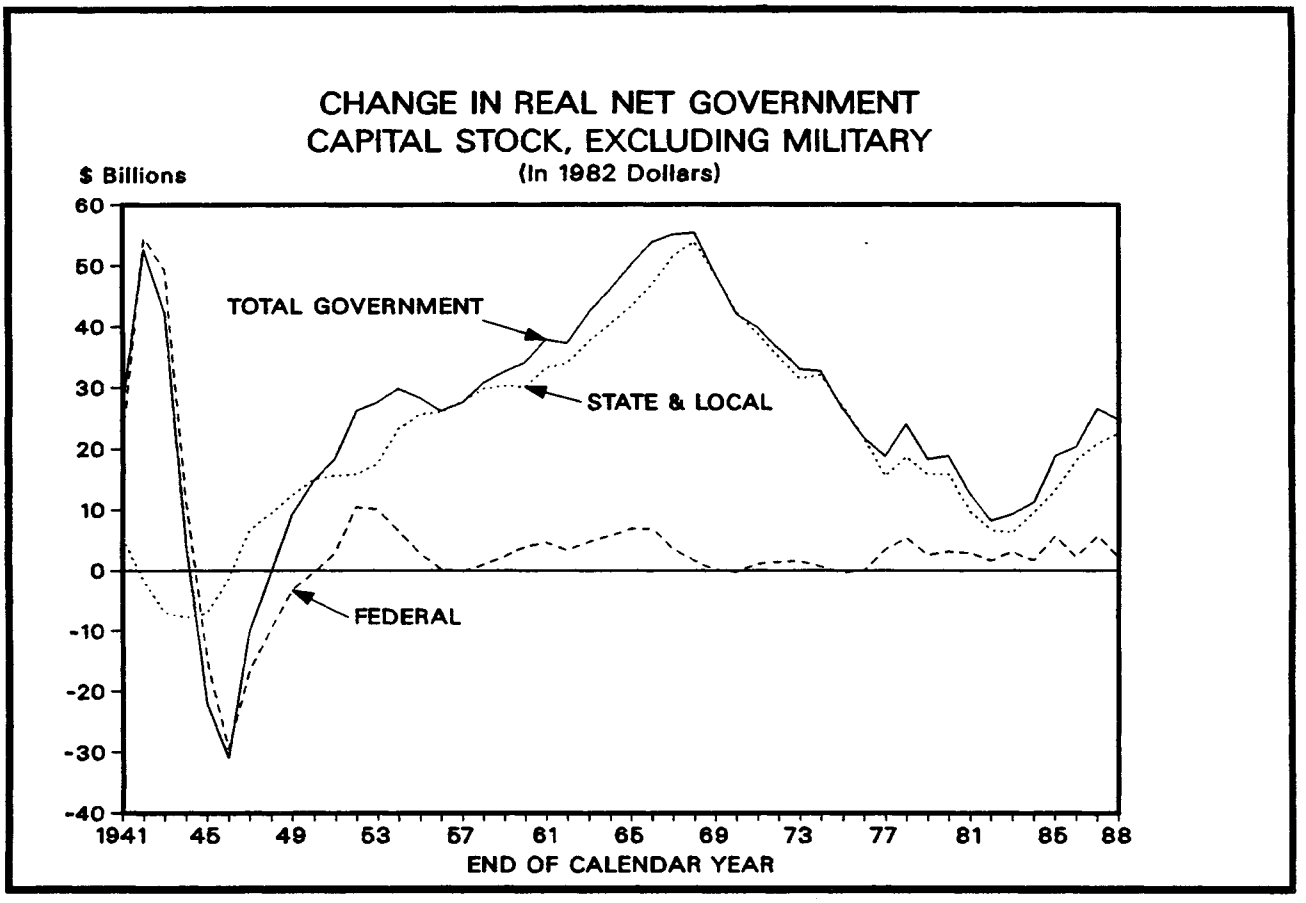
There are only a few studies that estimate the impact of government physical investment on productivity and economic growth. It is intuitively apparent that some public investments—particularly those on infrastructure such as streets, highways, airports, and water and sewer systems—provide direct productive services and are complementary with private capital. Comparisons over time and across countries indeed seem to indicate that some relationship may exist between additions to such capital and growth.

The Federal Government owns a small, but significant share of the Nation's nondefense, nonresidential capital stock; according to Department of Commerce estimates, it is about 5

percent. Unlike private businesses, the Federal Government also pays for capital owned by others. Its capital grants to State and local governments have contributed to their 26 percent share of the nondefense, nonresidential capital stock. The State and local share is so much larger not only because of Federal grants, but also because so many capital-intensive government activities—such as water and sewer systems—are State and local responsibilities.

The charts below show the real nondefense capital stock of the Federal and State and local governments, net of depreciation, as well as the net investment or the annual change in these stocks. The Federal nondefense capital stock has grown at a steady but slow pace. State and local capital increased rapidly in the 1950s and 1960s, with major investment in highways, other infrastructure, and schools in order to make up for low investment during the Depression and World War II and to accommodate the rapid growth and dispersion of the population during the postwar decades. The rate of growth in the State and local capital stock declined from the mid-1960s through the early 1980s. But from then to the present, it has once again accelerated.





REPRISE: TOTAL FEDERAL INVESTMENT

In total, Federal investment for R&D, for human capital, for physical capital, and for commodity inventories and other outlays classified as investment proposed in this budget for 1991 is $237 billion, up almost 13 percent from 1989 despite a leveling in defense investment. The table below summarizes these investment totals. Part VI-A of this Section, "Accounting for Debt and Unfunded Annuities," compares the increase in Federal investment with the increase in Federal debt.

SUMMARY OF FEDERAL INVESTMENT

	1960	1970	1980	1985	1989	1990	1991
In billions of dollars:							
Total Investment	31.4	56.5	119.4	184.8	210.4	231.8	237.0
R&D	7.3	15.2	30.2	47.2	60.8	62.2	65.0
Human Capital	1.7	8.2	26.2	23.0	28.2	28.9	31.4
Physical Capital	22.4	33.2	63.0	114.6	128.9	131.2	131.6
Other Investment	—	−0.1	—	—	−7.5	9.5	9.0
In billions of 1982 dollars:							
Total Investment (excluding Other Investment)[1]	110.4	148.0	140.9	169.0	190.0	185.9	182.1
R&D	33.2	44.4	36.5	42.4	47.8	47.1	47.2
Human Capital	7.4	22.4	31.1	20.0	21.3	20.9	21.6
Physical Capital	69.8	81.3	73.3	106.6	120.9	118.0	113.3
As percent of outlays:							
Total Investment	34.1	28.9	20.2	19.5	18.4	19.4	19.2
R&D	7.9	7.7	5.1	5.0	5.3	5.2	5.3
Human Capital	1.8	4.2	4.4	2.4	2.5	2.4	2.5
Physical Capital	24.3	17.0	10.7	12.1	11.3	11.0	10.7
Other Investment	—	—	—	—	−0.7	0.8	0.7

[1] Other investment includes financial assets and commodity stockpiles for which there are no appropriate deflators.

SAVING

Without saving, no resources would be available for investment. Someone must forego additional current consumption in order for investment plans to be realized. Ultimately, the rate of capital formation and the benefits that flow from more investment depend on the willingness to save. The cost of capital links saving and investment by serving as a rationing mechanism that limits total investment to the resources made available by saving.

In a closed economy, where investors are unable to borrow from abroad, a low saving rate is reflected in a high cost of capital because that is what it takes to restrict investment sufficiently to match the lack of saving. In an open economy, where domestic investors can borrow from foreign savers, domestic saving is no longer the sole constraint.

The global integration of financial markets has cushioned U.S. domestic investment partially from the effects of a sharp decline in the domestic saving rate in the 1980s. This openness to foreign capital inflows has helped to sustain our economic growth. However, this is a second-best solution in comparison with increasing domestic saving. When foreign savers provide capital, the future interest and dividend returns flow abroad rather than providing income for Americans.

This section reviews the sources of saving, including both domestic and foreign. The total amount of domestic saving equals the sum of all the saving done by households, businesses, and governments. The focus here is on the behavior of households and the Federal Government. These are the sectors mainly responsible for the recent decline in the national saving rate. The section ends with an international comparison of saving that emphasizes the effects of tax systems on overall saving.

Trends in Domestic Saving

The table below summarizes postwar saving trends. Gross domestic saving averaged 16.5 percent of GNP during the 1960s and 1970s, and then fell by more than 2 percentage points

to 14.1 percent in the 1980s. This decrease reflected both a widening of the Federal budget deficit and a marked decline in the measured personal saving rate. State and local governments ran surpluses, and thus helped to cushion the decline in the gross domestic saving rate; this, however, was largely due to their growing pension fund reserves associated with future pension liabilities. Gross business saving—the sum of undistributed corporate profits and business depreciation allowances—averaged 12.8 percent of GNP in the 1980s, slightly higher than in the prior two decades.

Net domestic saving, which deducts depreciation from gross saving, showed a proportionately greater decline, from an average of 8.2 percent of NNP (net national product) during the 1960s and 1970s to 3.4 percent in the 1980s. Two-thirds of this decline was due to the deepening Federal deficit. The remainder was equally divided between a decline in personal and in business saving. Gross business saving has been sustained by the substantial increase in depreciation allowances due to the shift to short-lived capital goods discussed in the previous section. Net business saving—retained earnings—has been on a downtrend.

GROSS DOMESTIC SAVING

(As percent of GNP)

	Gross domestic saving	=	Personal saving	+	Business saving	+	Federal saving	+	State and local saving
1960–69	16.3		4.6		11.9		−0.3		—
1970–79	16.7		5.6		12.0		−1.7		0.8
1980–89	14.1		3.8		12.8		−3.8		1.3
1980–85	14.9		4.4		13.1		−3.9		1.3
1986	12.4		3.0		12.9		−4.9		1.5
1987	12.2		2.2		12.4		−3.6		1.1
1988	13.2		3.0		12.2		−3.0		1.0
1989: Q1–Q3	13.5		3.9		11.5		−2.8		0.9

NET DOMESTIC SAVING

(As percent of NNP)

	Net domestic saving	=	Personal saving	+	Net business saving	+	Federal saving	+	State and local saving
1960–69	8.6		5.1		3.8		−0.3		—
1970–79	7.9		6.2		2.7		−1.9		0.9
1980–89	3.4		4.3		1.9		−4.3		1.4
1980–85	4.0		5.0		1.9		−4.4		1.5
1986	1.7		3.3		2.2		−5.5		1.7
1987	1.7		2.5		1.9		−4.0		1.3
1988	2.9		3.3		1.8		−3.3		1.1
1989: Q1–Q3	3.3		4.3		1.1		−3.1		1.0

PERSONAL SAVING

Individuals and households save for many purposes. For most people, the dominant motive seems to be saving for consumption during retirement, although some do not draw down their assets and even continue to save after retirement. Others save to buy homes, to invest in their children's education, or to cushion unpredictable events such as unemployment or prolonged illness.

Over the years, many Federal programs have been created that help people to meet these needs, including programs that foster private pensions, medicare, medicaid, unemployment insurance, mortgage guarantees, and student loan guarantees. But the largest and most significant program is social security, which not only provides income during retirement, but protects against both inflation and the "risk" of very long life.

Both the retirement income and the reduction in uncertainty provided by social security diminish the need for personal saving. On the other hand, to the extent that the program encourages people to plan an earlier retirement, it increases the incentive for personal saving. On balance, social security has probably reduced personal saving. Since there has been no corresponding increase in saving by the Federal Government, total domestic saving has probably been lower over the years, although the statistical evidence is not conclusive.

The Mystery of the Personal Saving Decline

In the 1980s, personal saving declined to a particularly low level despite favorable tax changes and high real interest rates, which should have encouraged saving. Personal saving fell by all official measures compared with previous decades, although the decline was greater as measured in the national income and product accounts (NIPA) than in the flow of funds accounts (FOF), which include purchases of consumer durables in their definition of personal saving.[1]

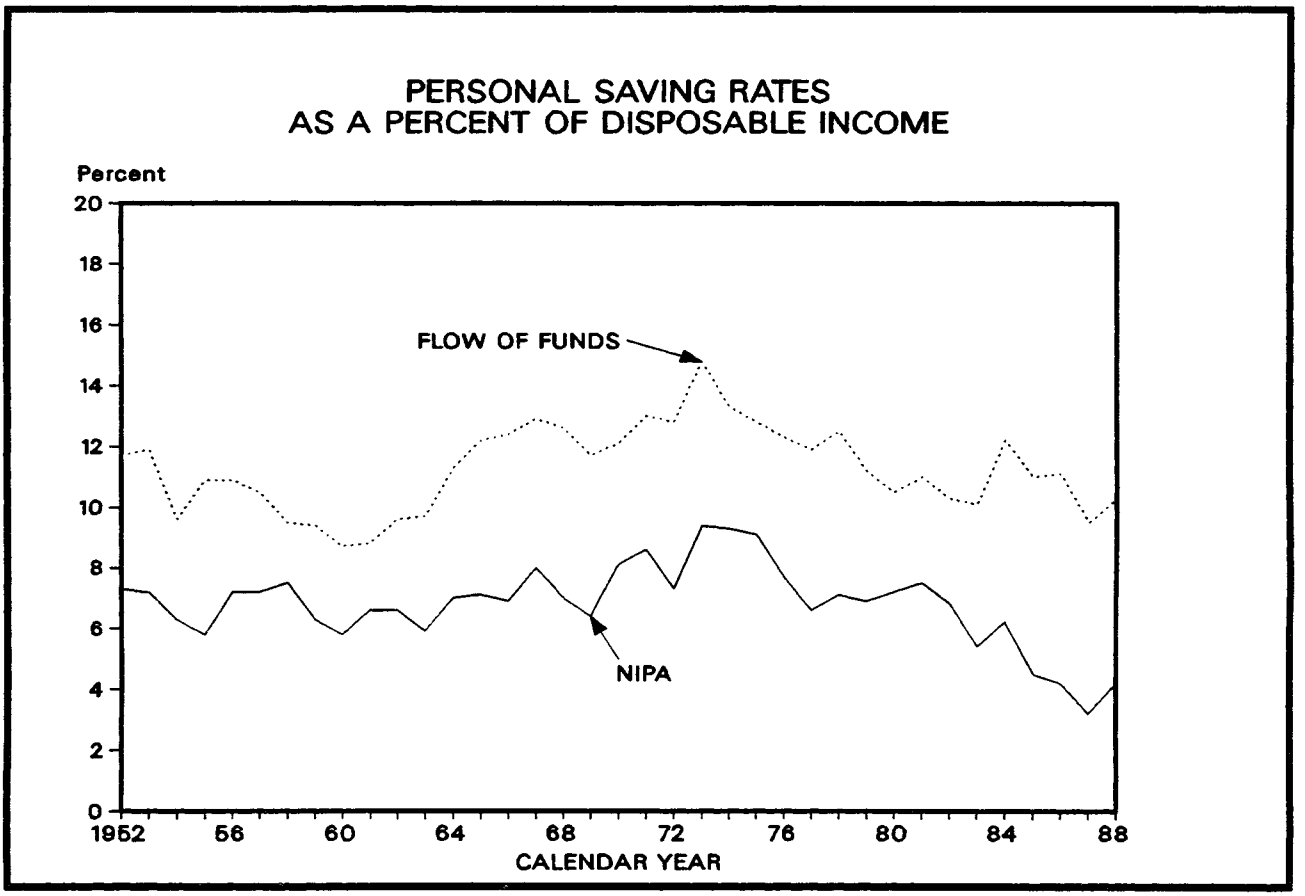
In some ways, the 1980s offered a favorable climate for saving. The 1981 Economic Recovery Tax Act reduced taxes on saving by lowering marginal tax rates for the first time in almost two decades. The 1986 Tax Reform Act lowered the top marginal tax rate from 50 percent to 33 percent, and phased out the tax deductions for most consumer interest expenses. Furthermore, real interest rates were high. These developments should have been conducive to a higher rate of personal saving.

Other factors were evidently at work. In part, lower personal saving in the 1980s reflected a demographic phenomenon—the entrance of the baby-boom generation into the prime buying and borrowing phase of their lives. This increased the demand for cars and home appliances.

Another important reason for the decline in the personal saving rate was undoubtedly the increase in the value of household wealth. Since 1982, household financial assets have been substantially revalued by the surge in stock and bond prices. In the 1970s, and to a lesser extent in the 1980s, rising home prices had a similar effect on household wealth. Neither the NIPA nor the FOF saving measure takes account of the appreciation in asset values. But for individuals, higher prices for the assets they own, including their homes, are financially equivalent to new saving.

Employers' contributions to pensions are included in personal income and saving. Such contributions grew rapidly during the 1970s, partly because many private pensions were not adequately funded. Statutory changes required a higher degree of funding, which raised personal income, saving, and the saving rate. But in the 1980s, with the boom in stock prices, employers' contributions to pension plans have been scaled back considerably, lowering the measured personal saving rate but adding to business saving.

[1] Both measures of saving reflect new purchases of housing (housing purchases are classified as investment, not consumption, so they are automatically included in saving which is defined in both sets of accounts as the difference between income and consumption). Neither measure of saving, however, reflects the revaluation of housing or other assets, so if existing houses become more valuable, the increase in wealth that this represents is not included in saving. In principle, asset revaluations should be reflected in the saving rate, but accurately measuring such capital gains presents practical difficulties.



To the extent that demographic factors were responsible for the decline in personal saving in the 1980s, there is reason to expect that saving may recover somewhat in the 1990s. These should be high-earning years for the baby-boom generation as they enter their 40s and 50s. If they follow the pattern of earlier generations, these will also be their high saving years as they prepare for retirement in the next century. But relying on demographic developments alone to raise the saving rate would be unwise.

FEDERAL DISSAVING

The Federal Government has run a budget deficit for most of the past 60 years. In 1979, at the end of the business expansion of the late 1970s, the deficit had fallen to less than 2 percent of GNP. Over the next 4 years, it rose, reaching 6.3 percent of GNP in 1983. The deficit was pushed up initially by the two business recessions at the beginning of the decade, but when the economy began to recover, the deficit was slow to decline. In 1987 the deficit began to show a significant decline, and by 1989 it had dropped to just under 3 percent of GNP. But this still represents substantial Federal dissaving, especially coming after a lengthy period of economic growth. Borrowing to finance the deficit, in effect, "uses up" part of the limited supply of private saving.

Federal dissaving, combined with the decline in private saving, has had significant economic consequences. The insufficiency of total national saving was evident in the high real interest rates charted in the business investment section above. High rates of interest kept the cost of capital high, diminishing domestic investment, slowing the growth of the capital stock, and, ultimately, lowering the future path of GNP. These effects have occurred despite a massive inflow of foreign saving (discussed below), though the importation of savings mitigated the effect on investment. With the need to expand potential capacity and to increase domestic saving so evident, Federal deficit re-

duction must be looked to for a substantial share of the required improvement.

FOREIGN SAVING

The United States current account deficit widened from a small deficit of $7.0 billion in 1982 to a record deficit of $143.7 billion in 1987. It has narrowed in the past 2 years, reaching an annual rate of $113.5 billion in the first three quarters of 1989. The counterpart to our current account deficit is a capital account surplus represented by foreign capital inflows, or foreign investment in the United States.

International capital markets channel resources from countries with excess domestic saving over investment (e.g., Japan) to those where domestic saving is low relative to domestic investment. The table below shows trends in United States domestic saving and investment, highlighting the role of the foreign saving inflow in closing the gap between the two. Given the sharp decline in U.S. net domestic saving, private investment would have fallen much more than it did if capital had not flowed in from abroad.

Although it is possible for a country to run a current account deficit for as long as foreigners are willing to add to their net holdings of its assets, there is a tendency over time for such imbalances to be corrected. Eventually, the United States' reliance on foreign capital will decline. When that happens, the United States will have to increase its export earnings to service the capital it has borrowed abroad. During the transition to a higher level of net exports, either consumption or domestic investment will have to grow more slowly than total national output. The best way to manage this transition would be to increase domestic saving by both Government and the private sector. That would have the advantage of cushioning domestic investment, while voluntarily slowing the growth of consumption.

SOURCES OF U.S. NET INVESTMENT

(As percent of GNP)

	U.S. net domestic saving	+	Inflow of foreign saving	=	Net private domestic investment
1960–69	7.7		−0.6		7.1
1970–79	7.1		−0.2		6.8
1980–89	3.0		1.6		4.6
1980–85	3.6		0.9		4.5
1986	1.5		3.2		4.7
1987	1.4		3.3		4.7
1988	2.4		2.4		4.9
1989: Q1–Q3	2.5		1.9		4.4

INTERNATIONAL SAVING COMPARISONS

The United States national saving rate has ranked near the bottom among the major industrial countries throughout the postwar period. Personal saving is considerably lower than in other countries, even after adjustments are made for differences in definition.

The rate of general government saving in the United States also ranks low. The gap is particularly wide when comparing the U.S. saving rate with those of Japan and Germany.

In the international system of national accounts on which these comparisons are based, some public physical capital formation is treat-

ed as saving. This is especially important in the comparison between the United States and Japan. The Japanese Government invests approximately 6.7 percent of Japanese GNP in public nonmilitary capital. The United States only invests about 2.1 percent of GNP.

PERSONAL SAVING RATES: 1981-86

(As percent of disposable income)

	Gross saving	Including consumer durables	Including saving of social security	Adjusted for private pensions, life insurance	Including inflation gains or losses
United States	13.2	22.5	12.8	7.8	9.9
Italy	24.4	31.9	24.7	23.3	12.0
Japan	21.6	26.1	24.6	18.3	19.7
Canada	18.7	30.1	19.6	14.0	13.9
France	15.6	22.7	16.1	14.6	12.0
Finland	12.1	21.5	12.0	N.A.	N.A.
U.K.	10.7	19.2	10.7	2.7	8.4
Sweden	6.3	14.8	10.8	4.3	N.A.
U.S. ranking	5/8	5/8	5/8	5/7	5/6

N.A.: Not available.

If the comparisons were made using the United States' national income definitions, which exclude public capital formation from net saving, the United States and Japanese saving rates would be much closer. Indeed, if the Japanese had measured depreciation as the United States does, the two countries' net saving rates would have approached one another in the late 1970s. Nonetheless, even on this basis, a large difference between the United States and the Japanese saving rates persisted throughout the 1980s due to the higher personal saving of Japanese households and the widening of the United States Government's budget deficit at a time when the Japanese budget deficit was declining.

NET SAVING RATES BY SECTOR, 1980-87

(Net Saving as a percentage of Net National Income)

	Total	Government*	Households	Enterprises
Japan	20.3	4.1	13.5	2.7
Italy	12.8	N.A.	N.A.	N.A.
Germany	10.8	1.4	8.9	0.5
Canada	9.9	−3.9	9.7	4.1
France	8.6	N.A.	N.A.	N.A.
U.K.	6.3	−1.6	5.0	3.4
United States	4.2	−3.9	6.2	2.0
U.S. ranking	7/7	4/5	4/5	4/5

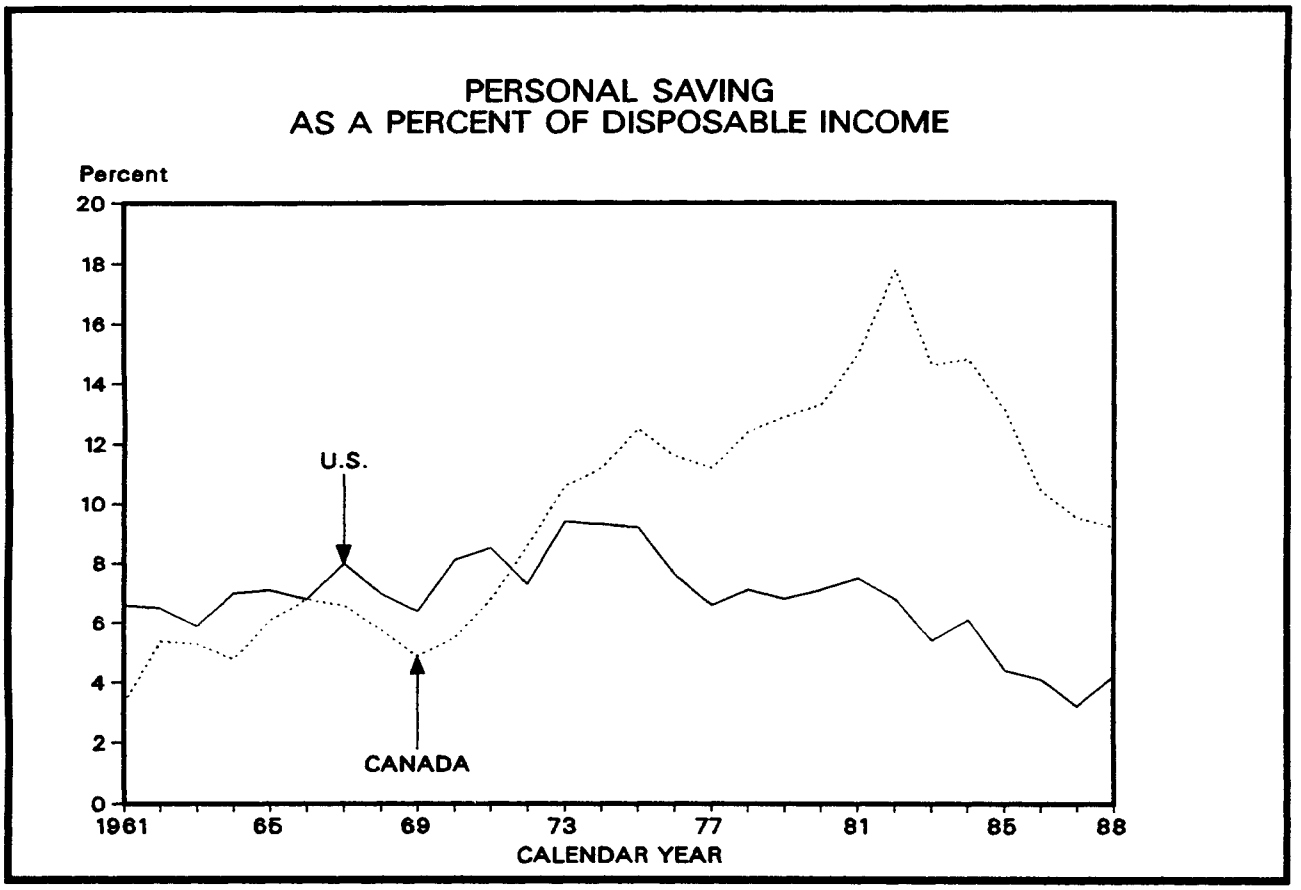
* Includes some public physical capital investment as saving. N.A.: Not available.

Although the gap between U.S. and foreign private saving rates cannot be fully explained, several features of the tax code make saving more costly and borrowing cheaper in the United States.

The United States taxes nominal capital gains more heavily than the other industrial countries, with the exception of Australia and the United Kingdom, both of which index long-term capital gains. Indexing reduces the effective tax rate on real capital gains compared with the United States.

Interest income is fully taxed in the United States and dividends from equity holdings are taxed at both the individual and the corporate level, a less advantageous treatment than is typically available elsewhere. For example, Japan has historically allowed most interest income to escape taxation.

It is instructive to compare the United States saving rate with that of Canada because the two countries are closely linked geographically, economically, and culturally. For most of the postwar period, the rate of household saving in Canada fell short of that in the United States, but in the last decade, it leaped ahead when significant differences emerged in the way the two countries tax saving. Canada indexes capital gains before taxes, which effectively lowers the rate of tax on real capital gains compared to the United States. Moreover, since the early 1970s, Canada has allowed even more generous tax deductions for retirement saving plans than the deductible IRA plan that was in effect between 1982 and 1986 in the United States. The shift in the two countries' relative saving behavior began at about the time when Canada introduced these new saving vehicles.



POLICY PROPOSALS

The analysis here has shown that the United States saving rate is low by historical standards and relative to other countries. Low saving has contributed to higher real interest rates, which serve to ration the limited supply of saving. The higher cost of capital as a result of these interest rates has held down United States domestic investment. Investment would have been even lower had it not been for a massive inflow of foreign capital to the United States in recent years, partly induced by the high level of interest rates available here. While foreign investment in the United States has helped to sustain capital formation and productivity growth, it means that the United States has taken on debt which must be serviced through interest payments. For all these reasons, increased domestic saving is of major importance for promoting higher rates of growth and an improved standard of living.

A major step the Federal Government can take to increase total national saving is to balance the Federal budget by 1993, as called for by the G-R-H deficit targets, and to retire Federal debt in subsequent years by the amount of the social security surplus. It is, of course, essential that this be achieved through specific measures that, themselves, encourage—or at least do not discourage—private saving, investment, and productivity growth. If this is done, the Government will become a major source of investment resources, instead of being a drain on private saving. Nonetheless, the decline in the saving rate was not limited to Government, and private saving needs to increase as well.

DEFICIT REDUCTION IN LINE WITH THE G-R-H TARGETS

The President's budget meets the G-R-H target for 1991 and beyond, balancing the Federal budget by 1993. Such an improvement in Federal finances would have a number of positive effects on saving and investment. The budget assumes that interest rates will fall over the next 6 years. This assumption is based partly on the projection of continued progress in eliminating inflation from the economy. It is also based on the expectation that, when further progress is made toward reaching the G-R-H targets, financial markets will respond with lower real interest rates. Lower real interest rates, by lowering the cost of capital, will encourage more investment.

PROTECTING SOCIAL SECURITY

Achieving the G-R-H targets will increase national saving, but more needs to be done to accelerate growth and thereby ease the burden of future liabilities. The Administration proposes to protect the integrity of the social security surplus, as described in detail in Parts VI-A and VII-A of this Section. Under this proposal, the social security surplus will be preserved for the benefit of future retirees rather than spent to finance current Government programs.

If the Government uses the social security surplus wisely, national saving and investment will rise and the capital stock will be higher. Estimates based on economic growth accounting suggest that by around the year 2030 the capital stock could be over 20 percent higher and real GNP could be 5 to 10 percent higher if Federal debt is retired in the same magnitudes as the social security surplus. Higher incomes would produce a higher tax base, reducing the burden on future workers when the baby-boom generation reaches its retirement years.

Retiring Federal debt will have other favorable effects. Real interest rates should be lower, the inflow of foreign capital should be lessened, the current account deficit should diminish, and United States competitiveness with the rest of the world should be strengthened.

Finally, augmenting national saving while protecting the social security surplus would avoid intergenerational inequities that would arise if the present generation does not provide for more capital to help fund its retirement benefits. Resources would be provided now through saving and investment which could be used to meet the burden of supporting the current working population in its old age. Unless the integrity of the social security trust funds is protected, there is a danger that workers'

living standards could stagnate in the next century. It is important that the projected surplus of social security not be used to finance Government consumption.

CAPITAL GAINS

Lower tax rates on capital gains are needed to promote saving, entrepreneurial activity, risk-taking investment—and, thereby, higher employment and an improved quality of life. Lowering the tax rate on capital gains would lower the cost of capital in vital areas of investment activity. The Administration proposes reducing the tax rates on capital gains for long-term investments by providing a sliding scale exclusion on long-term capital gains.

A 30 percent exclusion would be provided for investments held at least 3 years. There would also be a 20 percent exclusion for capital gains on investments held between two and 3 years, and a 10 percent exclusion on investments held between one and 2 years. For investments held at least 3 years, the maximum tax rate on capital gains would be reduced to 19.6 percent for taxpayers in the 28 percent tax bracket. The 3-year holding period requirement for the full 30 percent exclusion would be phased in over a 3-year period. In order to focus the proposal on productive investments, capital gains on collectibles, such as antiques and precious metals, would not be eligible for an exclusion.

A reduction in the capital gains rate would help United States businesses in the face of increasing global competition. Currently, the tax rate on capital gains in the United States is higher than in any other industrialized country except Australia and the United Kingdom, and both of these countries index capital gains for inflation, thereby limiting the tax to real gains and effectively reducing the tax rate.

Finally, a reduction in the tax on capital gains from its current level is likely to produce increased receipts for the Treasury.

FAMILY SAVINGS ACCOUNTS AND ENHANCED IRAS

The Family Savings Account (FSA) is proposed by the Administration to stimulate private savings. As discussed above, savings are at low levels both in terms of historic American experience and relative to other countries.

The proposal would exempt from income tax the interest income for nondeductible contributions to FSAs that are held for 7 years. Nondeductible contributions to the FSA are limited to $5,000 for joint filers and $2,500 for those not filing a joint return. FSA contributions are limited to joint filers with incomes below $120,000 and single filers with incomes below $60,000. Withdrawals taken after 7 years are made tax free, and those made before 3 years are subject to a 10 percent excise tax penalty on investment income. Withdrawals made before expiration of the 7-year period are subject to income tax on the investment income.

The FSA would expand the current limits on tax-favored savings. It does not change current contribution limits on 401ks, current law IRAs, or Keoghs. Because the FSA would increase the contribution limits on tax-favored savings, it would provide an increase in the marginal incentive to save.

An additional goal of the FSA proposal is to make savings more attractive to a larger segment of the population than is reached under current law. The liquidity of the FSA would encourage saving for major expenditures, such as housing and education.

In addition, the Administration proposes to modify current individual retirement account (IRA) rules to allow a waiver of the 10 percent excise tax penalty for early withdrawals of up to $10,000 if the withdrawn funds are used for first-time home purchases. The amount withdrawn would be taxed at the taxpayer's marginal tax rate. To be eligible for the waiver, the taxpayer would have to be a first-time home purchaser, and the home purchased must cost no more than 110 percent of the median home price in the area.

Increases in the cost of homes have made it increasingly difficult for first-time home buyers to enter the housing market. A waiver of the excise tax penalty for early withdrawals for first-time home purchases should make IRAs a more attractive savings instrument for individuals seeking to purchase their first home.

III.B. EXPANDING THE HUMAN FRONTIER—SPACE AND BIOTECHNOLOGY, AND THE SUPERCONDUCTING SUPER COLLIDER

Since the beginning of civilization, humankind has sought to explore the frontier and increase its knowledge of the world. Humans have endeavored to discover the innermost secrets of living cells, indeed, to discover what particles make up all matter; and to explore our world from the deepest oceans to the outermost boundaries of our solar system and beyond. Today there are unprecedented opportunities to expand the frontier of knowledge and to expand human presence and activity. The budget places a priority on three of the most exciting frontiers now being explored: space, to unlock the secrets of the universe; biotechnology, to unlock the secrets of life itself and apply them for the benefit of all; and high-energy physics, including the development of the Superconducting Super Collider, to unlock the secrets of matter and energy.

EXPANDING THE HUMAN FRONTIER—FUNDING SUMMARY

(Dollar amounts in millions)

	Budget Authority			
	1990 enacted	1991 proposed	Dollar change	Percent change
Understanding and Exploring Space: NASA	12,323	15,239	+2,916	+24
Improving Productivity and Quality of Life: Biotechnology	3,364	3,579	+213	+6
Unlocking the Secrets of Matter and Energy: High Energy Physics and the Superconducting Super Collider	1,139	1,315	+176	+15

UNDERSTANDING AND EXPLORING SPACE: NASA

The exploration of space has benefits for the United States that go far beyond the quantifiable. There are specific payoffs in the form of new materials, technological discoveries and microgravity research. The eventual commercialization of space will stimulate economic growth and improved life on Earth. But no price can be put on the lifting of the spirit of people everywhere, like that which occurred at the time of the Apollo landings on the Moon. No value can be calculated for the wonder engendered by the pictures of Jupiter, Saturn, Uranus and, in August of 1989, of Neptune sent back over millions of miles by Voyager. And no quantitative measure of any kind can capture the benefit of expanding human horizons, human dreams, and the human domain.

The key to developing space successfully will be stable and sustainable funding for a balanced Federal program of science, applications, and manned space activities, coupled with encouragement by the government of develop-

ment by the private sector of the commercial potential of space. The 1991 budget is concrete evidence of the firm commitment by the President to a continuing, active and exciting American presence in space—indeed, to America's leadership in space science and exploration.

The 1991 budget proposes to allocate $15.8 billion for space activities, including $15.2 billion for the National Aeronautics and Space Administration (NASA), an increase of $2.8 billion or 22 percent. NASA's total budget of $15.2 billion represents an increase of $2.9 billion or 24 percent over 1990. This is the largest increase for any major agency of the Government. It represents a commitment to a brighter future.

THE U.S. CIVIL SPACE PROGRAM

The U.S. civil space program has made major advances and achieved stunningly ambitious goals since it was created four decades ago.

In unmanned planetary exploration, U.S. spacecraft have made essentially a "grand tour" of the major planets in our solar system and have landed unmanned vehicles on Mars to explore its surface. In astronomy, U.S. orbiting observatories have given us a window on the stars and into the creation of the universe. This window will be enlarged, by several orders of magnitude, with the long-awaited launch in 1990 of the first of the orbiting "Great Observatories", the Hubble Space Telescope. Earth observations satellites have given us a wealth of information about our planet—information that will assist us in understanding and solving our most serious environmental problems.

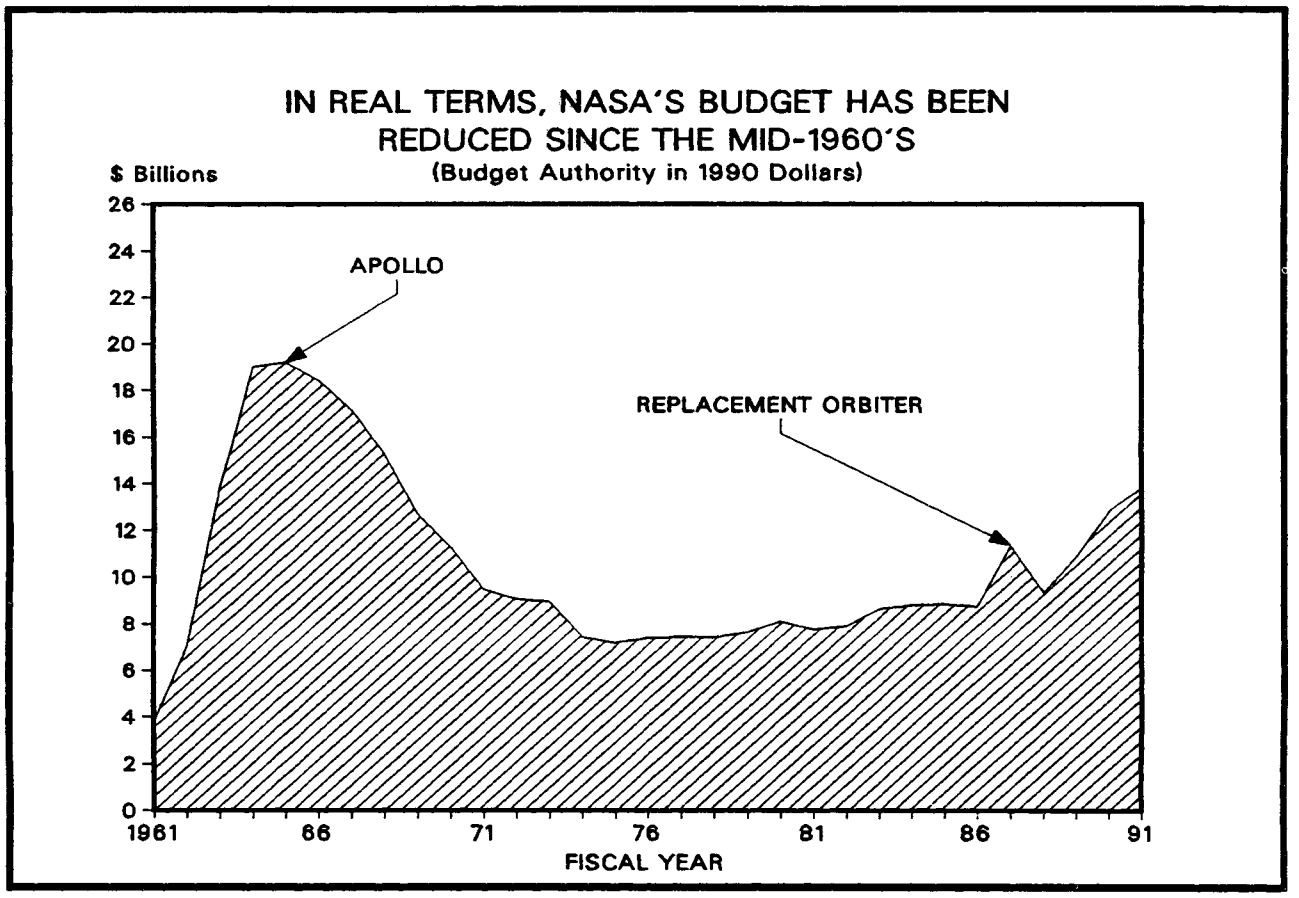
In 30 years, the progress of manned space flight has been truly amazing: the time from the first suborbital flight by Alan Sheppard to the first steps by humans on another heavenly body—the Moon—was less than a decade. This was followed by the development of the world's only manned reusable space vehicle, the Space Shuttle. This versatile vehicle can launch satellites, retrieve satellites for repair, and be used as an orbiting laboratory. Today, the United States, with its international partners, is developing the Space Station Freedom, which—when it is launched in the mid-1990s—will be the world's first permanently-manned microgravity and life sciences laboratory. It will eventually have the capability to service satellites in orbit and to serve as a way station on the journey to the Moon and Mars. Despite these remarkable successes, the United States has reduced over time its funding of the space program. The following chart illustrates the historical pattern of Federal funding for NASA.

As the figure shows, funding for space activities rose and fell precipitously during the Apollo era, then remained level during the 1970s. Funding for space activities is now rising again with the resumption of Space Shuttle flights and with the development of Space Station Freedom. Funding for space science has remained relatively stable over this period, with some increases in recent years.

The benefits of space for the U.S. economy and society are numerous and substantial. For example, the satellite communications industry is a direct result of the development of space communications technology. "Live via satellite" would not be possible today without the early Federal investment in space. As evidenced by a wide variety of other advances—from new lightweight materials for aerospace and other applications, to life-saving breathing equipment used by firemen, to long-lived, micro-miniaturized electronics now used in medical equipment such as pacemakers—the space program continues to create new business opportunities and to contribute to the economy.

SPACE AND THE 1991 BUDGET

The 1991 budget provides major increases for space activities—including research, development, and operations—to meet four broad objectives, all of which are important to maintaining the Nation's world space leadership. These areas are: (1) building transportation infrastructure; (2) expanding the space frontier through manned exploration; (3) using space to increase our scientific understanding; and (4) developing the commercial potential of space. The following table shows the level of funding proposed in the 1991 budget for each of these four objectives, as well as for Space Station Freedom (which supports all of the objectives) and for operational activities.



THE BUDGET CALLS FOR A 22 PERCENT INCREASE FOR FEDERAL CIVIL SPACE ACTIVITIES

(Dollar amounts in millions)

Objective	Budget Authority			
	1990 estimate	1991 proposed	Dollar change	Percent change
Building transportation infrastructure	7,182	8,236	+1,054	+15
Expanding the space frontier through manned exploration	859	1,267	+408	+47
Using space to increase our scientific understanding	2,718	3,311	+593	+22
Space Station Freedom	1,928	2,627	+699	+36
Developing the commercial potential of space	61	106	+44	+72
Federal operational activities	243	258	+15	+6
Total, all agencies	12,991	15,805	+2,813	+22
Total, NASA	12,322	15,239	+2,917	+24

Building Aeronautics and Space Transportation Infrastructure

The National Space Policy mandates that the nation maintain a balanced and flexible space transportation infrastructure. No other space objective would be achievable without safe, reliable space transportation. Historically, the Federal Government has developed, built, maintained and operated the nation's space transportation systems—both expendable launch vehicles and the Space Shuttle. Today, however, that is changing. Commercial firms are providing expendable launch vehicle services for both government and commercial payloads. The following table illustrates the level of Federal funding proposed for fiscal year 1991 to meet the space transportation objective.

The budget proposes funding for Space Shuttle production and operations of $4.2 billion, an increase of $752 million, or 22 percent, over 1990. This funding will support the launch, mission, and landing operations for 10 Shuttle flights planned for 1991, plus the continued acquisition of long-lead spare parts, and support for Shuttle payloads.

THE BUDGET INCLUDES FUNDING FOR 10 SHUTTLE FLIGHTS IN 1991

(Dollar amounts in millions)

	Budget Authority			
	1990 estimate	1991 proposed	Dollar change	Percent change
Space Shuttle production/Shuttle improvements	1,120	1,302	+183	+16
Space Shuttle operations	2,319	2,889	+571	+25
Space transportation capability development	504	683	+179	+36
Expendable launch vehicle (ELV) services [1]	98	131	+33	+34
Tracking and data acquisition	1,096	1,002	−94	−9
Aeronautics R&D [2]	450	512	+62	+14
Facilities and program management	1,596	1,716	+120	+8
Total	7,182	8,236	+1,054	+15

[1] Excludes ELV's being purchased in support of robotic science missions for exploration.
[2] Excludes R&D for the National Aerospace Plane program.

The Space Shuttle.—The Space Transportation System (STS) is composed of the Space Shuttle fleet, currently three orbiters with a fourth under construction, and the associated infrastructure (such as launch pads, communications and tracking, and orbiter processing and assembly facilities). The Shuttle is the most versatile space launch vehicle in the world. It is a reusable, multipurpose vehicle that launches and retrieves satellites, and provides an orbiting laboratory for microgravity and life sciences. Techniques for manufacturing commercially-valuable products, such as medical diagnostics and therapeutics, have been tested successfully aboard the Shuttle.

However, the Shuttle is also very complex and expensive to operate. For example, the three main engines of the Shuttle have many thousands of moving parts, each of which must function perfectly during each launch. In order to support its reusable elements, the STS requires a large infrastructure, both facilities and personnel, to maintain and operate it.

Prior to the Challenger accident, funding for the R&D associated with improvements in space transportation was declining and funding for operations was increasing as the number of Shuttle missions increased. The Challenger accident made it clear that continued funding for R&D to maintain and improve the safety, reliability and performance of the

Shuttle is vital. This fact is reflected in the 1991 budget by the continuation of the Advanced Solid Rocket Motor program, which will develop and produce a new, more reliable generation of solid rockets, and by continued funding of other necessary Shuttle improvements, such as the Advanced Turbopump for the Shuttle main engine. Within the total for Shuttle Production, the budget proposes $947 million for these elements, an increase of $165 million over 1990.

Expendable Launch Vehicles (ELVs).—The National Space Policy requires that civil Federal agencies encourage, to the maximum extent feasible, a domestic commercial launch industry by contracting for necessary ELV launch services from the private sector. This policy not only encourages and supports the growing commercial space launch industry, but also ensures the availability of a balanced and cost-effective mix of space launch vehicles. NASA no longer maintains or operates its own ELVs. In 1991, NASA will continue the purchase of ELV services for a number of important science payloads, including the Comet Rendezvous/Asteroid Flyby and Cassini missions.

Aeronautics R&D.—The goal of NASA's aeronautical R&D program is to conduct research and develop technology to strengthen U.S. leadership in civil and military aviation. NASA also operates unique aeronautical research and testing facilities. The 1991 budget reflects a strong program of fundamental research and technology, including the continuation of efforts aimed at resolving critical environmental issues associated with high-speed flight. In addition, NASA will continue the five-year wind tunnel revitalization program to modernize NASA's major wind tunnels for productive use well into the next century.

Expanding the Space Frontier Through Manned Exploration

The President has proposed that the United States undertake an ambitious mission of manned exploration of the solar system. This will not be a journey of 10 or even 20 years, but one that will continue for decades, perhaps even centuries. This journey will require a long-term commitment—of resources, both financial and human, and of national will.

The Government has taken the first step toward expanded manned exploration with the development of Space Station Freedom. The 1991 budget also funds a new initiative to support the robotic science missions and to develop the "pacing technologies" that will be needed in the coming decade to enable the next steps in the journey. Over the coming months and years, the National Space Council will be coordinating the development of the overall strategy for pursuing the goal of space exploration.

Space Station Freedom.—Space Station Freedom will serve a wide variety of purposes: it will be a microgravity and life sciences laboratory, a testbed for new technologies in areas such as life support and robotics, a platform for astronomical and Earth observations, and a node for on-orbit servicing of satellites. Freedom will also be the cornerstone of the President's exploration initiative in the next decade. Assembling and operating Freedom in space will produce advances in knowledge about how man can live and work in space for long, continuous periods of time. This knowledge is critical for any future journeys.

For 1991, the budget proposes a total of $2,627 million to continue Space Station Freedom. This is an increase of $699 million, or 36 percent above 1990. It will provide for the critical transition from design to actual fabrication of the first long-lead time hardware elements.

CONSTRUCTION WILL BEGIN ON SPACE STATION FREEDOM IN 1991

(Dollar amounts in millions)

	Budget Authority			
	1990 estimate	1991 proposed	Dollar change	Percent change
Space Station Freedom:				
Research and development	1,750	2,431	+681	+39
Facilities and program management	178	196	+18	+10
Total, Space Station Freedom	1,928	2,627	+699	+36

Freedom is being developed with our international partners and is the largest international R&D project ever undertaken. Over the past several months, the program has been revised as it became clear that the Congress would not provide the resources that the President requested for 1990. The result of this reevaluation has been to delay the availability of some capabilities (e.g., satellite servicing) until the Space Station is completely assembled, and to eliminate some high development cost items (e.g., all A-C power system). The revised schedule calls for the first element launch in 1995, permanently manned capability in 1997 and completion of assembly in 1999. NASA is now conducting an analysis of how Freedom can be best used to support the President's exploration initiative.

Expanding the Space Frontier Through Manned Exploration: the Mission Back to the Moon and to Mars.—The President has lifted the sights of the space program with his call for the establishment of a manned presence on the moon and a manned mission to Mars. The budget reflects the Administration's commitment to this mission by proposing an increase of $408 million, or 47 percent above fiscal year 1990 levels, for space exploration activities. The budget includes major increases for launching robotic science missions, accelerating the development of the technology and advanced launch systems to support expanded exploration, and proceeding with technology development for the National Aerospace Plane (NASP).

A 47 PERCENT INCREASE FOR EXPLORATION ACTIVITIES WILL SUPPORT THE MOON/MARS INITIATIVE

(Dollar amounts in millions)

	Budget Authority			
	1990 estimate	1991 proposed	Dollar change	Percent change
Expanding Exploration of Space:				
Robotic Science Missions:				
Life sciences	50	80	+30	+60
Unmanned Moon-Mars missions	187	228	+41	+22
Technology Development:				
Space power (SP-100):				
National Aeronautics and Space Administration	10	30	+20	+200
Department of Defense	20	20	—	—
Department of Energy	30	51	+21	+70
Subtotal, SP-100	60	101	+41	+68
Advanced Launch System:				
National Aeronautics and Space Administration	—	44	+44	N.A.
Department of Defense	111	85	−26	−23
Subtotal, Advanced Launch System	111	129	+18	+16
Other Technology Development	191	386	+195	+102
Mission studies	(15)	37	+22	+147
National Aerospace Plane:				
National Aeronautics and Space Administration	59	119	+60	+102
Department of Defense	192	158	−34	−18
Subtotal, National Aerospace Plane	251	277	+26	+10
NASA Facilities and Program Management	9	28	+19	+211
Total, Exploration Initiative	859	1,267	+408	+47

N.A.: Not applicable.

Robotic Science Missions.—Prior to initiating a manned mission to the Moon or Mars, important information must be gathered about those bodies—their surfaces, the atmosphere of Mars—so that manned missions can be carried out with maximum safety and effectiveness. This information is best obtained with robotic science missions. The 1991 budget proposes a significant enhancement for the Mars Observer, scheduled for launch in 1992. This enhancement will support the modification of systems and software to provide upgraded high-resolution image processing and allow more information on the Martian surface and atmosphere to be sent back to Earth. In addition, the budget provides funding to complete the definition studies and cost analyses for a new mission, the Lunar Observer, which would be initiated in 1992 for a 1996 launch date. Modeled after the Mars Observer, the Lunar Observer will provide valuable information about areas of the Moon never before examined.

Life sciences represent another critical area of research that must be undertaken in order to understand and potentially counteract the effects of long-term space flight on humans. The 1991 budget proposes $80 million for biological and space biomedical research. Within this total, funding will be provided to complete the definition for the Lifesat program. Lifesat will be a series of reuseable satellites designed to carry living specimens into orbit, to monitor and study critical parameters such as radiation exposure, and to return the living specimens to Earth for analysis. Following the com-

pletion of definition in 1991, Lifesat development will be initiated in 1992 with the first launch in 1994.

Developing New Technologies for the Future.—There are a number of technology areas that must be investigated if future missions to the Moon and Mars are to be undertaken. These "pacing" technologies include transportation, space power, and life support. The 1991 budget proposes to increase ongoing technology development programs in transportation and space power, and to make additional investments in new areas such as nuclear propulsion and life support.

- Transportation.—The technologies inherent in the Shuttle and in the current generation of ELVs are now between 20 and 40 years old. In addition, both the Shuttle and current ELVs emphasized performance over cost-effectiveness. Thus, there is little chance of significantly reducing the cost-per-pound to Low-Earth-Orbit without major advances in launch vehicle technology. More cost-effective transportation systems would lower the cost of any future exploration initiative. In addition, lower cost, reliable transportation systems will be needed if the private sector is ever to fully exploit the benefits of space.

  To address these issues, the 1991 budget proposes $277 million in total ($119 million for NASA and $158 million for DOD) for the continued development of the National Aerospace Plane (NASP), a joint NASA-DOD project that will develop and demonstrate technologies for hypersonic flight, including single-stage-to-orbit. The 1991 budget also proposes $129 million for both NASA and DOD to continue their technology development for the Advanced Launch System (ALS). The ALS technology program will define concepts and develop technology applicable to a new family of launch vehicles. The long-term goal of the program is to produce a family of lower-cost, reliable and flexible launch vehicles.

- Space Power.—More efficient and high-energy power sources that are not dependent on sunlight will be necessary both for long-term missions in space and for manned bases on planetary surfaces. One option is nuclear power. The SP-100 program being carried out jointly by NASA and the Departments of Defense and Energy is designed to test the concept of the generation of electricity by a nuclear reactor for space applications. The budget proposes to increase funding for SP-100 by 68 percent, to a total of $101 million.

- Other Technologies.—There are a number of other important technologies in which investments must be made now to support the exploration initiative. These technologies have the potential to significantly reduce the cost and risk of future manned exploration. Among these are propulsion, including nuclear propulsion, life support, and flexible structures (both in space and on planetary surfaces). The 1991 budget proposes funding of $386 million for these technologies, more than double the 1990 level. Within this total, NASA will initiate a new effort to seek innovative technological approaches to the challenges of manned space exploration. In addition, the agency will be reviewing its current technology programs with the intent of revising and refocusing these programs to support the President's goals.

Using Space to Increase Scientific Understanding

Perhaps the greatest benefit derived to date from our space activities is the United States' strong and continuing tradition of world leadership in space science—most recently and vividly demonstrated by the Voyager Neptune encounter in 1989. The U.S. and the world space science communities are anticipating an exciting new era of space science missions for planetary exploration, astronomy and Earth observations over the next decade. The budget proposes to increase funding for these activities by $593 million, or 22 percent, over 1990 levels.

USING SPACE TO INCREASE SCIENTIFIC UNDERSTANDING

(Dollar amounts in millions)

	Budget Authority			
	1990 estimate	1991 proposed	Dollar change	Percent change
Physics and astronomy	861	985	+124	+14
Planetary exploration	278	382	+104	+37
Earth observations:				
Earth observation system precursors	415	376	−39	−9
Earth probes	—	25	+25	N.A.
Earth observation system (EOS)	—	235	+235	N.A.
Subtotal, Earth observations	415	636	+221	+53
Other science programs	506	559	+53	+10
Facilities and program management	658	749	+91	+14
Total	2,718	3,311	593	22

N.A.: Not applicable.

This new era of space science advancement has already begun with the successful launches in 1989 of the Magellan mission to Venus, the Galileo mission to Jupiter, and the launch of the Cosmic Background Explorer aboard an ELV. Activities planned in 1990 include the planned launches of the Hubble Space Telescope and the Gamma Ray Observatory, two of the "Great Observatories", and the international Ulysses mission to explore the Sun.

The 1991 budget will also allow for the continuation of the development of important projects such as the Advanced X-ray Astrophysics Facility, planned for launch in 1995, the Comet Rendezvous/Asteroid Flyby and the Cassini mission to Saturn. The budget will also provide support for thousands of researchers and students to acquire and analyze data from previously launched missions.

Understanding and Observing Global Change

Earth Observations.—The budget proposes over $1 billion for all agencies to extend U.S. leadership in understanding global environmental change. This represents a 57 percent increase over 1990. There are a number of NASA activities that will make major contributions to the U.S. Global Change Research Program (USGCRP). This coordinated multi-agency program is the world's most ambitious global change research effort. At the Paris Economic Summit, the President asked the other industrialized nations to join the U.S. in this endeavor. The complementary space-based and ground-based research and observation effort is designed to develop the knowledge and data needed to support and improve policy decision-making on issues related to global change (e.g., global warming, ozone depletion). (The USGCRP is also discussed in the sections on Enhancing Research and Development, and Protecting the Environment).

NASA is a major participant in the USGCRP through its Mission to Planet Earth. NASA will develop and launch a number of satellites and instruments, including TOPEX (to analyze surface ocean circulation) and the Upper Atmosphere Research Satellite (UARS) (to analyze the chemistry of the upper atmosphere). The 1991 budget proposes a major new program, the Earth Observing System (EOS), which is a series of space-based instruments and platforms, developed by the U.S., the Europeans and the Japanese. EOS will be critical to improving our understanding of Earth processes and global change since it will provide the first opportunity to collect data simultaneously on a multitude of different features of the planet's environment.

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The 1991 budget proposes development of two series of Earth-orbiting platforms, each of which will have a number of instruments designed to collect a broad spectrum of environmental data related to global change (including global warming, drought and other phenomena). The first platform is planned for launch in 1998. In addition, NASA will continue to develop a comprehensive data management system (EOSDIS) that will support a wide range of research focused on studying Earth as an integrated system, and will ensure that scientists have timely access to Earth observations data.

In addition to EOS, the 1991 budget will initiate the development of Earth Probes, a series of smaller instruments focused on specific, high-priority data needs, including ozone depletion. The first Earth Probe will be launched in 1994. Along with TOPEX and UARS, Earth Probes will provide significant near-term scientific benefits, and will enable the testing and validation of EOSDIS before the launch of the first EOS platform.

Developing the Commercial Potential of Space

The commercial space industry today consists primarily of communications satellite manufacturers (which is a stable mature sector) and launch service providers (which is a new sector). There are also selected commercial efforts in areas such as microgravity. The commercial space industry represents a promising outgrowth of the nation's space program.

The commercial space industry has grown rapidly and has drawn hundreds of millions of private sector dollars into private space endeavors. For example, there are now many commercial launch providers and new launch vehicles, based on new design concepts such as air-launched systems and hybrid engine designs, being developed by firms willing to shoulder the risks of space. In addition, states such as Hawaii and Florida have started investing their own funds in the development of commercial space launch infrastructure.

As overseer of the growing commercial space transportation industry, the Department of Transportation (DOT) is responsible for identifying and changing government policies and regulations that inhibit the development of a robust commercial launch sector and for regulating and licensing commercial launches and launch sites. DOT now cites over 33 U.S. and foreign commitments to launch satellites on U.S. commercial launch vehicles.

The 1991 budget will continue the Administration's strong support for the commercialization of space. NASA will allocate $229 million to continue to procure all of its expendable launch vehicle services from private launch service providers. In addition, the budget will provide $101 million for NASA's Office of Commercial Programs, including new funding for a special initiative through its Centers for the Commercial Development of Space (CCDSs) to provide flight opportunities for innovative experiments in microgravity. The CCDSs are cooperative ventures between universities and companies that investigate and develop new commercial uses of space. The 1991 budget also provides nearly a 7 percent increase, to a total of $4.5 million, for DOT's Office of Commercial Space Transportation.

Federal Operational Activities

The 1991 budget proposes $258 million for the Department of Commerce satellite programs. This includes $174 million for the development and launch of replacement satellites for the current polar-orbiting and geostationary weather satellite systems and $47 million to operate those systems. The Administration is committed to operating the Land Remote Sensing Satellites (Landsats) currently in orbit (Landsats 4 and 5) as long as they function, and to completing the development and launch of the next satellite (Landsat 6). For 1991, $37 million is requested for the launch of Landsat 6. No funds are proposed for the operation of Landsat 6 because these costs will be borne by the contractor, the Earth Observation Satellite Company. No further funding is requested for Landsats 4 and 5 because these satellites are expected to cease operating in 1990.

The Administration is considering options for continuing Landsat-type data after Landsat 6. No funds are required in 1991 for additional satellites, consistent with the expected lifetime of Landsat 6. The National Space Council will conduct a review of the management and configuration of a follow-on system, and will report expeditiously to Congress on the outcome of its deliberations.

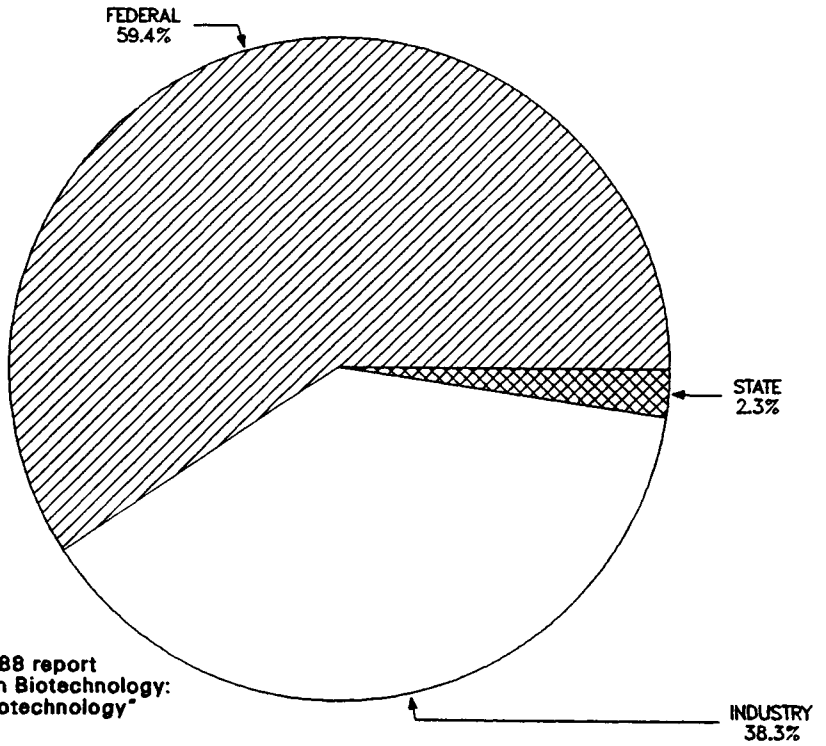
IMPROVING PRODUCTIVITY AND THE QUALITY OF LIFE THROUGH BIOTECHNOLOGY

Biotechnology is an ancient practice that includes such familiar applications as the use of yeast in baking bread and cultures in making cheese. Recent breakthroughs in biotechnology, such as recombinant DNA techniques, cell fusion, and gene therapy, offer unprecedented opportunities for improving the nation's productivity, health, and well being. Uncertainties in the returns on biotechnology investment, however, stemming from market barriers and unnecessary regulation, have retarded progress. Increasing Federal investment in basic biotechnology research will spur further advances, as will initiatives that improve the payoffs on investments.

The budget proposes $3.6 billion, an increase of $213 million over 1990, for biotechnology research and development.

Advances in biotechnology hold much promise. They can help improve the availability and quality of the food supply; prevent, identify, and cure disease; and reduce the hazards of industrial waste. Cell fusion, the merging of the genetic material of two cells of different species, can accelerate the selective breeding process for producing hardier and more fruitful crops and livestock. Gene therapy, replacing defective genetic material with normal DNA, may enable doctors to attack directly the source of major diseases, including cancer.

SOURCES OF U.S. BIOTECHNOLOGY INVESTMENT, 1987



SOURCE: OTA July, 1988 report "New Developments in Biotechnology: U.S. Investments in Biotechnology"

In drugs, foods, agriculture, waste management, and energy, biotechnological advances offer the possibility of improvements that will make a real difference in people's lives. In this sense, biotechnology is an "enabling" technology: we may be able to make products safer or more cheaply, and we may be able to produce goods that we could not produce at all using traditional methods.

In 1960, biotechnology as an industry was nearly non-existent; in 1989, United States businesses and government agencies invested about $5 billion in biotechnology research, development, and manufacturing. The 1990s offer room for still more growth, if investment is not impeded through excessive regulation.

Biotechnology is a classic case of investing for the future. U.S. industry is spending at least $2 billion a year on biotechnology research and development, even though sales of products manufactured using biotechnology only reached the $1 billion mark for the first time in 1989. It is clear that the private sector believes the return on this investment will be great. The budget reflects a similar belief for Federal investment.

FEDERAL INVESTMENT

Twelve Federal agencies spend more than $3 billion annually for biotechnology research and development, including the Departments of Health and Human Services, Energy, Commerce, Defense, and Agriculture, as well as the National Science Foundation, National Aeronautics and Space Administration, and the Department of Veterans Affairs. The budget would expand this investment by $213 million (or 6 percent).

Most of the support for basic biomedical research essential to the advancement of biotechnology has come from the National Institutes of Health (NIH). The National Science Foundation (NSF), National Oceanic and Atmospheric Administration (NOAA), and the Departments of Energy (DOE), Defense (DOD), and Agriculture (USDA) also fund research and development projects related to biotechnology, and Federal regulatory agencies (Food and Drug, Environmental Protection) fund research relevant to their regulatory missions. Some service-oriented agencies, including the Department of Veterans Affairs and the National Institute for Standards and Technology, fund biotechnology research connected with their service roles.

National Institutes of Health (NIH)

The 1991 budget will maintain the nation's commitment to pursue vigorously biomedical research opportunities. NIH-sponsored basic research helps form the foundation of knowledge which makes biotechnology possible. The budget proposes an increase of $280 million for NIH in 1991. Most of this increase will go toward support for basic research.

Human Genome Initiative.—The 1991 budget proposes an increase of 80 percent ($48 million in budget authority) for NIH's human genome initiative. Working with scientists at the Department of Energy, NIH will support research to identify and map every one of the estimated 100,000 genes in the human body. This project holds out the promise of benefitting humankind by identifying the genetic causes of diseases. Once these causes are identified, scientists may then be able to design therapies and prevention strategies for genetic disorders. The budget ensures that this tremendous opportunity will be pursued energetically in 1991.

DOE will work cooperatively with NIH through DOE laboratories to accelerate the mapping of the human genome by improving gene sequencing techniques, developing new instrumentation and exploring the unique capabilities of DOE facilities.

National Research Initiative for Agriculture

Although American farmers are among the most productive in the world, they face significant challenges in remaining competitive while addressing the public's concern about food safety, nutrition and the environment. Emerging biotechnologies may enhance our ability to produce food and address these concerns, using innovative approaches now beyond the reach of traditional agricultural practice.

Thus, the 1991 budget will launch a national research initiative more than doubling the size of USDA's competitive research grants program, from $43 million to $100 million. This will expand funds for plant and animal bio-

technology to $50 million, to be available to Federal research laboratories and to universities. Improved understanding of the basic biological processes that control plant and animal development will provide the foundation for the design of more economical production practices, to the benefit of consumers and producers alike. In addition, applying biotechnology may allow farmers to deal with pests and disease in environmentally-safe ways, thereby reducing dependence on chemical control and enhancing the overall safety and quality of the food supply. One important component of this National Research Initiative is an effort to map the genomes of important crop plants. Like the Human Genome Initiative sponsored by NIH, USDA's effort will permit scientists to explore more fully the genetic potential available in plants.

INVESTMENTS BY OTHER SECTORS

The Federal Government is not the only investor in this promising field. Private firms and state and local governments are also increasing biotechnology research.

Industry Investment

By 1975 the first firms were being formed to commercialize biotechnological products, in recognition of the potential of biotechnology. More than 400 start-up firms active in biotechnology have been founded in the last 15 years. Among established manufacturing firms, more than 200 have diversified into biotechnology. Two hundred additional firms support biotechnology with materials, instruments, equipment, and services. This community of firms involved with biotechnology now provides the United States with the world's strongest and most diverse capability for innovation in this expanding field.

State Investment

Over the last two decades, State governments and local groups have begun to focus their economic development strategies on investment in high technology industries, including biotechnology. One 1986 survey of state activity found that 33 States have allocated funds for biotechnology through centers for excellence, university initiatives, incubator facilities for new firms, or grants for basic and applied research in biotechnology. State biotechnology-related expenditures totaled approximately $110 million in 1987, the last year for which data are available.

REGULATORY ACTIVITY

The Federal Government has the difficult and challenging responsibility of regulating new biotechnology products in a way that avoids unnecessarily time-consuming and complex requirements while ensuring that new products do not threaten public health or the environment. In 1986, the White House Domestic Policy Council's Working Group on Biotechnology began a coordinated Federal effort which laid the groundwork for achieving this delicate balance in the regulation of biotechnology research and product development. The results of this effort and the Administration's proposals in other areas are discussed below.

POLICIES AND INITIATIVES TO SPUR BIOTECHNOLOGICAL ADVANCES

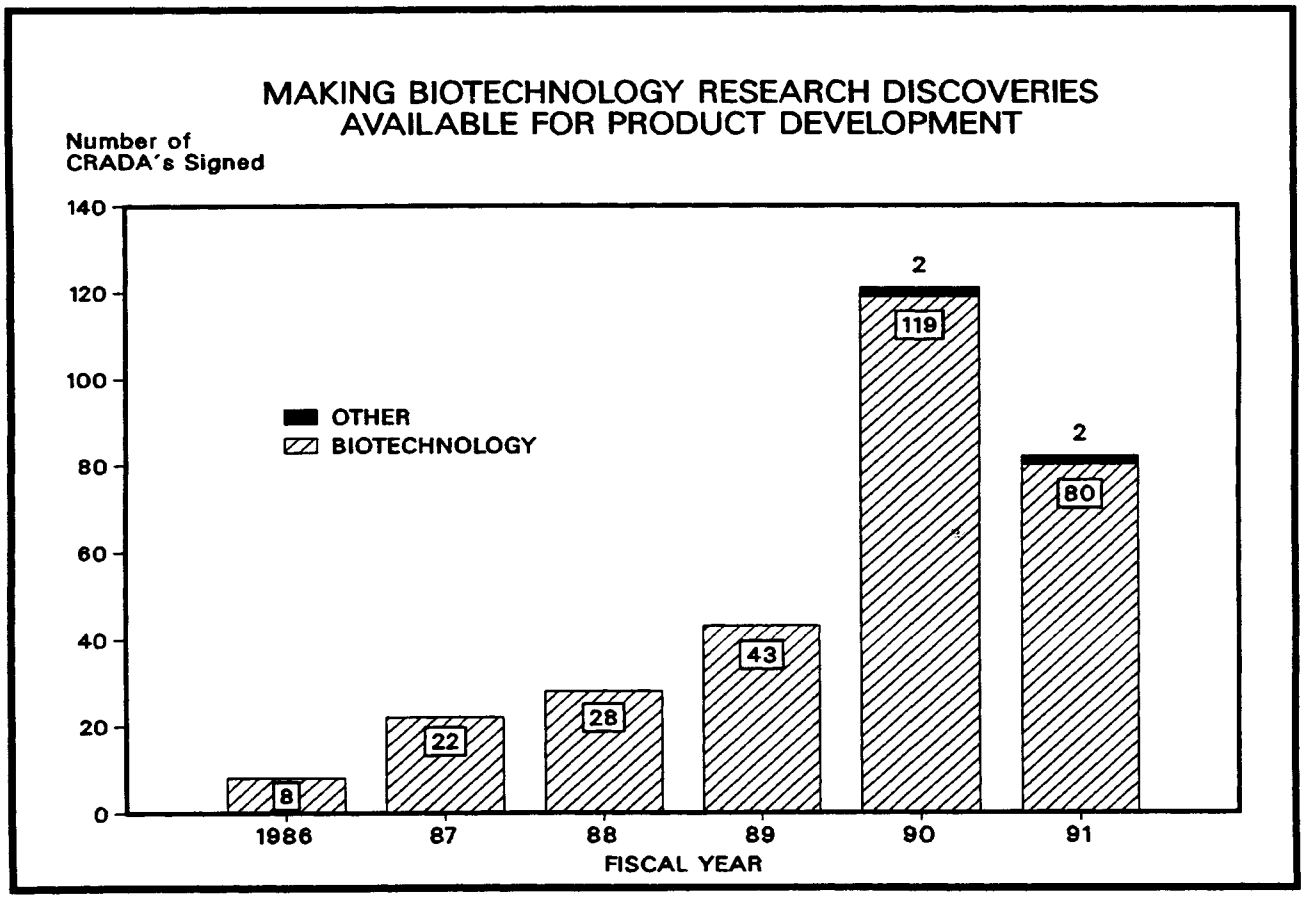
The Administration is pursuing activities on a number of fronts to encourage and accelerate the advancement of biotechnology.

Continuing to Encourage Biotechnology Industry Growth Through Cooperative Research and Development Agreements

Over the last 3 years, scientists at the National Institutes of Health have entered into more than 200 cooperative research and development agreements, or CRADAs, with private industry. The majority of these agreements have involved the development of biotechnology, as the following chart indicates. One measure of the success of CRADAs is the number of patents that have resulted. In 1987, NIH filed 90 patents; in 1989, the Institutes will file more than 200. Equally significant, researchers and companies are entering into these agreements with the purpose of finding solutions to high-priority problems; for example, one NIH researcher is working on a gene therapy for AIDS.

Other Federal agencies, such as the Centers for Disease Control, Food and Drug Administration, and the Alcohol, Drug Abuse and Mental Health Administration, expect to enter into CRADAs in 1991. The following chart

shows the number of CRADAs that have been signed since 1986 and those that the Federal Government expects to sign in 1991. The current rate at which the research community develops CRADAs is expected to level off after each laboratory reaches the number which it can reasonably manage. As the early CRADA's begin to terminate (most CRADA's have a two to three year term), most laboratories will initiate new CRADA's to replace them.



Coordinating Federal Regulatory Activity

In June 1986, the Domestic Policy Council's Working Group on Biotechnology published a Federal Register notice entitled, "Coordinated Framework for Regulation of Biotechnology." This combined agency notice set out the basic policies of the Federal agencies involved with the review of biotechnology research and products. It was an attempt to coordinate the regulatory policies of the Federal Government and ensure that these policies would safeguard against abuses of the new technology without unnecessarily restricting this young industry.

One of the major themes of the Coordinated Framework is that regulation should focus on the characteristics and risks of an organism or product, not the process by which it was produced. In other words, since most scientists agree that the use of genetic-engineering techniques presents no unique hazards, a product should not be regulated more stringently simply because it is genetically-engineered. This principle has been reinforced by a number of national and international groups over the last few years, including the National Academy of Sciences and the Office of Technology Assessment.

In addition, each agency identified the changes in its regulatory processes needed to implement the Coordinated Framework. The Food and Drug Administration, for example, found that no new procedures for genetically-engineered products were required. On the

other hand, USDA has developed a new rule to review genetically-engineered organisms and products that could pose high risks as plant pests. And the Environmental Protection Agency is also developing new regulations to tailor its rules and review procedures to microorganisms that are likely to pose risks.

This Administration, under the auspices of the Council on Competitiveness, has reaffirmed the 1986 Coordinated Framework and endorsed the continuing role of the Biotechnology Science Coordinating Committee in guiding agency efforts to implement the Framework. In addition, the President's Office of Science and Technology Policy will provide the opportunity for comment by other Federal agencies and by interested parties on key issues of regulatory concern.

Speeding Up Regulatory Review Where Appropriate

The 1991 budget proposes that the Food and Drug Administration (FDA) establish a system of user fees for the review of drugs and medical devices, including products that use techniques developed through biotechnology. By substantially increasing the resources available to the FDA, user fees will enable that agency to speed its review of biotechnology products and, in turn, allow firms to bring their products to the marketplace sooner. A more efficient review process for biotechnology products will better serve both industry and consumers.

Accelerating the Patent Process for Biotechnology

The swift granting of a patent encourages both investment in biotechnology research and the commercialization of related inventions. In 1988, the Patent and Trademark Office (PTO) of the Department of Commerce instituted a thirteen point plan to accelerate the award of biotechnology patents. The 1991 budget includes additional resources to expand these efforts. The plan includes hiring 100 new biotechnology patent examiners over five years, consolidating all biotechnology examining responsibilities and improving training for examiners. In addition, the PTO has joined with the biotechnology industry to create the Biotechnology Institute. The Institute will bring additional technical expertise and training resources to the Patent Examining Corps. PTO is on track to meet its goal of reducing the average biotechnology patent processing time to 18 months by 1992, bringing the pendency for these patents in line with overall rates.

UNLOCKING THE SECRETS OF MATTER AND ENERGY: HIGH ENERGY PHYSICS AND THE SUPERCONDUCTING SUPER COLLIDER

HIGH ENERGY PHYSICS

The investigation of elementary particles is a true scientific frontier. As scientists probe further and further into the interior of atoms, they discover new "building blocks" or elementary particles. Today it is known that protons, neutrons, and various other particles are made up of even smaller particles known as quarks. Currently, investigations are underway at laboratories around the world to try to understand the forces between these quarks and to construct theories to explain the numbers and kinds of these quarks, as well as their physical properties.

This research is accomplished using accelerators, machines that speed protons or electrons close to the speed of light and then allow controlled collisions between particles in order to probe the interactions that take place. The higher the energy of the colliding particles, the finer the probe into these particles. Our knowledge of elementary particles has taken giant steps whenever a new accelerator has provided higher energy particles.

Today, experiments in the United States are carried out mostly by university groups working at the Nation's four large accelerator centers; the Stanford Linear Accelerator in California, the Brookhaven National Laboratory on Long Island, the Cornell Electron Storage

Ring accelerator in New York State, and the Fermilab National Laboratory near Chicago.

Much of the work at Stanford involves studies of the force responsible for radioactive decay. The particle that transmits this force is called the Z-nought particle, and the accelerator at Stanford is being used to make detailed measurements of the mass of this particle. At Brookhaven, experiments are being conducted to test the current theories that attempt to explain the numbers and properties of the elementary particles, the so-called Standard Model. At Cornell, experiments are being performed to investigate the properties of the b-quark. At Fermilab, experiments are being performed to try to discover a new type of quark that has been postulated to exist. Today, the machine at Fermilab is the world's most energetic proton accelerator, pushing particles to energies as great as one trillion electron volts (1 TEV). It is expected to hold that distinction until the Superconducting Super Collider becomes operational in the late 1990s.

FUNDING FOR HIGH ENERGY PHYSICS AND THE SUPERCONDUCTING SUPER COLLIDER IS INCREASED BY 15 PERCENT

(Dollar amounts in millions)

	Budget Authority			
	1990 enacted	1991 proposed	Dollar change	Percent change
Superconducting Super Collider	218	318	+100	+46
High energy physics [1]	921	997	+76	+8
Total	1,139	1,315	+176	+15

[1] Includes the General Science programs of the Department of Energy and the Elementary Particle Physics program of the National Science Foundation.

THE SUPERCONDUCTING SUPER COLLIDER

The Superconducting Super Collider (SSC) will accelerate counter-rotating beams of protons to an energy 20 times greater than that of the machine at Fermilab and then cause these beams to collide head-on. At such energies, scientists believe that they can explore aspects of matter that are unreachable using any existing facility. The SSC holds the potential for new breakthroughs in science, technology and education.

The dominant feature of the SSC will be two rings of superconducting magnets in a tunnel 53 miles in circumference. By comparison, the largest existing U.S. circular accelerator (Fermilab) is 4 miles in circumference. Around this tunnel there will be 6 areas for researchers to conduct experiments on the colliding beams. The SSC will employ 2500 scientists, engineers and technicians, and host an additional 500 visiting scientists from all over the world.

The 1991 budget provides $318 million for the SSC, an increase of $100 million over the 1990 level. The budget strongly supports work to complete the design, development and testing of the magnets that will propel the proton beams around the tunnel. R&D on other SSC technical systems will also continue.

The proposed site for the SSC is in Ellis County, Texas, for which an Environmental Impact Statement will be completed before construction begins. The 1991 budget supports a schedule for the SSC that calls for design and construction within 10 years (by 1998) at an estimated total cost of $5.9 billion. These estimates are based on a 1986 conceptual design report and are currently under review as the development of a site-specific conceptual design proceeds.

In addition to the Federal support for the SSC, contributions from non-Federal sources are expected to fund one-third of the costs, or about $1.8 billion. The State of Texas will contribute up to $1 billion for the construction of on-site facilities and other SSC systems. Plans for seeking cost-sharing agreements for foreign contributions are also under development by the Department of Energy.

The history of science shows that many major advances in fundamental understanding of natural processes have led to technologies, products and processes that ultimately improve the quality of life for our citizens and enhance the economic competitiveness of the nation. The SSC is a critical part of the Administration's initiative to strengthen America's position as a world leader in science and technology. It will be the symbol of the nation's commitment to scientific leadership in this century and the next, and the concrete manifestation of that leadership.

III.C. ENHANCING RESEARCH AND DEVELOPMENT

RESEARCH AND DEVELOPMENT: AN INVESTMENT IN THE FUTURE

Research and development (R&D) yields new knowledge, products and processes that, over the long term, result in economic growth and improved quality of life for all Americans. Investment in research and development is a top priority for an Administration that believes in investing in the future. It is the key to enhancing American competitiveness, improving our quality of life, and laying the groundwork for building a better tomorrow.

The budget proposes to allocate about $71 billion in budget authority for research and development, including R&D facilities, in 1991. This is an increase of $4.5 billion, or 7 percent over 1990 enacted levels. Civilian R&D will increase by 12 percent while defense-related R&D will increase by 4 percent. Within this total, $12 billion will be allocated for basic research, an increase of $1 billion or about 8 percent over 1990.

The 1991 budget contains a number of new and expanded programs and initiatives that will contribute greatly to the Nation's R&D enterprise. Examples include:

- ***Doubling of the National Science Foundation budget.***—An increase of over 14 percent which will continue progress toward doubling the NSF budget by 1993.
- ***Global Change.***—An increase of 57 percent for the U.S. Global Change Research Program (USGCRP), to a total of over $1 billion. This program places the United States in a world leadership role in climate change research. A major portion of this increase will be used to initiate the Earth Observing System, a series of instruments on space platforms to be developed by the U.S., Europe and Japan over several decades.
- ***Agricultural Research Initiative.***—The budget proposes the first step of a new program in agricultural research, designed to enhance production efficiency, food safety and environmental quality.
- ***Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome.***—An overall increase of 18 percent in all aspects of the Federal response to HIV/AIDS: research, prevention, treatment, and income support.
- ***Moon-Mars Exploration.***—A major new effort of $1.3 billion to develop the enabling technologies and begin the robotic science missions needed to carry out the President's goal of manned exploration of space beyond Earth orbit. This effort is the first step toward a manned lunar base and a manned mission to Mars.
- ***Space Station Freedom.***—A 36 percent increase for the development of Space Station Freedom to a total of $2.6 billion. This increase will provide for the critical transition from design to the initial fabrication of long-lead hardware elements.
- ***Superconducting Super Collider (SSC).***—An increase of $100 million (or 46 percent) for the SSC to a total of $318 million. This will support continued work to complete the design of the prototype magnets, and transition from prototype to production. The funding level maintains the 10-year design and construction schedule.

ENHANCING RESEARCH AND DEVELOPMENT

(Dollar amounts in millions)

	Budget Authority				Outlays			
	1990 Enacted	1991 Proposed	Dollar change	Percent change	1990 Enacted	1991 Proposed	Dollar change	Percent change
Major initiatives: [1]								
Doubling the NSF budget	2,084	2,383	+299	+14	1,959	2,213	+254	+13
Global Change	659	1,034	+375	+57	595	853	+258	+43
Agricultural Research Initiative	43	100	+57	+133	36	46	+10	+28
HIV/AIDS	2,932	3,463	+531	+18	2,454	3,203	+749	+31
Moon/Mars Exploration	859	1,267	+408	+47	767	1,037	+270	+35
Space Station Freedom	1,928	2,627	+699	+36	1,434	2,198	+764	+53
Magnetic Levitation Transportation	2	10	+8	+400	2	7	+5	+306
Superconducting Super Collider	218	318	+100	+46	188	293	+105	+56
Advanced Technology: Robotics	150	192	+42	+28	126	166	+41	+32
Science and Engineering Education	839	1,061	+222	+26	723	871	+148	+20
Government-wide totals:								
Conduct of R&D:								
Basic Research	11,398	12,366	+968	+8	10,961	11,886	+925	+8
Civilian	10,459	11,372	+913	+9	10,016	10,911	+895	+9
Defense [2]	939	994	+55	+6	945	975	+30	+3
Applied Research and Development	52,313	55,773	+3,461	+7	51,124	53,745	+2,622	+5
Civilian	13,375	15,346	+1,971	+15	12,321	14,449	+2,129	+17
Defense [2]	38,938	40,427	+1,490	+4	38,803	39,296	+493	+1
Subtotal, Conduct of R&D	63,711	68,140	+4,429	+7	62,085	65,632	+3,547	+6
R&D Facilities	3,023	3,059	+36	+1	2,590	2,738	+149	+6
Total [3]	66,734	71,199	+4,465	+7	64,674	68,370	+3,695	+6

[1] Major initiatives include funds for research and development which also are included in the Government-wide totals for R&D as well as funds from other non-R&D programs.
[2] Includes military-related programs of the Departments of Defense and Energy.
[3] Components may not add to totals because of rounding.

- ***R&D for Advanced Technology.***—An increase of 28 percent for robotics R&D, and continued support for R&D on high-performance computing, semiconductors, superconductivity and advanced imaging.
- ***Science and Engineering Education.***—The Administration is committed to improving the quality of science and engineering education. The budget will propose over $1 billion for science and engineering education activities in five agencies.
- ***Magnetic Levitation Transportation.***—An increase of nearly 400 percent in funding to $10 million to explore the possibility of stepped-up U.S. efforts in this emerging technology.
- ***Intellectual Property.***—The Administration will aggressively pursue improved international protection of intellectual property. The current negotiations in the Uruguay Round of the General Agreements on Tariffs and Trade are an important forum for this activity.
- ***R&E Tax Credit.***—The Administration will propose to make the Research and Experimentation Tax Credit permanent.
- ***Encouraging R&D by Transnational Companies.***—The Administration will propose to make permanent the rules for allocation by transnational companies of R&D

expenditures and will propose changes in those rules.

- ***New Product Liability.***—The Administration has endorsed changes in product liability laws to help to restore balance to the tort system, to increase competitiveness, and to reduce uncertainty—particularly for new products—while providing incentives to produce safe products.

THE NEED FOR INCREASED NATIONAL INVESTMENT IN RESEARCH AND DEVELOPMENT

Considerable evidence exists that further increases in national R&D investment will enhance our productivity and brighten our future.

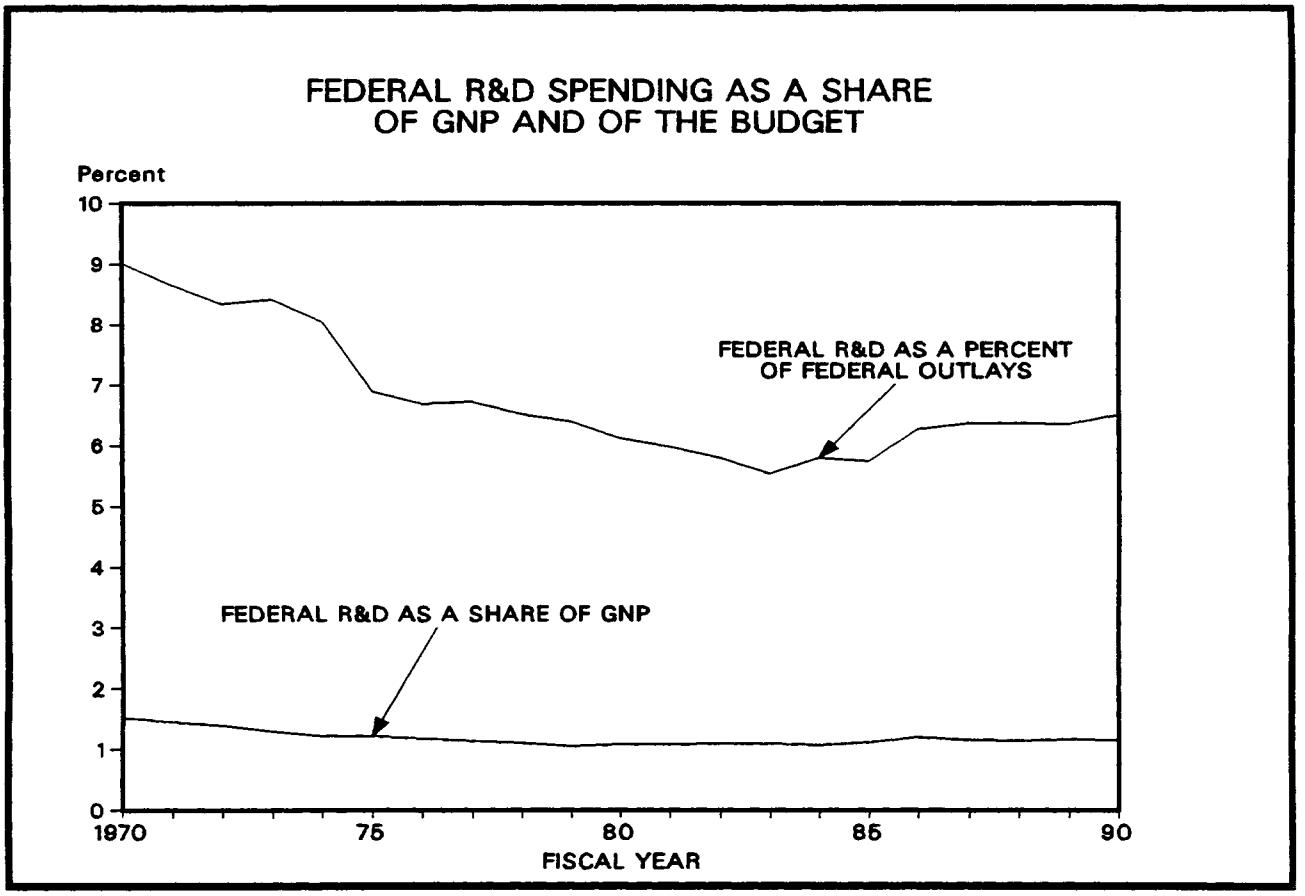
The contribution of R&D investment to increased productivity is discussed in Part III-A. But historical comparisons indicate that, despite a positive rate of return on R&D investments, such investments have declined as a share of the budget.

While it is not possible to determine analytically the "optimal" total national investment level for R&D, or the best mix of R&D investments, the factors discussed in the following sections provide a strong justification for greater investment in R&D and form the basis for the initiatives proposed in the 1991 budget.

REVERSING THE DECLINING SHARE OF R&D EXPENDITURES IN THE BUDGET

While total Federal R&D expenditures have remained roughly constant over the last 20 years as a share of GNP, their share of the overall Federal budget has been greatly reduced. This decline in the relative budget share is due, in part, to the rapid growth of entitlements and other mandatory spending, which finance consumption.

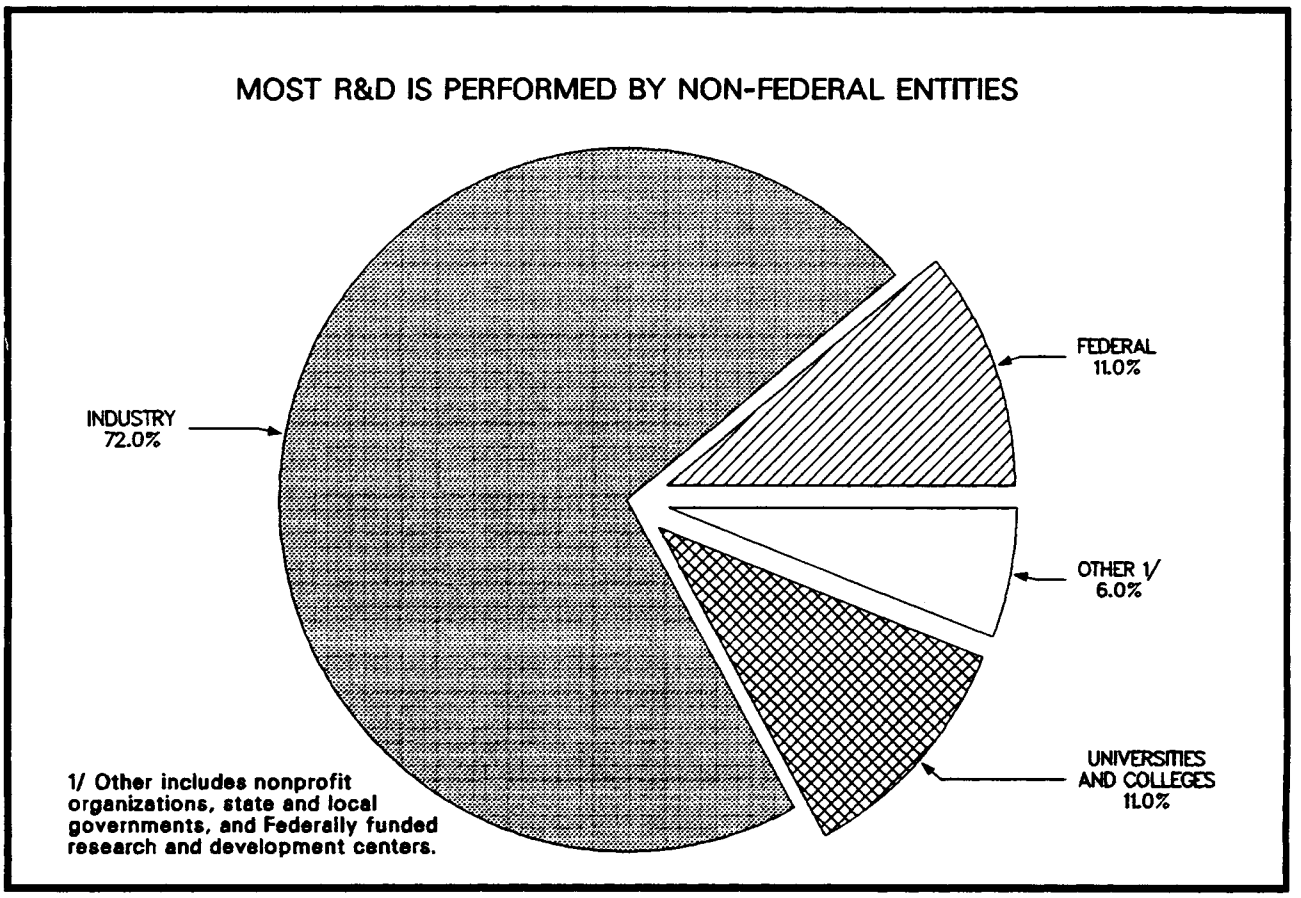
The chart below illustrates the historical trends in Federal R&D expenditures relative to GNP and total on-budget Federal outlays. As a share of GNP, total real Federal R&D expenditures have risen since 1980 after declining slightly during the 1970s. As a share of Federal spending, however, R&D expenditures have fallen from 9 percent in 1970 to 6.7 percent in 1990. The 1991 budget will help to reverse this decline.



THE IMPORTANCE OF PRIVATE SECTOR R&D

Federal spending constitutes about 50 percent of the total national investment in R&D. The Federal Government, however, is not the principal *performer* of R&D in America. The chart below shows that almost 90 percent of total national R&D is performed by private industry, universities, and other entities.

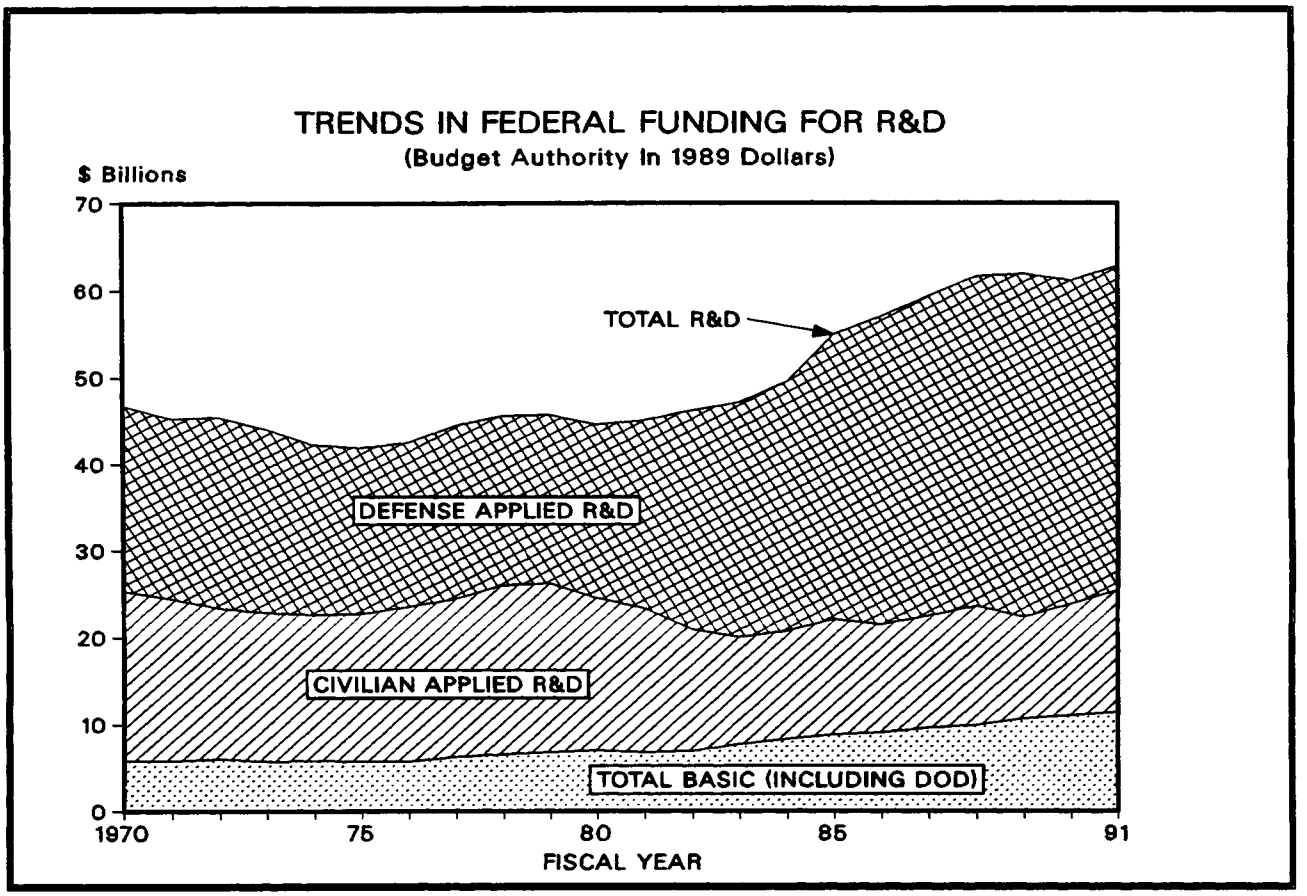
Therefore, any successful R&D policy must seek to stimulate and encourage greater R&D investment by these non-Federal entities. The 1991 budget contains proposals designed to do this.



TREND IN FEDERAL INVESTMENTS IN R&D

The 1991 budget provides a relatively larger increase for civilian R&D (12 percent) than for defense-related R&D (4 percent). The chart below shows the historical trend in basic research, civilian applied research and development and Defense applied research and development. As the chart below shows, civilian applied R&D declined sharply from the late 1970s through the early 1980s.

Defense applied research and development, particularly systems development, increased significantly in the 1980s, consistent with the overall investment in national security. The relatively larger increases in civilian R&D proposed in this budget will increase its share of total Federal R&D to over 39 percent in 1991 (from about 34 percent in 1989).



INCREASING ECONOMIC GROWTH AND IMPROVING OUR QUALITY OF LIFE

R&D investment provides both direct and indirect productivity benefits to society. Many economic studies suggest that private (industrial) R&D spending has a very high social rate of return; that is, benefit to the society as a whole. This social return appears to be much higher than the rate of return to the individual company funding the R&D, giving R&D spending the character of what economists call a "public good." For example, one researcher estimated that private R&D investment yielded a social rate of return of 56 percent, and a private rate of return of 25 percent for a specific group of innovations. Other studies have indicated that academic research yields a social rate of return of about 30 percent. This differential between social rates of return and capturable private rates of return is especially great for basic research or pre-competitive, generic applied research that contributes to many sectors. Therefore, increased Federal investment in R&D is warranted to capture this public good feature.

THE FEDERAL ROLE IN SUPPORTING R&D

Traditionally, the Federal Government has supported R&D in two areas, first, to meet its own direct needs—where it is the principal user (e.g., defense-related R&D)—and, second, to meet broader national needs (e.g., basic research in all areas, measurements and standards R&D, health-related R&D). In instances where the Federal Government is the ultimate market for the R&D results, R&D funding decisions must be made on the basis of Government needs and requirements. Thus, funding levels for defense R&D and civil space R&D activities are determined in the context of their respective national security and civil space objectives and requirements. The actual R&D activities, however, should be managed in such a way as to encourage commercial applications of the R&D as well. The second catego-

ry of R&D, for which the Government is not the principal market, includes both basic research and generic applied research. Federal investment in such R&D is warranted to capture the public good benefit. The Administration believes that Federal support for this type of R&D should be based on several fundamental criteria:

- there should be "externalities" associated with the R&D (e.g., pollution clean-up, basic research);
- there should be benefits to broad segments of the economy simultaneously (e.g., health research, agricultural research); and
- the private sector is without sufficient incentives to capture enough of the benefits to make such R&D investments worthwhile. In such cases there should be private support (e.g., joint ventures or cost-sharing) commensurate with the expected benefits to the private parties.

SUPPORTING BASIC RESEARCH

Basic research is the wellspring of fundamental knowledge that can eventually lead to new products and processes. Support for basic research, especially at universities, is an essential investment in the Nation's scientific and technological future, including its future scientists and engineers. The level and trend of basic research support has traditionally been used as an indicator for the health and vitality of the Nation's overall commitment to new research opportunities of the future. In 1991, the budget proposes to allocate $12 billion for the conduct of basic research, an increase of about $1 billion or 8 percent above the 1990 enacted level as shown in the table below. This level continues to reflect the strong emphasis that the Administration places on increased support for basic research across all fields of science and engineering.

INCREASING FUNDING FOR BASIC RESEARCH [1]

(Dollar amounts in millions)

Department or Agency	Budget Authority				Outlays			
	1990 Enacted	1991 Proposed	Dollar change	Percent change	1990 Enacted	1991 Proposed	Dollar change	Percent change
Health and Human Services	4,714	4,993	+279	+6	4,483	4,763	+280	+6
National Science Foundation	1,651	1,853	+202	+12	1,632	1,820	+188	+12
Energy	1,512	1,658	+146	+10	1,499	1,676	+177	+12
National Aeronautics and Space Administration	1,596	1,823	+226	+14	1,445	1,640	+194	+13
Defense-military	924	978	+54	+6	929	959	+30	+3
Agriculture	511	553	+42	+8	503	525	+22	+4
Other Agencies [2]	489	508	+19	+4	470	504	+34	+7
Total	11,398	12,366	+968	+8	10,961	11,886	+925	+8

[1] Amounts reported in this table are included in totals for conduct of R&D.
[2] Includes the Departments of Interior, Commerce, Veterans Affairs, Education, Labor, the Treasury, Justice, Transportation, the Smithsonian Institution, Environmental Protection Agency, Tennessee Valley Authority, and the Corps of Engineers.

DOUBLING THE NATIONAL SCIENCE FOUNDATION BUDGET

As an indicator of his support for basic research, the President is committed to doubling the budget of the National Science Foundation (NSF) by 1993. Over 90 percent of NSF's budget supports basic research primarily at universities and colleges. These funds go directly to America's best researchers and to the most talented young scientists and engineers.

NSF also supports:

- Innovative programs designed to improve the quality of the Nation's science, mathematics and engineering education.
- A program to modernize academic research facilities.
- The U.S. presence on the Antarctic continent through the U.S. Antarctic Program.

DOUBLING THE NSF BUDGET [1]

(In millions of dollars)

	1990 Enacted	Proposed				
		1991	1992	1993	1994	1995
Budget authority	2,084	2,383	2,673	2,998	3,350	3,447
Outlays	1,959	2,213	2,532	2,789	3,121	3,352

[1] Base year for NSF doubling is 1987.

The 1990 enacted funding level for NSF provided an increase of 11 percent over 1989, less than the 14 percent increase proposed in the February 9th "Building a Better America."

The 1991 budget proposes an increase of over 14 percent, which would restore the doubling path for NSF.

UNDERSTANDING THE GLOBAL ENVIRONMENT

Advancing U.S. Leadership in Global Change Research

The United States and other nations of the world are becoming increasingly concerned about global environmental issues, particularly global climate change. This concern has been sparked by the belief that human activities may be contributing to global-scale environmental impacts. The Administration believes that continued U.S. leadership is essential in furthering world understanding of global change issues and is committed to providing that leadership. The U.S. took a major step in 1989 with the establishment of the U.S. Global Change Research Program (USGCRP). The 1991 budget provides a major expansion of this unprecedented interagency research effort. In 1991, funding for global change research will total $1,034 million, an increase of 57 percent over the 1990 level.

The Administration believes that response strategies for addressing global change should be based on the best possible scientific information, and accordingly will host a conference of top scientific, economic, and environmental officials from around the world on this subject in the Spring of 1990. There are significant scientific uncertainties associated with many of the Earth processes involved in global change. An improvement in scientific understanding and predictive capability is important to the development of sound and cost-effective policy decisions.

The USGCRP, developed by the OSTP interagency Committee on Earth Sciences, is a comprehensive research effort that includes applied as well as basic research; is very broad in scope (includes research on all Earth components such as oceans and atmosphere); and focuses on changes (e.g., global warming, ozone depletion, drought) that occur on timescales of decades to centuries. Our knowledge and technology (e.g., satellites, computers) have reached the point where this type of global study is possible. The USGCRP goals, objectives, science elements, and science priorities were developed in collaboration with the National Academy of Sciences and other related international science organizations.

U.S. GLOBAL CHANGE RESEARCH PROGRAM

(Dollar amounts in millions)

Department or Agency	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
National Aeronautics and Space Administration	489	661	+172	+35
National Science Foundation	55	103	+48	+87
Energy	50	66	+16	+32
Agriculture	21	47	+26	+124
Commerce (NOAA)	18	87	+69	+383
Interior	13	44	+31	+238
Environmental Protection Agency	13	26	+13	+100
Total	659	1,034	+375	+57

NASA's Mission to Planet Earth program represents the principal space-based component of the USGCRP and includes several ongoing satellite and research programs and three new initiatives: the Earth Observing System (EOS), Earthprobes, and Attached Payloads on Space Station Freedom. The 1991 budget provides for launch of the first U.S. EOS platform in 1998. Additional platforms will be provided by the Europeans and the Japanese. In order to begin gathering data and making observations as soon as possible, the budget also provides for the launch of Earthprobes beginning in 1993. Prior to beginning the full-scale development of EOS, the National Academy of Sciences will undertake an independent review of the program as part of its overall review of the USGCRP. The results will be reviewed by the National Space Council.

The other six agencies constitute the earth-based component of the USGCRP. Many of the ground-based process studies and field campaigns supported by these agencies are dependent on the data collected by EOS or provide ground-based data needed to calibrate the space data. Nearly all of these efforts have some element of international coordination, represent a broad spectrum of research activities, and can provide near-term incremental improvements to climate modeling prior to the development of global data from space.

Understanding the Arctic

U.S. policy in the Arctic consists of four elements: protection of essential security interests; support for sound, rational development of the region; promotion of scientific research contributing to knowledge about the Arctic; and promotion of mutually beneficial international cooperation in the Arctic. Federal Arctic research is guided by a 5-year research plan developed by the Interagency Arctic Research Policy Committee (IARPC) (in consultation with the Presidentially-appointed Arctic Research Commission and other interested groups).

The 1991 budget includes $114 million for Arctic research, an increase of about $8 million over the 1990 level. Within the total for 1991, five agencies, NSF, NASA, NOAA, Interior, and DOD/Navy will undertake a special coordinated initiative to understand the dynamics of the Arctic oceans, including circulation, ecosystems, and seasonal sea ice. This initiative will constitute about $44 million of the total for arctic research, an increase of about 15 percent over 1990. The table below shows the Federal support for Arctic research by the three major elements.

UNDERSTANDING THE ARCTIC

(Dollar amounts in millions)

Category	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
Rational development [1]	36	43	+6	+17
Arctic as laboratory [2]	46	47	+1	+2
National security [3]	23	24	+1	+4
Total	106	114	+8	+8

Note: The 1990 budget includes a one-time increase for DOD of about $21 million specifically for upper atmosphere research and associated facilities. For the purpose of comparison with 1991 levels, this funding has been excluded.

[1] Includes the Departments of Interior, Commerce, Energy, Transportation, State, and the Environmental Protection Agency.

[2] Includes the Department of Health and Human Services, the National Aeronautics and Space Administration, the National Science Foundation, and Smithsonian Institution.

[3] Includes the Department of Defense.

PROMOTING ALTERNATE SOURCES OF ENERGY

DOE supports a broad R&D program in areas such as conservation, solar and other renewable energy technologies (photovoltaics, wind, geothermal). These programs are discussed more fully in Part III-F, "Protecting the Environment." The 1991 budget contains increased funding of about 8 percent above 1990, and 80 percent above the Administration's 1990 budget request, for solar, renewable and conservation R&D programs. Of particular interest is an initiative to assist U.S. photovoltaic (PV) manufacturers through a cost-shared R&D program aimed at improving PV process/manufacturing technologies.

For conduct of energy R&D programs in total, the budget proposes total funding of $2,450 million in budget authority, a decrease of $124 million below 1990, and $2,393 million in outlays, $277 million above 1990. Both changes occur primarily in the Clean Coal Technology Program, where a large number of new technology demonstration projects funded in prior years move into the construction phase. Overall, the budget provides for continued R&D support across a broad spectrum of programs in nuclear fission, nuclear fusion, fossil energy, and supporting energy sciences. The budget also includes a $17 million new initiative to support enhanced oil and gas recovery research in university/industry geosciences consortia.

ENHANCING THE PRODUCTIVITY OF THE NATION'S AGRICULTURE

The budget proposes the first step of a major new program in the Department of Agriculture (USDA), the National Research Initiative (NRI), which will revitalize and strengthen agricultural research. Under the NRI, awards for research grants will be made in response to proposals selected for relevance and quality on a merit-reviewed, competitive basis, thereby assuring that the best science is supported. Grants will be available to pursue investigations in plant science, animal science, human nutrition, and natural resources. In 1991, as the basis for the NRI, the size of the existing USDA competitive grants program will be doubled, to a total of $100 million. This research commitment will be expanded by $50 million each year to the extent that funds are awarded competitively and not earmarked for special interest purposes.

In addition to the National Research Initiative, USDA supports over $1 billion in R&D related to agriculture and forestry to ensure the continued high productivity of U.S. agricultural and forest lands.

USDA NATIONAL RESEARCH INITIATIVE

(In millions of dollars)

	1990 Enacted	Proposed				
		1991	1992	1993	1994	1995
Budget authority	43	100	150	200	250	300
Outlays	36	46	70	108	160	210

PROTECTING THE PUBLIC HEALTH THROUGH BIOMEDICAL RESEARCH

Biomedical research increases knowledge about the processes underlying health, disability and disease, and synthesizes this knowledge into a useful form so that it can be applied to improve health. Such advances can not only improve the quality of health care but ultimately help to reduce its costs. Examples include drug treatment instead of surgery for coronary artery disease and advanced laser treatment for serious eye disease. Advances in biomedical research are occurring at an unprecedented pace. The 1991 budget ensures that the Federal investment continues to foster these advances by proposing an increase of almost 6 percent for basic research in the Department of Health and Human Services (HHS).

The proposed increase for HHS, including that for the National Institutes of Health, will allow us to advance the state of knowledge and improve treatment of high-incidence diseases. This research lays the foundation for the development of effective prevention and treatment of such diseases. The Federal Government also uses its resources to investigate diseases that afflict relatively smaller numbers of individuals and encourages the private sector to develop treatments for these diseases.

To ensure that this Federal research investment can be used to take advantage of important emerging research opportunities, the budget proposes to give the NIH Director the discretion to direct up to 1 percent of NIH appropriations to such emerging activities.

Additionally, the budget proposes to establish 10 endowed chairs to support, through private donations, 5-year appointments of distinguished non-Federal scientists at NIH. This will enrich and strengthen research at NIH.

Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS)

The budget continues the Administration's commitment to research on the Human Immunodeficiency Virus (HIV), the source of the infection that causes Acquired Immune Deficiency Syndrome or AIDS.

In total, the 1991 budget proposes an 18 percent increase ($531 million) over 1990 for all Federal HIV/AIDS programs, including a 7 percent increase in research, a 16 percent increase in prevention efforts, a 27 percent increase in treatment, and a 39 percent increase in income support for individuals.

THE 1991 BUDGET PROPOSES AN 18 PERCENT INCREASE IN FEDERAL FUNDING FOR HIV AND AIDS [1]

(Dollar amounts in millions)

	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
HIV/AIDS Research	1,162	1,245	+83	+7
HIV/AIDS Treatment	1,063	1,346	+283	+27
HIV/AIDS Prevention	487	567	+80	+16
HIV/AIDS Income support	219	305	+86	+39
Total [2]	2,932	3,463	+531	+18

[1] Funds are for programs in the Departments of Health and Human Services, Defense, Veterans Affairs, Education, Justice, State, Labor and independent agencies. Total also includes obligations for the Social Security Administration.

[2] In addition to the spending identified above, the budget includes other initiatives, most notably those dealing with drugs and infant mortality, that contribute to the Administration's effort against HIV and AIDS.

The budget proposal for research would enable the Federal Government to make continued progress against HIV and AIDS. To date, five therapies for AIDS and AIDS-related infections have been approved for use, and many more are now being tested and evaluated in clinical trials. Over 35 clinical trials have been initiated since January 1989 in a search for additional therapeutic drugs. Federally supported research efforts will continue to further our understanding of how HIV affects the body, to develop effective means to disrupt its progress, and to develop vaccines to prevent this infectious disease.

Research is key to the fight against AIDS, but it is only one component in the Federal effort to combat this dreaded disease. Significant resources in the budget would also be provided for AIDS treatment and prevention and for the income support of those afflicted with HIV and AIDS. In total, the 1991 budget provides $1,346 million for HIV/AIDS treatment, a $283 million or 27 percent increase over the 1990 enacted level. The largest single component in this increase is Federal spending for Medicaid, which would rise by 30 percent over the projected 1990 level.

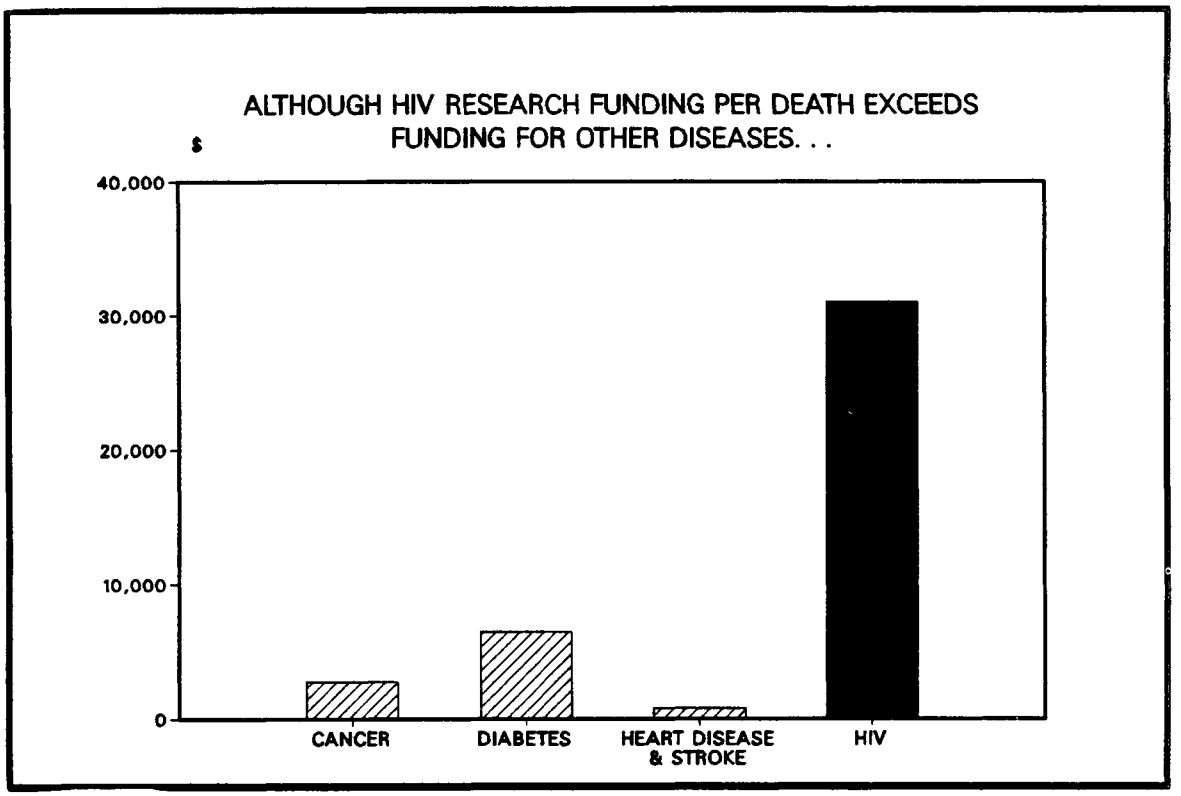
All 50 States now provide Medicaid coverage for the drug AZT for treatment of people suffering from AIDS. AZT coverage is expected to expand as the States take advantage of recent Administration action enabling them to cover AZT treatment for HIV-infected individuals who do not yet exhibit any AIDS symptoms.

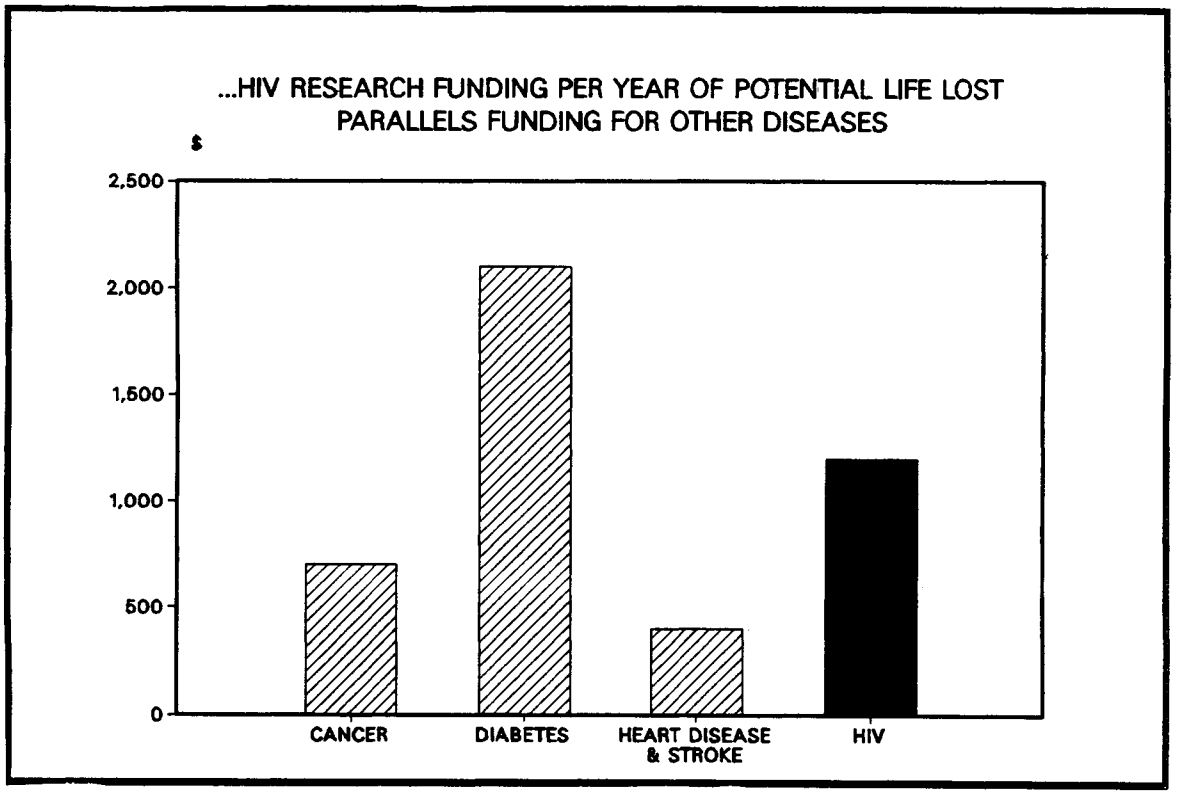
Several States are using Medicaid Home and Community Based Waivers to provide special services to AIDS patients, such as case management and home health care. These innovative practices help patients remain in their own homes and receive care that is both focused on their special needs and is cost effective. Another waiver option being implemented provides special support to young children who are HIV-infected at birth or who develop AIDS after birth. Pursuit of these treatment options helps meet the needs identified in the report of the National Commission on AIDS.

Some have argued that a disproportionate share of health-related research dollars are being devoted to HIV/AIDS. It is true that spending per death from HIV/AIDS, to the extent that this is a relevant indicator, is high compared to that for heart disease, cancer and stroke, the three leading causes of death in the country. HIV, however, often strikes down its victims relatively early in life. More than 45 percent of AIDS victims are younger than 35, and a growing number are children. As a result, research spending per year of potential life lost for HIV and the three killer diseases

is more comparable than that for spending per death, as shown in the following charts. The charts also show that HIV spending per year of potential life lost is lower than that for diabetes, a disease that is a major contributor to disability as well as the Nation's sixth leading cause of death.

Deaths and years of potential life lost attributable to the three major killers and diabetes are projected to grow, individually and collectively, by less than 10 percent over the 5 years between 1989 and 1993. For HIV, in contrast, deaths and years of potential life lost will soar, rising by 150 to 350 percent, depending on the forecast used. Given these projections and the small past investment in HIV research relative to research on other diseases, the Administration believes that the priority given to HIV/AIDS research in the budget is warranted.





Estimates are for 1989. Years of potential life lost calculated to age 65 based on deaths caused by each disease.

ADVANCING THE FRONTIER OF SPACE

The budget proposes $15.2 billion for NASA, of which $8.4 billion funds civil space R&D, an increase of 32 percent over the 1990 levels. The overall space activities of the Federal Government are covered in more detail in Part III-B, "Expanding the Human Frontier."

LAYING THE GROUNDWORK FOR MANNED EXPLORATION OF THE MOON AND MARS

The 1991 budget includes $1.3 billion for a number of programs in NASA, some carried out jointly with DOD and DOE, that support the President's call for manned exploration beyond Earth's orbit. Included in this total are increases for several current technology development programs that will enhance our ability to pursue this mission—space power, the Advanced Launch System, and the National Aerospace Plane. The budget also provides for the initiation of robotic science missions. The proposed increase of $408 million includes a major new initiative to start the development of the technologies needed to implement future manned missions to the Moon and Mars.

LAYING THE GROUNDWORK FOR MANNED EXPLORATION OF THE MOON AND MARS

(Dollar amounts in millions)

	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
Total	859	1,267	+408	+47

BUILDING SPACE STATION FREEDOM

The 1991 budget proposes $2.6 billion to continue the development of Space Station Freedom for launch in 1995. The Space Station is vital to our understanding of microgravity environments, the ability of humans to live and work in space for long periods of time, and to the conduct of science and complex operations in space; Freedom will also provide a key stepping stone for further manned exploration. The Space Station also represents an important opportunity for international cooperation on a large-scale R&D project.

BUILDING SPACE STATION FREEDOM

(Dollar amounts in millions)

Category	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
Research and development	1,750	2,431	+681	+39
Facilities and program management	178	196	+18	+10
Total	1,928	2,627	+699	+36

In addition, the 1991 budget proposes $3.3 billion for space science, an increase of 22 percent to continue support for Earth observations, and for major flight projects such as the Global Geospace Science mission, the Advanced X-ray Astrophysics Facility, the Galileo mission to Jupiter, Magellan mission to Venus, Hubble Space Telescope and Gamma Ray Observatory.

Finally, the budget proposes $101 million for programs to promote the commercial use of space, including the Centers for the Commercial Development of Space (CCDSs). The budget also includes a new initiative through the CCDSs to expand the flight opportunities for experiments in microgravity, life sciences and other areas with long-term commercial potential.

DEVELOPING TECHNOLOGIES FOR IMPROVED TRANSPORTATION

For 1991, the budget proposes funding for transportation R&D of $1,527 million, an increase of 18 percent over 1990. The table below shows the funding of R&D for civil departments and agencies with major responsibilities in transportation, including NASA in aeronautics; the Department of Transportation (DOT) in highways, mass transit, railroads, maritime, aviation, and other transportation areas; and the Corps of Engineers in water transportation. The 1991 budget continues support for NASA's aeronautics research programs, including an initiative begun in 1990 to investigate the environmental barriers to advanced supersonic flight. The budget also continues current DOT programs with special emphasis on the development of an advanced highway driving simulator and intelligent vehicle/highway systems, and improvements in the area of oil pollution response and cleanup, which will incorporate lessons learned from the recent oil spill in Prince William Sound, Alaska. In addition, DOT and the Corps of Engineers are involved in a federal cross-cutting R&D effort in magnetic levitation transportation.

DEVELOPING TECHNOLOGIES FOR IMPROVED TRANSPORTATION

(Dollar amounts in millions)

Department or agency	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
National Aeronautics and Space Administration	929	1,057	+128	+14
Transportation	336	422	+86	+26
Corps of Engineers	35	49	+14	+40
Total	1,299	1,527	+228	+18
Federal agency cross-cutting effort in magnetic levitation transportation	2	10	+8	+400

MAGNETIC LEVITATION TRANSPORTATION

Magnetic levitation (maglev) is a new tranportation technology that relies on the use of magnets for propulsion and levitation rather than conventional steel-wheel-on-rail technology. The 1991 budget proposes $9.7 million for maglev R&D, an increase of almost 400 percent. Of this total, $6.2 million is for the De-

partment of Transportation (DOT) and $3.5 million is for the Army Corps of Engineers. Both agencies are pursuing a cooperative public-private partnership in a plan designed to facilitate private development of an operational maglev system in the United States. The emphasis in DOT's plan is to examine the economic feasibility of maglev projects and to establish safety and operating criteria. The Corps's plan emphasizes the development of U.S. maglev technologies and associated sciences and industries.

This increase in funding is intended to explore the possibility of stepped-up U.S. efforts in this important emerging technology. The focus of the expanded program will be to determine the role of magnetic levitation transportation in the U.S. transportation system, the economic feasibility, the appropriate safety and operating standards, and the remaining technologies that must be developed to achieve an efficient and environmentally acceptable U.S. system.

PROCEEDING WITH THE SUPERCONDUCTING SUPER COLLIDER

The 1991 budget requests $318 million for the Superconducting Super Collider, an increase of $100 million over 1990. This level will support continued work to complete the design of the prototype magnets and begin the transition from prototype to production. The funding level maintains the 10-year design and construction schedule. This project is discussed more fully in Part III-B "Expanding the Human Frontier."

DEVELOPING ADVANCED TECHNOLOGIES TO MEET GOVERNMENT AND CIVILIAN NEEDS

The Federal Government investment in R&D in a number of technology areas will provide benefits to both government and the private sector. This investment is driven largely by agency mission needs. In instances where the benefits are largely commercial, Federal funding supports more generic R&D as opposed to that oriented toward more direct commercial applications. Support for such R&D is an appropriate Federal role where it has a broad national benefit; where it is generic and pre-competitive, thus its benefits cannot be fully or quickly captured by specific companies; and, where there is often a significant level of participation and/or cost-sharing with private sector partners commensurate with the expected benefits. The 1991 budget includes funds for two programs at the Department of Commerce's National Institute of Standards and Technology to encourage the development and transfer to the private sector of a wide-range of advanced technologies. The budget proposes $10 million for the new Advanced Technology Program (ATP) to support a number of consortia doing generic, pre-competitive research into promising technologies. The budget also proposes $5 million for grants to the Regional Manufacturing Technology Centers that will transfer advanced manufacturing technologies to medium and small-sized businesses.

In addition to these broad-based efforts, there are a number of specific advanced technologies that are supported by several agencies. In order to understand better the scope of Federal activities and the level of coordination among agencies, several of these technologies were the subject of a special survey as part of the 1991 budget process. These are described below.

DEVELOPING ADVANCED TECHNOLOGIES [1]

(Dollar amounts in millions)

	Budget Authority [2]			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
Robotics	150	192	+42	+28
High Performance Computing	448	469	+21	+5
Semiconductors	525	537	+12	+2
Advanced Imaging Technologies	118	118	—	—
Superconductivity	228	215	−13	−6

[1] Estimates are based on a one-time survey and exclude classified activities.
[2] Columns should not be totalled due to possible omissions and overlaps in the reporting of data.

Robotics.—The budget provides $192 million, an increase of 28 percent to the six Federal agencies for support of robotics R&D. Robots are intelligent machine systems that do physical work. Current robotic systems work in relatively structured environments or in close contact with human controllers, so the focus of Federal R&D in robotics is on the development of systems that are more autonomous and capable of interacting with changing and uncertain environments. Robots could well lead to improved performance of tasks for which humans are not well suited, such as the handling of hazardous wastes and construction and maintenance activities in extreme environments such as outer space. The application of robotics could also lead to productivity gains, quality improvements, and more flexible manufacturing processes in a range of applications. NASA accounts for over two-thirds of Federal robotics R&D, primarily through the development of Space Station Freedom's Flight Telerobotic Servicer.

High Performance Computing.—The budget provides $469 million for Federal support for R&D focused on high performance computing (HPC). HPC includes the full range of advanced computing technologies as well as the systems and applications software, networking, and underlying research and human resource infrastructure.

In 1989, a plan for advancing HPC was developed by the OSTP Committee on Computer Research and Applications chartered under the Federal Coordinating Council for Science, Engineering, and Technology. The plan assigned primary responsibility for R&D on advanced HPC computing systems to the Defense Advanced Research Projects Agency (DARPA); for advanced software technology and algorithms to NASA; and for the national research network jointly to DARPA and NSF. In addition, all agencies are expected to continue to contribute to the development of human resources.

Semiconductors.—The budget provides $537 million for research on semiconductor materials, development and application of semiconductor materials to meet agency mission needs, and support of R&D on manufacturing processes. Major goals of federal development activity include increasing the speed and throughput of devices (through a combination of the shrinking of components and the use of newer materials such as gallium arsenide instead of silicon), developing devices that work in extreme environments, and developing economically efficient energy conversion devices. The largest single federal program is DOD funding of $100 million per year for SEMATECH, the semiconductor industry R&D consortium in Austin, Texas. Federal support represents about half of the venture's total funding. The consortium focuses on R&D to improve semiconductor manufacturing techniques. In addition, DOE is initiating a cost-shared effort with industry to apply synchrotron light source technology to

the manufacture of next-generation computer microchips.

Superconductivity.—The Federal Government has traditionally supported the basic science that characterizes both high temperature (HTS) and low temperature (LTS) superconducting phenomena. The researchers in the U.S. credited with bringing the HTS materials to worldwide attention were all supported for many years by Federal agencies. At the time of the discovery of the phenomenon of HTS, the government was spending about $55 million annually on all aspects of superconductivity. The 1991 budget provides $215 million in 5 agencies (Defense, NASA, Energy, National Science Foundation and the National Institute of Standards and Technology in Commerce) for superconductivity R&D. In 1991, superconducting magnet development for the Superconducting Super Collider is expected to proceed from R&D into prototype production, resulting in a reduction in DOE's contribution to Government-wide superconductivity research.

Advanced Imaging Technologies.—The budget provides an estimated $118 million for advanced imaging R&D. Advanced electronic imaging systems include interactive graphics, high definition displays, advanced signal processing, and advanced digital switching technologies. There is a wide range of potential end uses (for example, military target sensor imaging, visualization of supercomputer computations, mapping displays) for these technologies. Much of the previous Federal spending has been for DOD R&D related to target sensor imaging technologies. In 1991, the budget will provide $12 million for the High Definition Display Technology (HDDT) Program in DARPA—in support of defense applications.

MAINTAINING NATIONAL SECURITY

R&D for national security provides for the development, testing, and evaluation of weapons systems to meet new military requirements. At the same time, a strong research and technology base allows continued investigation into promising new technologies and guards against technological surprise by potential adversaries. In 1991, R&D to maintain national security will represent about 61 percent of total Federal funding for the conduct of R&D. The table below shows the R&D funding for the Department of Defense and the atomic energy defense programs of the Department of Energy. These programs are discussed in more detail in Part III-I, "Preserving National Security and Advancing America's Interests Abroad."

MAINTAINING NATIONAL SECURITY

(Dollar amounts in millions)

Department	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
Defense-military functions	37,226	38,714	+1,488	+4
Basic research	924	978	+54	+6
Applied research	2,403	2,458	+54	+2
Development	33,899	35,279	+1,380	+4
Energy-atomic energy defense programs	2,651	2,707	+56	+2
Total, Conduct of R&D	39,877	41,421	+1,545	+4

Major DOD R&D efforts will include the Strategic Defense Initiative which will increase to $4.5 billion in 1991, continued development of the Small ICBM, the LHX Helicopter, and the Advanced Tactical Fighter. The DOD technology base (basic and applied re-

search) will be funded at $3.4 billion in 1991. The Department of Energy R&D activities include the research, development and testing of all nuclear weapons. The Department also conducts R&D on nuclear-powered directed energy weapons for the Strategic Defense Initiative, Naval reactor systems, and technology to verify arms control treaties.

STRENGTHENING SCIENCE AND TECHNOLOGY EDUCATION

At a time when the number of American students pursuing advanced science and engineering education is declining, the scientific and engineering (S&E) workforce is becoming more critical to the strength of the overall economy. This is a disturbing trend.

Many jobs created in the future will require people who are well-versed in mathematics and science and who have greater facility with higher order reasoning skills than most high-school and college graduates now have. Between 1976 and 1986, S&E employment grew at an average annual rate of over 6 percent, four times as fast as annual growth in the total U.S. workforce and twice the yearly rate of increase in total professional employment.

The "pipeline" of young people that feeds the S&E workforce may not be adequate in either numbers or quality to provide the workers that will be needed during the next decade and beyond. Between 1980 and 2000, the number of 18–24 year olds will decline by 19 percent while the overall population will increase by 18 percent. Even if the historic average holds, and 5 percent of 18–24 year olds obtain S&E degrees, the resulting shortfall in the S&E workforce could reach into the hundreds of thousands. Moreover, many students with an expressed interest in science and engineering careers leave the pipeline before getting a degree in science and engineering. This is particularly true for underrepresented minorities. Currently Black and Hispanic children constitute 25 percent of our school children; by the year 2000 this percentage will rise to 47 percent. Yet it is these groups that are now the most underrepresented in the S&E workforce: in 1988, only 231 Black and Hispanic Americans earned doctorates in science or engineering fields (excluding psychology or the social sciences). Together, Black and Hispanic Americans constitute 20 percent of the Nation's population but only 4 percent of employed scientists and engineers.

ONLY A SMALL PROPORTION OF STUDENTS RECEIVE SCIENCE AND ENGINEERING (S&E) DEGREES

	S&E Students who are under-represented minorities	Total S&E student population
Total sophomores in 1977	856,000	4,000,000
High school sophomores with S&E interest	86,000	730,000
High school seniors with S&E interest	65,000	590,000
College freshmen, S&E preference	40,000	340,000
College juniors, S&E major	14,000	214,000
S&E B.S. degrees	13,000	206,000
S&E graduate students	2,500	60,000
S&E M.S. degrees	2,000	46,000
S&E Ph.D. degrees	Under 400	10,000

Note: Science and engineering participation reported here excludes psychology and the social sciences.

This situation is compounded by an even more serious factor. The performance of U.S. precollege students in math and science is far below that of students in other major industrialized nations. The quality of education, particularly science, mathematics, and engineering education, must be improved if America is to be competitive in the future.

The Administration is moving aggressively on a number of fronts to address the shortcomings in the Nation's science and technology education enterprise. The 1991 budget provides the concrete manifestation of the Administration's commitment in this area. It should be noted, however, that the responsibility for both the quality and the quantity of the Nation's S&E workforce belongs to every sector, not just, and not primarily, to the Federal Government.

INVESTING IN SCIENCE, MATHEMATICS, AND ENGINEERING EDUCATION

(Dollar amounts in millions)

Department or Agency	Budget Authority			
	1990 Enacted	1991 Proposed	Dollar change	Percent change
National Science Foundation	357	463	+106	+30
Education	136	230	+94	+69
National Aeronautics and Space Administration	42	51	+8	+21
Energy	17	25	+8	+47
National Institutes of Health	287	292	+5	+2
Total	839	1,061	+222	+26

The 1991 budget proposes a total of $1 billion in direct spending in four agencies for science, mathematics, and engineering education, an increase of 26 percent above 1990. The direct spending programs include a variety of measures to support teacher training, curriculum development, and direct assistance to students. In addition, there is a much greater amount of funding for fellowships and other forms of support that is provided indirectly through research grants.

The 1991 budget provides $463 million to the *National Science Foundation* for a range of activities designed to improve education and develop human resources for science and engineering. This is an increase of $106 million or 30 percent over 1990. NSF directly supports high-leverage science, math, and engineering education programs aimed at improving the quality of teaching, the quality of students and the numbers of students entering and staying in the S&E pipeline. Examples include: workshops for teachers, development of innovative educational materials, research experiences for high-school and college students in working research laboratories, and support for innovative programs at many of the Nation's science museums. In addition, NSF supports many programs aimed specifically at recruiting and retaining underrepresented groups.

The *Department of Education* maintains strong relationships with State educational entities and has the ability to reach thousands of students and teachers through its large formula grant programs. The 1991 budget proposes $230 million, an increase of $94 million or 69 percent over 1990, for the Dwight D. Eisenhower Mathematics and Science program, which will be provided to States to develop and im-

plement improved programs for teaching math and science.

The 1991 budget proposes about $51 million for the education activities of the *National Aeronautics and Space Administration*, an increase of about 21 percent over 1990. These activities involve over 1.8 million students and teachers, and include "Spacemobile" presentations to elementary and secondary schools, teacher workshops and internships at NASA research centers around the country, grants for undergraduate and graduate student research, and special efforts to ensure minority participation in science and engineering education.

The 1991 budget provides $25 million, a 47 percent increase, for educational activities in the *Department of Energy*. The Department provides support for over 6,000 undergraduate and graduate students, as well as high school and university faculty through research fellowships. These fellowships provide research support for these individuals at DOE laboratories or other locations. The proposed increase will enable DOE to implement a new program, in collaboration with the private sector, designed to train high school faculty at DOE's national laboratories in state-of-the-art science which the teachers can then bring back to their students.

For the *National Institutes of Health*, the research training grant program will be funded in 1991 at a level of $292 million. This level will support almost 12,000 graduate trainees in research laboratories throughout the nation. Training grants are provided to institutions and are in addition to the many thousands of graduate and post-graduate students supported through research grants to faculty researchers.

In addition to these specialized, targeted activities, the Federal Government itself employs almost 250,000 S&Es, about 8 percent of the total S&E workforce. The Federal Government also provides research support to industry and academia that enables these sectors to employ S&E's in increased numbers. Thus, the Federal Government can have a significant leveraging effect if it supports programs designed to increase the inflow into the S&E pipeline or to decrease the attrition.

IMPROVING R&D FACILITIES

The budget includes $3.1 billion for construction, repair and modernization of R&D facilities, an increase of $36 million or 1 percent over 1990. R&D facilities are increasingly critical to advancing the frontiers of science in many disciplines. Without the specialized R&D facilities such as particle accelerators, telescopes, research ships and planes, the process of gathering new knowledge would be greatly diminished. General purpose laboratories and research support facilities are also important, particularly where such facilities are used for the training of future scientists and engineers.

Agencies support the construction of R&D facilities either for their own needs or at universities when needed to support ongoing or new R&D programs that have been evaluated for merit. The Federal Government also provides mechanisms (e.g., use allowances, depreciation recovery) that allow universities to recover over time part of the cost of R&D facilities on their campuses.

In the post-Sputnik era, the Federal Government invested large amounts of money to build R&D facilities at universities primarily through institutional grants. This Federal investment peaked in 1965 at $374 million (1982 dollars) and tapered off to $46 million (1982 dollars) by 1984. In addition to the Federal investment, industry and universities themselves (through fund-raising efforts) provided resources for R&D facilities.

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IMPROVING R&D FACILITIES

(Dollar amounts in millions)

Department or Agency	Budget Authority				Outlays			
	1990 Enacted	1991 Proposed	Dollar change	Percent change	1990 Enacted	1991 Proposed	Dollar change	Percent change
Energy	1,139	1,325	+186	+16	1,057	1,195	+138	+13
National Aeronautics and Space Administration	850	846	−4	—	628	720	+92	+15
Defense-military	639	458	−181	−28	545	489	−56	−10
Agriculture	118	103	−15	−13	148	128	−20	−13
National Science Foundation	119	153	+33	+28	64	75	+11	+18
Health and Human Services	77	96	+19	+25	77	60	−17	−22
Other Agencies [1]	80	78	−2	−3	70	71	—	—
Total	3,023	3,059	+36	+1	2,590	2,738	+149	+6

[1]Includes the Departments of Transportation, Interior, Commerce, Veterans Affairs, Education, the Treasury, the Environmental Protection Agency, Smithsonian Institution, Tennessee Valley Authority, and the Corps of Engineers.

Over the last several years, there has been concern expressed by some that the Nation's academic research facilities (many of which date from that post-Sputnik investment) are not able to support adequately the kind of advanced research needed to keep the U.S. competitive. This has contributed to the much wider use of Congressional "earmarking" of money in appropriations bills for facilities at specific locations (generally universities). One analysis has estimated that the 1990 appropriations bills contained over $130 million in earmarked projects, and over the decade 1980 to 1989, over $900 million has been earmarked for over 300 specific projects. In many cases, the scientific merit of such facilities (i.e., how they contribute to the overall S&T enterprise or to specific agency missions) has not been evaluated. It should also be noted that, for the most part, these funds were not added—they were reallocated from other important R&D programs. In many cases this reallocation has resulted in the less efficient use of existing, productive R&D facilities.

The Administration will continue to oppose the practice of "earmarking" of facilities funding in appropriations bills or other legislation. Not only does this practice result in a less optimal allocation of R&D resources, but, there is no evidence that it improves the breadth, depth or quality of the Nation's R&D infrastructure. In fact, a recent study appears to indicate that the practice reinforces the existing geographic distribution of Federal R&D dollars.

NSF initiated a new academic research facilities modernization program in 1990. This $20 million program will be continued at the same level in 1991. This will allow experience to be gained in managing this kind of program, and to evaluate its impact on U.S. science and technology.

The Administration will continue to examine a wide range of options for increasing the level of national investment in state-of-the-art R&D facilities, in particular, the implementation of OMB Circular A-21, "Cost Principles for Educational Institutions" to ensure that it provides incentives for academic institutions to invest in R&D infrastructure, and that Federal R&D dollars are accounted for adequately. The Federal Government, States, the private sector, and academic institutions have a shared responsibility in this area, and new and innovative approaches will be needed at all levels.

MAKING THE RESEARCH AND EXPERIMENTATION TAX CREDIT PERMANENT

The budget proposes to make the 20 percent research and experimentation (R&E) tax credit permanent by allowing 100 percent of total research expenses to be used for the computation of the credit for all years after December 31, 1989.

ENCOURAGING R&D INVESTMENTS BY TRANSNATIONAL COMPANIES

The budget proposes to make permanent the rules, as modified by the Omnibus Budget Reconciliation Act of 1989, for the allocation of foreign and domestic R&E expenditures for companies with foreign operations. The proposal would also allow 100 percent of U.S. expenditures to be covered rather than the current 75 percent. This proposal would apply to all tax years beginning after August 1, 1990, when the current rules expire.

A further discussion of the research and experimentation tax credit and allocation rules is contained in Section Two, Part IV-B, "Receipts, User Fees, and Other Collections."

AGENCY R&D BUDGET TOTALS

In total, the 1991 budget proposes $71 billion for research and development activities, including facilities. This is an increase of $4.5 billion or 7 percent above 1990 levels. This section has discussed the major R&D initiatives contained in the budget, including significant cross-agency issues. A complete list of R&D funding by agency is shown below.

FUNDING OF RESEARCH AND DEVELOPMENT BY DEPARTMENTS AND AGENCIES

(Dollar amounts in millions)

Department or Agency	Budget Authority				Outlays			
	1990 Enacted	1991 Proposed	Dollar change	Percent change	1990 Enacted	1991 Proposed	Dollar change	Percent change
Conduct of R&D:								
Defense-military	37,226	38,714	+1,488	+4	37,064	37,547	+483	+1
Health and Human Services	8,506	8,933	+428	+5	8,055	8,568	+514	+6
Energy	6,023	6,058	+35	+1	5,599	6,019	+420	+7
National Aeronautics and Space Administration	6,382	8,414	+2,032	+32	5,773	7,547	+1,774	+31
National Science Foundation	1,766	1,983	+218	+12	1,744	1,944	+200	+11
Agriculture	1,108	1,184	+76	+7	1,084	1,156	+72	+7
Interior	503	493	−10	−2	469	499	+29	+6
Environmental Protection Agency	431	460	+29	+7	393	435	+42	+11
Commerce	425	443	+18	+4	441	406	−35	−8
Transportation	336	422	+86	+26	387	426	+39	+10
Agency for International Development	230	214	−16	−7	306	289	−17	−5
Veterans Affairs	215	201	−13	−6	214	205	−9	−4
Other Agencies [1]	561	621	+60	+11	556	592	+36	+6
Subtotal, Conduct of R&D	63,711	68,140	+4,429	+7	62,085	65,632	+3,547	+6
R&D facilities	3,023	3,059	+36	+1	2,590	2,738	+149	+6
Total [2]	66,734	71,199	+4,465	+7	64,674	68,370	+3,695	+6

[1] Includes the Departments of Education, Justice, Housing and Urban Development, Labor, the Treasury, the Nuclear Regulatory Commission, Tennessee Valley Authority, Smithsonian Institution, and the Corps of Engineers.
[2] Components may not add to totals because of rounding.

III.D. INVESTING IN HUMAN CAPITAL

Increases in the Nation's standard of living depend mainly on the rate of improvement in productivity. Productivity growth depends on both physical investment in plant and machinery and, in critical measure, on investment in human capital. Human capital is estimated to account for three-quarters of the nation's productive capital stock, and human capital investment has made substantial contributions to productivity and economic growth throughout our history.

Enhancing investment in human capital is a key priority of the President and a major policy emphasis of this budget. The documented deficiencies in American educational performance are a threat to our future well being. Although the primary responsibility for education in America rests with the States, localities, parents, and the private sector, the Federal Government has several important roles to play.

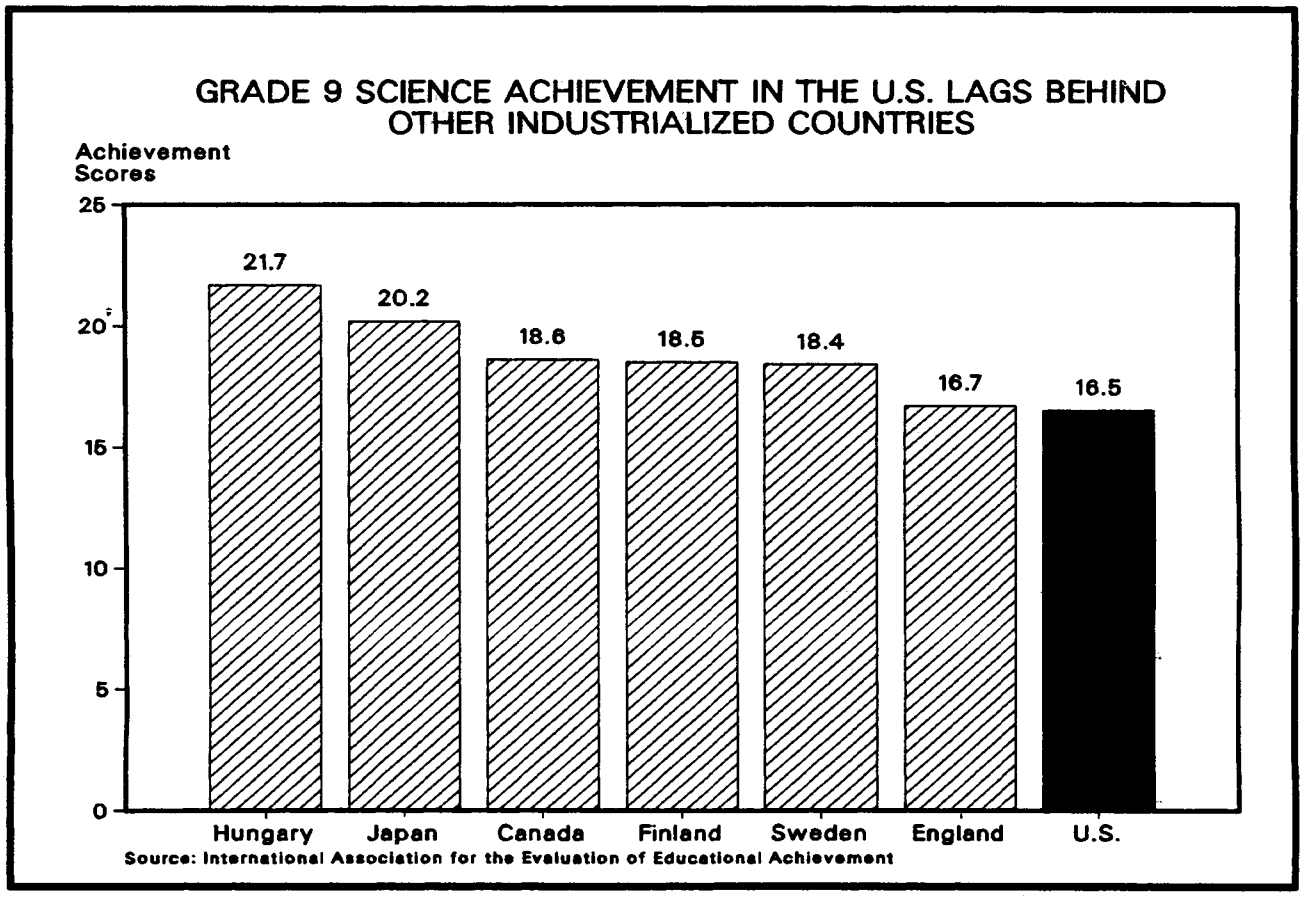
This section highlights proposals which will expand educational research, improve the quality and usefulness of education statistics, help more young children become better prepared for school, increase Federal resources for programs targeted to those most in need, support educational reform, and strengthen job training.

REFORMING AMERICAN EDUCATION

THE STATE OF AMERICAN EDUCATION

The failings of our educational system were brought to the forefront of the Nation's consciousness by the report, "A Nation At Risk," commissioned by the Federal Government in 1983. The report highlighted declines in achievement and the dangers they pose to the future of our country. It prompted every State to study educational problems and to improve performance.

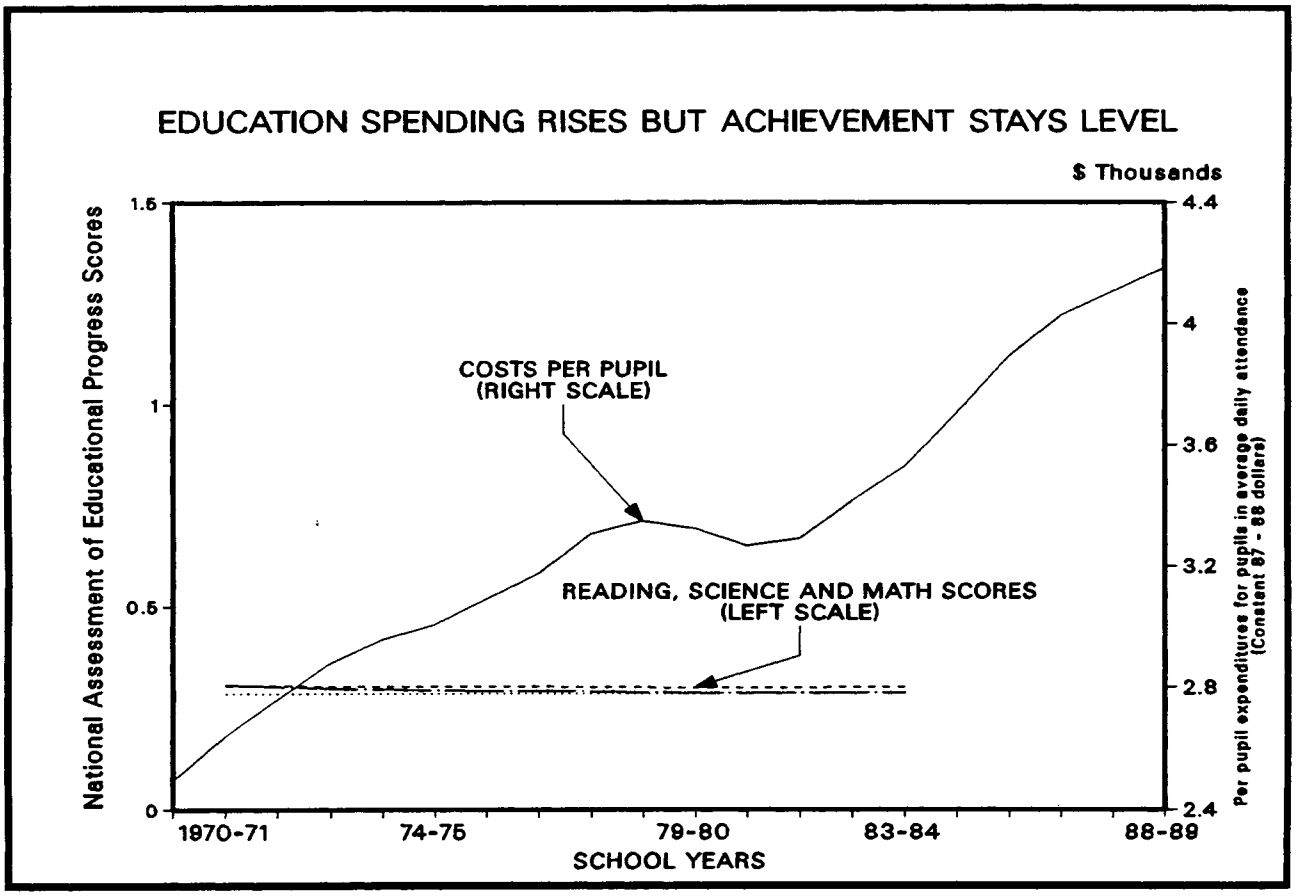
State initiatives that were prompted by the report focused on changing promotion and graduation requirements, improving teacher compensation and training, and lengthening the school day and school year. States also substantially increased spending on schools. But these changes have not been sufficient. Whether measured by changes in achievement within this country or by comparisons with children in other countries, American children still do not have adequate mastery of basic and higher-order skills to become fully productive citizens and members of the work force.



Much of the problem of low educational achievement is related to changes in our culture. Many parents seem less involved in their children's education. Drug and alcohol abuse and the damage they cause to the learning environment have become facts of life in too many communities. The National Assessment of Educational Progress reports that children devote more time to watching television than doing homework; indeed, school-age children watch television for nearly as many hours as they spend in the classroom. All of these changes, and others, make the schools' job much more difficult, and help explain why more spending on education, by itself, cannot solve the problem.

In fact, the nation's spending on schooling at all levels has risen dramatically. Over 6 percent of GNP is devoted to education. Total spending on education is estimated to be $353 billion in 1990, representing real increases of 29 percent since 1980 for elementary and secondary education and 36 percent for higher education. During this period, elementary and secondary enrollments were declining, so spending per pupil was rising at even faster rates.

More significantly, however, there is little relationship at the national level between student achievement and spending. As the chart shows, student achievement scores on tests of the National Assessment of Educational Progress have not improved significantly since the early 1970's (although there have been important changes for certain groups). At the same time, spending per pupil at the elementary and secondary level has risen steadily.



The improvements necessary for American education require cooperation between all levels of government, full involvement of parents and participation of the business sector, careful definition of where increased spending may be beneficial, a much stronger focus on accountability for results, and development and use of good information from research and statistics on what progress is being made and where better strategies are needed.

THE FEDERAL ROLE IN EDUCATION

The principal Federal role in education is to identify and inform the public of the strengths and weaknesses of the system; to highlight ways to make improvements; and, where possible, to encourage innovation and constructive change. "A Nation at Risk" is an example of how the Federal Government has carried out this role in the past. In his first year in office, President Bush exercised leadership by his frequent personal expressions of concern and commitment, by transmitting to Congress the Educational Excellence Act, by creating a President's Educational Policy Advisory Committee and by convening the President's Education Summit With Governors. These initiatives are discussed further below.

The Federal Government also plays a limited, but important, role in education finance. It supports educational research and statistics to describe the educational system and its problems and help point the way toward improvement. Substantial funding is provided for programs targeted on aid for the disadvantaged and the handicapped. Low income persons seeking higher education overcome financial barriers with Federal grants, and with subsidized loans and job assistance.

Just three months after assuming office, President Bush forwarded to Congress a request for over $400 million in new funding for a series of important new initiatives in education. In the 1991 budget, his first full budget, the President proposes major increases for education programs. The 1991 budget requests for

education activities are larger than any ever passed by Congress.

The President's Educational Policy Advisory Committee

Recognizing the need for advice on educational issues, the President appointed a national advisory committee. This committee is headed by the chief executive officer of a major corporation and includes other business leaders, university presidents, state officials, the leaders of the teacher unions, representatives of other education interests and of parents, teachers, school administrators, and the media.

Unlike many other Federal advisory bodies, this one will not just write another report and disband. The President's goal is to have a continuing source of diverse and expert advice and comment on education issues, options for addressing those issues, and insights into appropriate Federal involvement in education.

The Education Summit

There has rarely been a more dramatic example of how the Federal leadership role in education can be carried out than the historic President's Education Summit With Governors. The critical nature of the education problem and its significance to national policy was underscored for the Nation when, on September 27–28, 1989, the President convened the Cabinet and the Governors to address American education.

The President and the Governors defined their central concern to be the "significant and sustained educational improvement" of our school children. They noted many encouraging signs of change in education since 1983. They agreed, however, that educational achievement among all segments of the population is too low to sustain the pace of improvement in the quality of life that each generation of Americans has wanted and has achieved for the next. They recognized that inadequate educational achievement also threatens our ability to compete successfully in the rapidly changing world economy.

The President and the Governors reached four primary agreements at the Summit meeting:

- to establish a process for setting national educational goals;
- to seek greater flexibility and enhanced accountability in the use of Federal resources to meet the goals;
- to undertake a major State-by-State effort to restructure the education system; and
- to report annually on progress in achieving the goals.

Areas identified in the Joint Statement for consideration for national goals were:

- the readiness of children to start school;
- the performance of students on international achievement tests, especially in math and science;
- the reduction of the dropout rate and the improvement of academic performance, especially among at-risk students;
- the functional literacy of adult Americans;
- the level of training necessary to guarantee a competitive workforce;
- the supply of qualified teachers and up-to-date technology; and
- the establishment of safe, disciplined and drug-free schools.

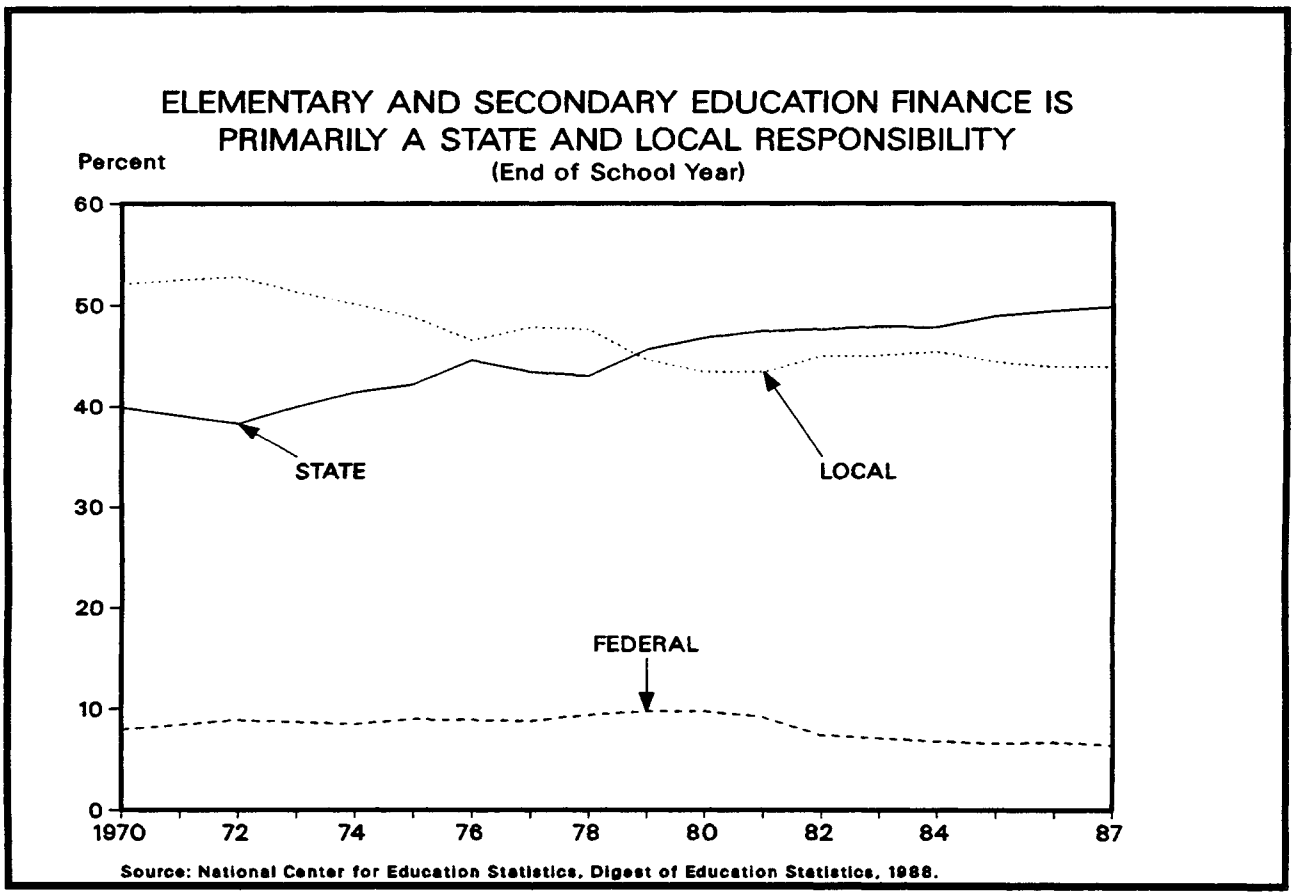
The Summit commitment to flexibility and accountability will require legislation. States would be able to obtain waivers of certain statutory provisions in education, training and related programs if they can show that such waivers would lead to higher achievement levels for the target populations. Those Federal rules that are essential to assure service to current target populations (the disadvantaged, the handicapped, the unemployed) could not be waived.

The President's 1991 budget policies reflect careful examination of how best the Federal Government can contribute to supporting the Summit agreements; help States and the schools achieve the national goals and improve the achievement of our children; and measure and report on progress.

The Federal Role in Education Finance

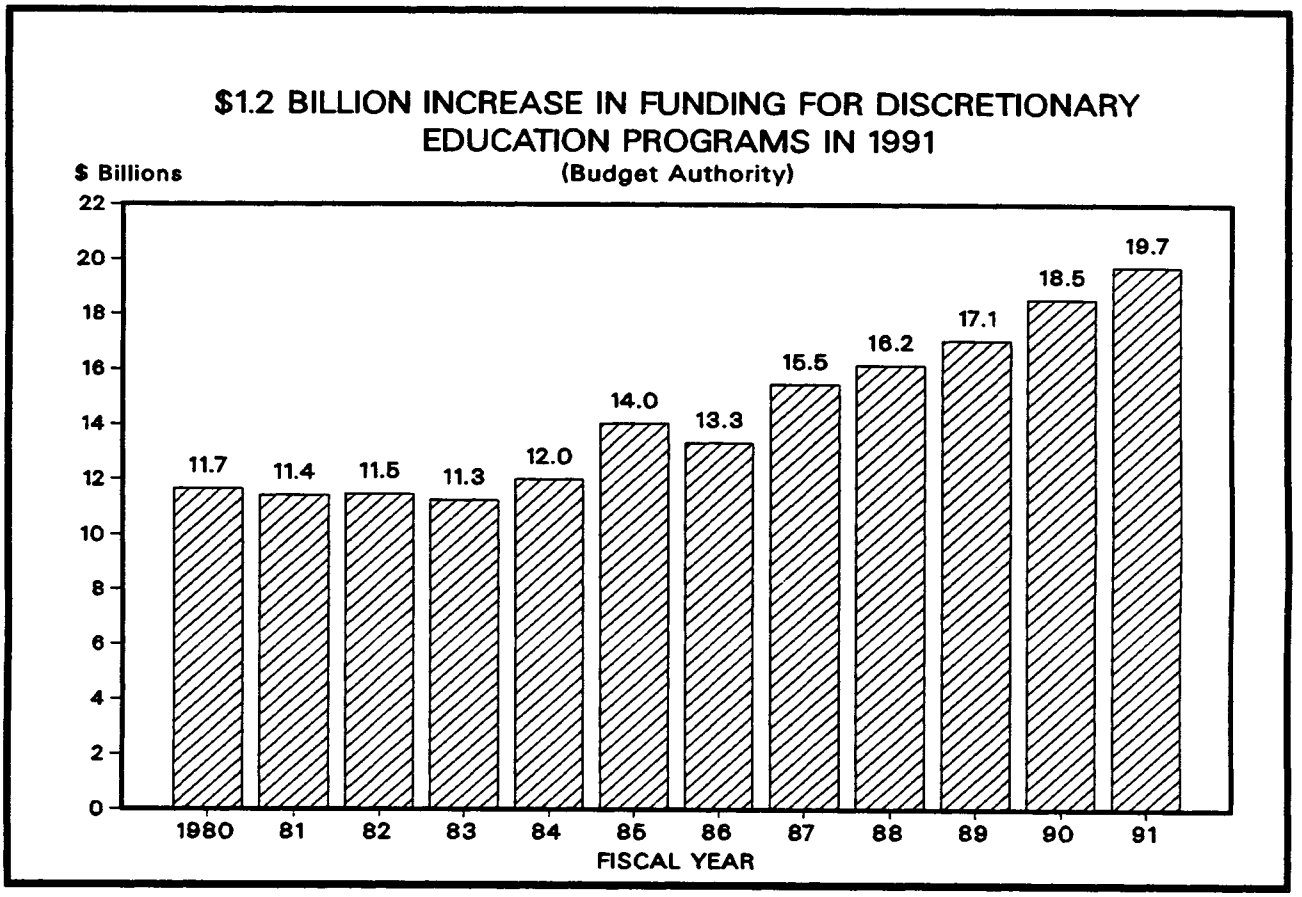
The primary responsibility for school policies, for the operation and improvement of the schools, and for education finance, remains where it has always been in America: at the State and local level.

In elementary and secondary education, Federal spending has varied as a percent of overall spending but, consistent with the primacy of State and local governments, has never exceeded ten percent.



Notwithstanding its relatively limited role in funding, the Federal Government does make major investments across a range of programs and activities that are critical to improving education.

The 1991 budget proposes the highest spending levels ever for programs to prepare children for school and for discretionary education programs.



In the sections that follow, the key budget policies in these areas are explained in more detail.

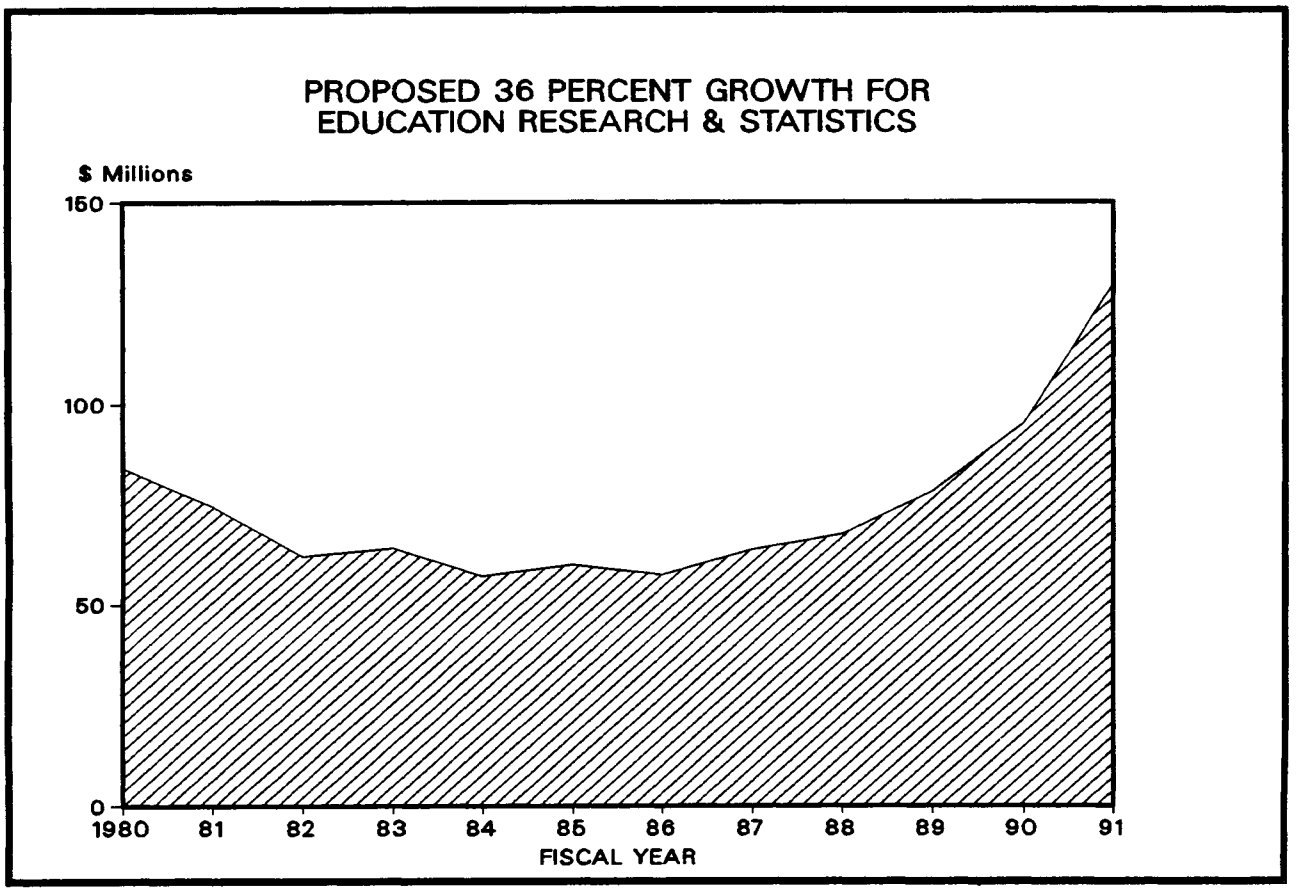
MAJOR EDUCATION POLICIES IN THE 1991 BUDGET

Research and Statistics

For more than 100 years, a primary responsibility of the Federal Government in education has been to collect, disseminate and encourage the use of good information. The government also finances high quality research on important issues and tests new ideas. The money devoted to these functions is often overwhelmed in the public perception by the billions spent on operating programs. Nevertheless, these smaller investments can have the greatest impact on education reform in the long run.

Research and statistics have never been more important, as the President and the Nation's Governors commit themselves to an intensive multi-year effort to improve educational achievement. This effort includes the establishment of national education goals and measurement of progress toward their achievement. It is important to know how to educate and train people better and how to find out which new techniques lead to improved results.

The 1991 budget for the primary research and statistics activities of the Education Department provides an increase of $34.5 million, 36 percent more than Congress provided in 1990. This includes a 50 percent increase for statistics, from $40 million in 1990 to $60 million in 1991.



Statistics improvements include $19 million for the National Assessment of Educational Progress, an increase of 10 percent over 1990. This is one of the most important means to measure and report educational achievement. The remaining resources finance improvements and expansions in the collection of data on trends in educational enrollments, staffing and finances, and teacher supply and demand. They also support longitudinal studies of student progress and technical assistance to States and localities to improve their statistical systems.

Research and dissemination would increase by $14 million from $55 million in 1990, to a total of $69 million in 1991. Among the most important investments proposed are: $5 million for new research on dropout prevention; $22 million for support of a network of national research and development centers conducting research on educational technology, reading, effective teaching for the disadvantaged, school leadership and other subjects; $7 million for the Educational Resources Information Center, a system which collects and disseminates information to teachers, administrators and researchers across the country; and $20 million for regional education laboratories to support local school improvement efforts.

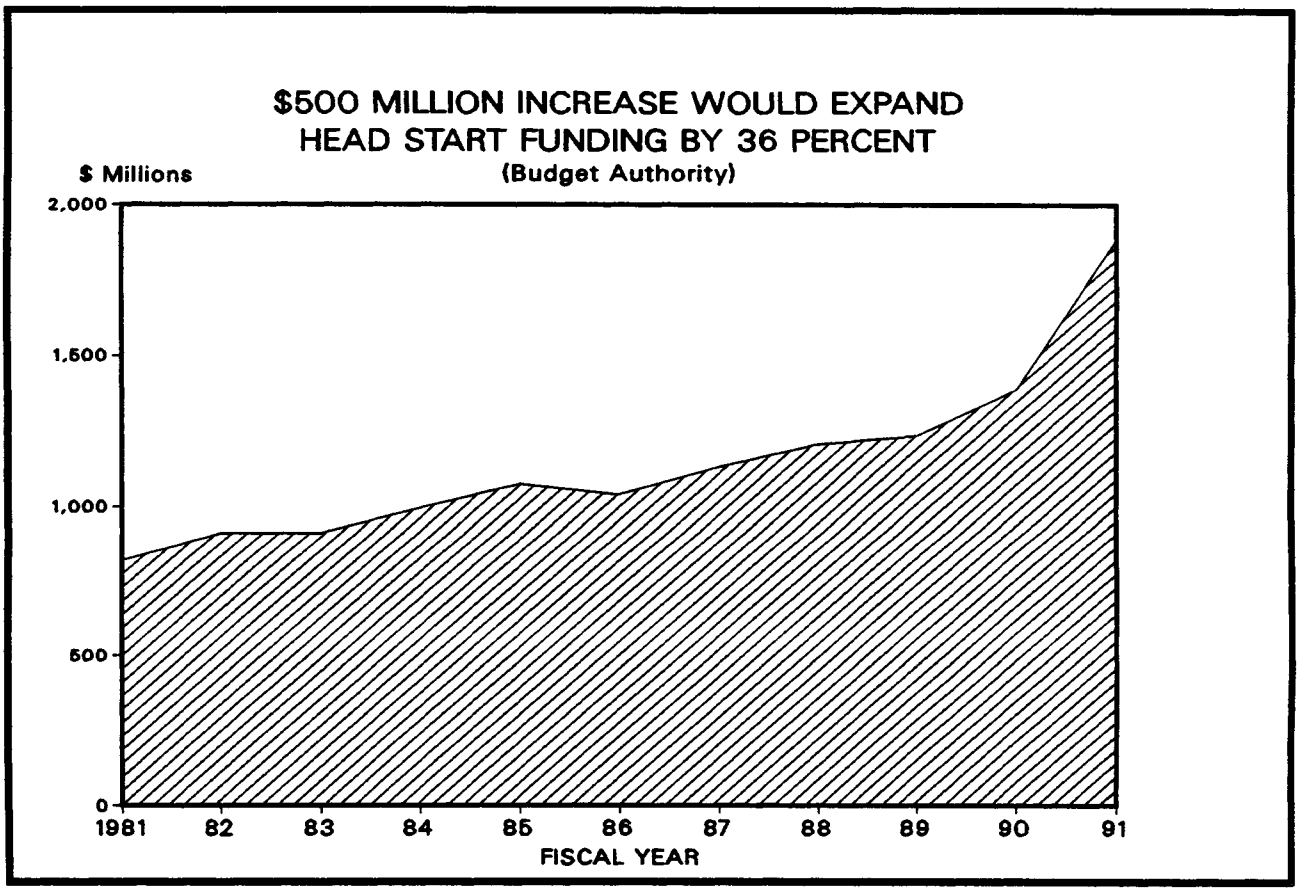
Preparing Children to Learn

"The readiness of children to start school" is the first national goal suggested by the President and the Governors at the Education Summit. The most important influence on children's ability to learn when they enter school is their home environment. No government or other outside agency can substitute for a supportive homelife. Children who are disadvantaged or handicapped, however, may need extra help because they are at special risk of starting behind their peers when they enter school. Accordingly, Federal programs to help these children prepare for school have become increasingly important. The 1991 budget continues and expands this emphasis on preschool

preparation for the disadvantaged and handicapped.

Head Start.—Head Start is the largest and oldest Federal program designed to prepare young children to succeed in school. Aimed at giving an "equal place at the starting line" to children who face extra challenges in keeping up with their schoolmates, Head Start provides comprehensive educational, medical, nutritional, social and other developmental services to poor, preschool-age children. Because kindergarten is now almost universal for five year olds, the majority of children served by Head Start are four years old.

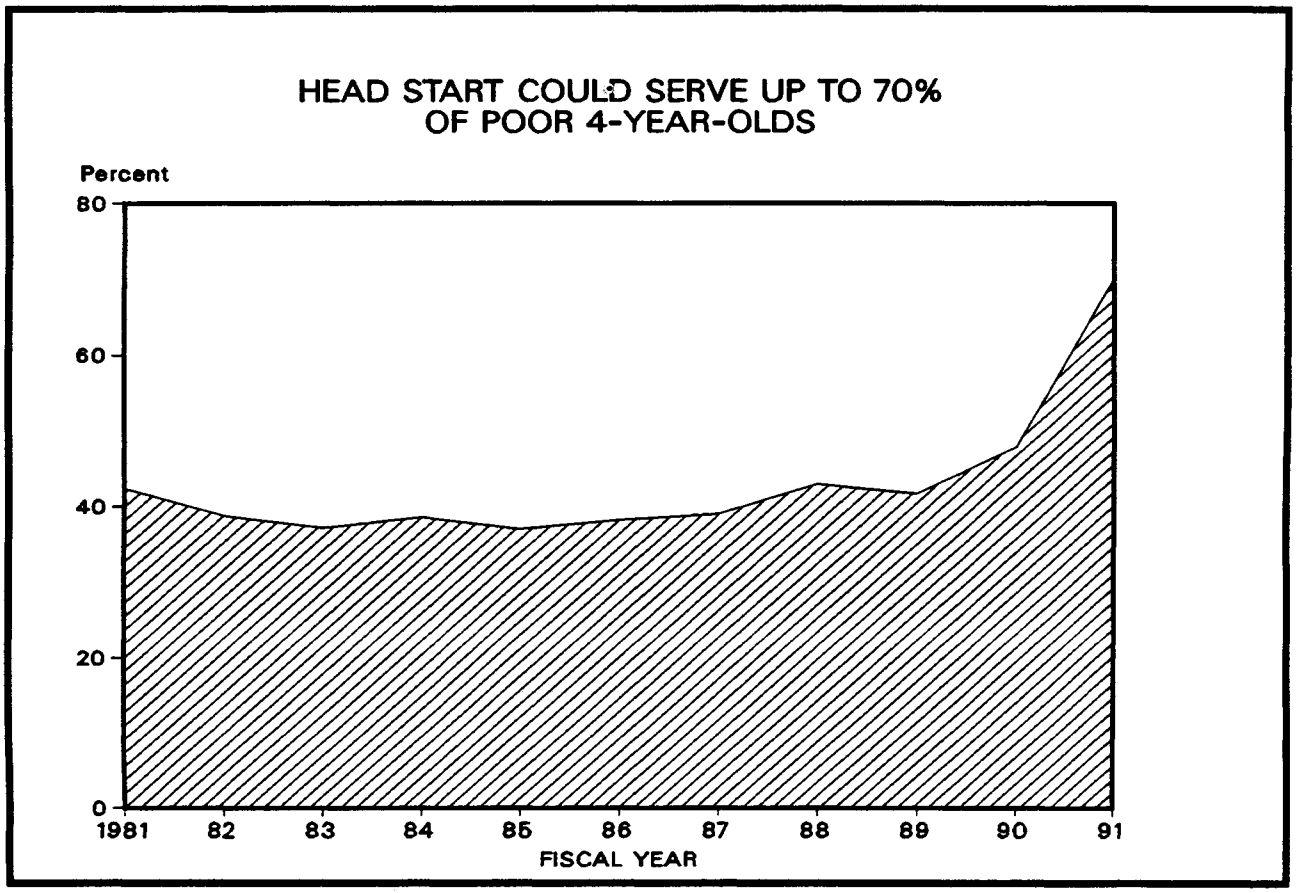
Since its inception in 1965, Head Start has emphasized parental and community involvement. Head Start parents both receive services, such as parenting education, as well as provide services by participating in local program administration, volunteering for program work, and serving as paid staff. (Currently almost one-third of Head Start's paid staff is composed of present and former Head Start parents, including many ex-volunteers who have received credentials in early childhood development.) In total, Head Start volunteers number about 620,000 nationwide, more than the number of children enrolled and eight times the number of paid staff.



Over time Head Start has evolved from an eight week summer program to a program that uses a wide range of organizational and service delivery models to meet the needs of poor children and their families in different communities. For example, projects can be center-based or they can be home-based, depending upon the community being served. Reflecting the close ties that each Head Start project has to its community, local sponsors are diverse, ranging from community action agencies to religious organizations.

Research shows that Head Start children experience substantial immediate gains in cogni-

tive growth, school readiness and achievement. To enable more children, as well as their families, to receive the benefits of Head Start, the budget proposes to increase the program by $500 million in budget authority, to a total of $1.886 billion. This 36 percent increase over the 1990 level would enable Head Start to enroll up to 180,000 more poor four year olds. As a result, the total percentage of eligible children in this age group served could be as high as 70 percent. Because 26 States and the District of Columbia now fund their own preschool programs, and Federal funds support preschool activities other than Head Start as well, the percentage of poor four year olds benefiting from pre-kindergarten programs would be even higher.



Other programs.—Increased resources for Department of Education programs that benefit preschool children are also proposed in the budget.

- Nearly 350,000 children attend pre-kindergarten and kindergarten programs funded under the Chapter 1 Compensatory Education programs. The budget provides substantial increases for grants to school districts to support this and other programs for the educationally disadvantaged, as discussed in the sections that follow.
- Funding for Even Start would double, to $48 million, allowing significantly increased participation in this program designed to provide basic education services to parents together with their children aged one through seven.
- Since 1987, the Department has provided funds to States to develop systems to find, and coordinate services for, handicapped infants and their families. By 1991, every State's system, by law, must be fully operational. The budget provides $83 million for States to maintain these systems.

- To pay part of the excess cost of education and related services for handicapped children age three to five, the budget also provides $258 million under the Preschool State Grants program.

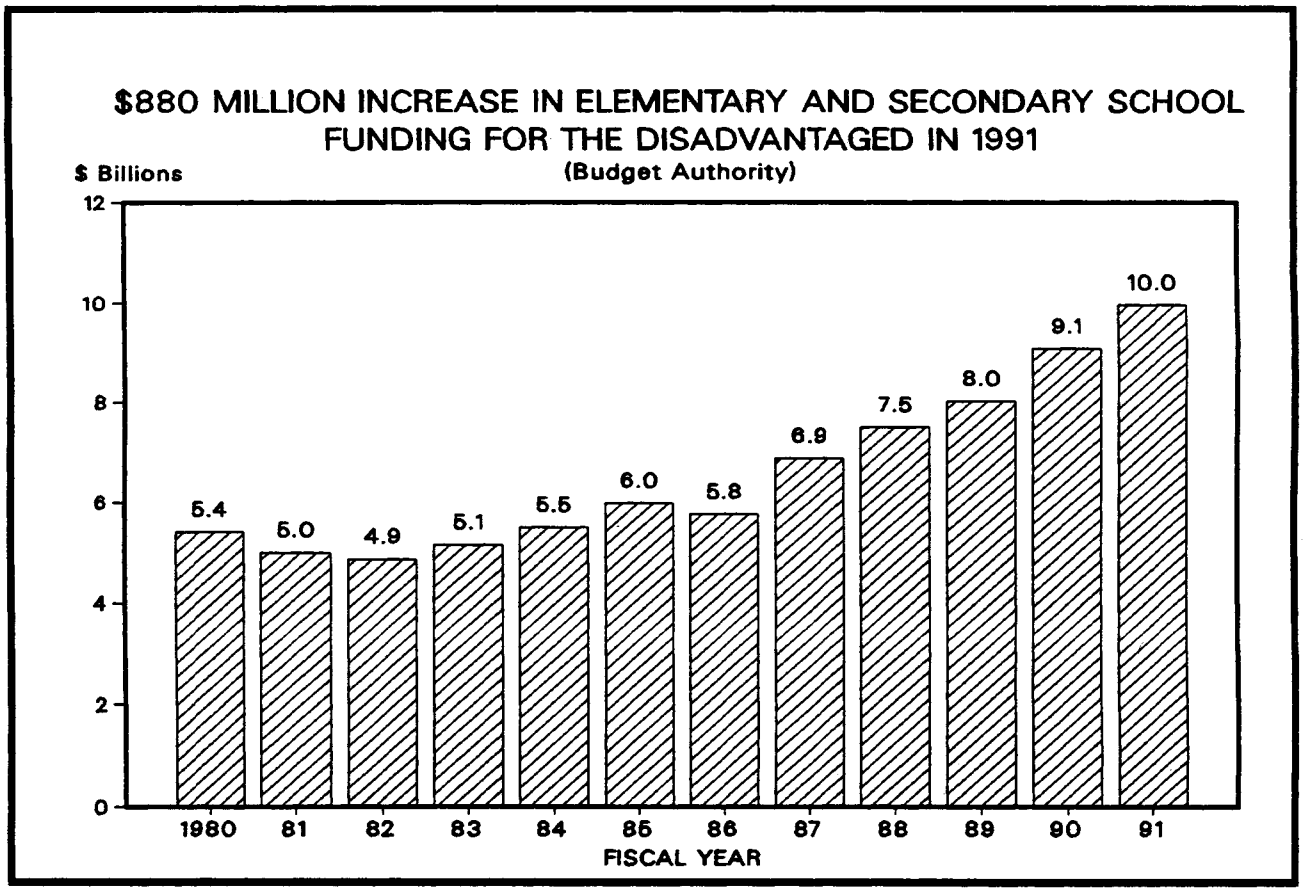
Targeting Resources on Those Most in Need

One of the Federal Government's important, long-standing commitments to education is its support of programs that augment State and local services for the disadvantaged. This commitment is of growing importance as more of our population is made up of groups historically at risk of lower achievement in education. The budget addresses the commitment by targeting additional funding on elementary and secondary educational services for the disadvantaged and the handicapped, and by continuing to ensure that financial barriers to access to higher education are reduced.

Elementary and secondary education.—The largest program for remedial education services for the disadvantaged is Chapter 1 Local Education Agency and Concentration Grants. Grants provide services to nearly 5 million children each year. The 1991 budget request for this program is $4.96 billion, an increase of $366 million, 8 percent over 1990.

Funds to support State Program Improvement Plans for Chapter 1 schools that are not succeeding in meeting their goals for the disadvantaged are nearly doubled over what Congress provided in 1990, from $12.5 to $24 million. Additional funding is also provided for evaluation of these programs, to ensure that this substantial investment is truly resulting in increased achievement levels for the disadvantaged.

The chart below shows the combined funding for Chapter 1, the various smaller elementary and secondary programs, bilingual education and education of the handicapped.



Student aid.—The other large program area for Federal funding is postsecondary education financial aid. The 1991 budget continues to support over $18 billion in aid to almost 6 million students with budget authority of $9.5 billion. This aid, in the form of grants and subsidized loans and jobs, helps make it financially possible for qualified students to obtain a postsecondary education, regardless of family income.

In recent years, some schools have taken advantage of the availability of Federal student aid to enroll students who are not truly qualified for postsecondary education or for whom they will not be providing a good education. Many of these students are not equipped for the job market when they leave school and often drop out of school very early while the school keeps the Federal aid. Some of these dropouts have taken out large loans which they cannot repay, and thus default. The Education Department is taking aggressive regulatory and administrative actions to stop these schools from taking advantage of Federal aid and of disadvantaged students. Additional legislative proposals will further strengthen the Secretary's enforcement powers to prevent program abuses.

Much of the Federal student aid now supports vocational training, in addition to the traditional support for students attending two and four year colleges. The Administration is considering means to rationalize support for vocational training under the student aid programs, the Job Training Partnership Act, and the Vocational Education Act.

The Educational Excellence Act

Shortly after taking office, President Bush proposed eight education initiatives. In addition to providing renewed Presidential commitment to improved education, his goal was to reinvigorate the education reform movement by selectively adding Federal money in selected areas.

The President transmitted his bill, "The Educational Excellence Act", on April 5, 1989. This bill would give incentives to schools to improve educational achievement, expand the use of magnet schools, reward excellent teachers and students, promote the hiring of persons with proven subject matter knowledge and management abilities to be teachers and principals, increase the endowment funds of the nation's Historically Black Colleges and Universities, and provide special funding for the school districts with the worst drug abuse problems.

Congress did not complete action on the bill. Appropriations were provided for 1990 for the two largest programs, Merit Schools and Magnet Schools of Excellence, contingent upon passage of the authorizing legislation.

The budget assumes that Congress will pass the Educational Excellence Act on a timely basis. For 1991, the budget includes $401 million in budget authority for these programs.

Other Education Initiatives

Support for programs for the disadvantaged absorbs the bulk of Federal education spending. Other Federal program activities are less costly, but perhaps in the long run more important for educational improvement. The budget for research and statistics and the Even Start program have already been discussed. Other key policies in the 1991 budget include:

Summit follow-up.—$20 million is requested for activities related to implementing the Summit Agreements. Uses may include activities to help States implement proposed legislation providing flexibility and enhanced accountability, and additional funding for development of measures of progress toward national educational goals.

Dropout demonstrations.—$45 million is requested for a program of dropout prevention demonstrations. These projects will be carefully designed to build on the learning from $22 million in dropout demonstrations now coming to an end. Coupled with evaluation of the prior demonstrations, and $5 million in new dropout research, these projects will help States learn how to prevent young people from dropping out of school and how to help them return to school if they do drop out.

School principals.—Principals and other administrators play essential leadership roles in school reform. A new $25 million program is included in the budget that will improve the abilities of school principals and other administrators. Under this program, talented persons

preparing to become principals will receive some short-term training and then spend a year with a proven successful principal to learn from this "mentor" how best to address the complex problems of school administration.

Mathematics and science education.—$230 million is proposed for the Dwight D. Eisenhower Mathematics and Science Education programs, a 70 percent increase over what Congress provided in 1990. These programs provide funds to States to improve the knowledge and teaching abilities of mathematics and science teachers. In addition, programs for science, mathematics and engineering education in the National Science Foundation are proposed to be increased by $100 million, to $460 million, a 28 percent increase over 1990. Other Federal agencies, such as the National Aeronautics and Space Administration and the Energy Department, also have education initiatives. The Domestic Policy Council Working Group on Education is providing coordination across agencies.

Literacy.—$239 million is proposed for the Adult Education programs of the Department of Education, an increase of more than 25 percent over what Congress provided in 1990. In 1991, $200 million would be distributed to States to help finance remedial education and thus to improve the literacy levels of adults. The Education Department will also create a new Adult Literacy Clearinghouse to help States, volunteer groups and the private sector share knowledge of what works in literacy programs. Funding is also proposed to be doubled from $3 million to $6 million in 1991 for the VISTA (Volunteer in Service to America) Literacy Corps of the ACTION agency, which supports volunteer efforts to overcome the problems of illiteracy. The Domestic Policy Council Working Group on Education is coordinating literacy initiatives across many agencies of government, and is developing plans for close cooperation with volunteer and private sector literacy action efforts.

Historically black colleges and universities.—$95 million is provided to support the operations of historically black colleges and universities and graduate institutions. Most importantly, an additional $15 million is provided for matching endowment grants for these institutions, triple the amount provided in 1990. Encouraging the building of endowments is the government's most effective contribution to the future financial independence of these institutions.

SUMMARY OF THE EDUCATION BUDGET AND POLICIES FOR 1991

The 1991 budget for the Education Department asks Congress to provide $1.2 billion more in 1991 than it did in 1990 for discretionary programs. This is a 6 percent increase. The projected decline in interest rates, to which guaranteed student loan subsidies are tied, produces anticipated savings of nearly $700 million which help finance the discretionary program increases. The combination of discretionary increases and loan subsidy savings results in a total Federal Education Department budget of $24.6 billion, an increase of $500 million over total 1990 budget authority. This is the largest education budget ever proposed.

The Presidential and State commitments to educational improvement supported by this budget represent a new beginning for national education policy. There can now be some cautious optimism for improvements in education in the 1990s and far into the next century.

IMPROVING JOB TRAINING OPPORTUNITIES

Learning does not end with graduation from high school or college. It is a constant life-long process. If giving every child the opportunity for a basic education is essential in a democratic society, so is providing access to additional training beyond the classroom. Although most job training is provided by employers for their employees, the government also provides second chance job training for those with poor skills who have not succeeded in the traditional education establishment or work environment.

THE CHANGING WORKFORCE OF THE 1990s

Emerging demographic trends, coupled with higher job skill requirements, will challenge the nation's ability to supply the highly skilled workers needed to sustain economic growth in the 1990s.

During the next decade the workforce is expected to grow more slowly than at any time since the 1930s. While the labor force exploded during the 1970s, growing 2.9 percent annually, in the 1990s labor force growth is expected to drop to 1 percent each year. Such a slowdown in workforce expansion will tighten labor markets and encourage employers to invest more resources in their current employees as well as increase commitments to new types of entry-level training.

In addition, employers will find the workforce becoming older as the pool of young labor force entrants shrinks. By the year 2000, the average age of U.S. workers will climb to 39 years, compared with 36 years currently. The number of young workers age 16–24 will drop by almost 2 million, or 8 percent. While tomorrow's workforce will be more experienced, it may also be less adaptable. Older workers are less likely to move, change occupations, or to undertake training than their younger counterparts. Industries that have grown by relying on young, flexible workers are likely to find them in short supply during the 1990s.

Employers will find other changes as they recruit employees. Women will be almost two-thirds of new labor force entrants, while minorities are going to account for about 30 percent, or twice their current share of the workforce. In addition, immigrants will represent the largest share of the increase in the workforce since World War I. These trends can be expected to encourage employers to offer employment and training to workers many traditionally have not hired.

Coupled with the changing demographics of the labor force, the jobs of the future will demand greater education and more complex skills. Low skill jobs are declining. Of all new jobs that will be created by the turn of the century, more than half are expected to require some training beyond high school, and almost one-third will be filled by college graduates. Today, less than one-fourth of all occupations require a college degree. By contrast, on average, jobs created during the 1990s will require 13.5 years of education, compared to 12.8 years for the current workforce.

Many young workers entering the workforce lack basic reading, computing, and analytic skills. Minority workers, who have been concentrated in lower skill occupations, will require greater training and education than in the past to fill the higher skill jobs created in the 1990s.

INDUSTRY'S ROLE

The responsibility for investing in the nation's current workforce rests primarily with the private sector. Labor market trends in the 1990s are likely to prompt U.S industry to step up its investment in human capital.

In total, U.S. industry already spends some $30 billion annually on formal worker education and training programs. On average, private sector firms spend about 1.4 percent of payroll on training programs, but expenditures by larger firms can reach 2 to 4 percent. Currently, about one in ten American employees receives some formal employer-provided training. In addition to expenditures for formal training programs, employers spend anywhere from three to six times as much—some $90 billion to $180 billion—for unstructured training. In fact, such training is the principal means by which small business integrates technical, economic, strategic, and regulatory change into the workplace.

The substantial commitment of employers' resources to worker training is expected to increase. Two-thirds of all workers who will make up the U.S. labor force in the year 2000 are already working. To upgrade skills of current employees and new labor force entrants alike, additional private sector training efforts will be needed. Moreover, given the demographics of the new labor force entrants, training programs of the 1990s will have to embrace more minority workers, who represent about 15 percent of the workforce but receive only 8 percent of all formal training.

Business has shown it is increasingly committed to human capital investment not only

in the plant, but in the schools as well. U.S. firms already participate in many education partnership programs in which they guarantee jobs to qualified students upon graduation, donate money and equipment, and offer on-site teacher training. Business also demonstrates a growing willingness to participate more actively in educational reform. In a 1989 survey of the Fortune 500 companies, two-thirds of corporate executive respondents indicated their companies would be willing to take additional steps to help improve public schools. Sixty-eight percent responded that, if asked, they would personally contribute their time in the future to help the public education system.

To spur human capital investment, business, labor and academia recently joined forces to launch the Commission on the Skills of the American Workforce. Funded by a grant from the Carnegie Foundation, the 34-member commission will interview more than 2,000 business executives, employees, and policy officials in seven industrialized nations to determine the skills American workers need to compete in the next decade. The Commission's report will offer policy options for industry and government to improve worker skill levels.

Under the recently enacted changes to the Federal minimum wage law, which include a training wage, industry will continue to have flexibility to hire unskilled young labor force entrants. Set at 85 percent of the Federal minimum wage, the training wage may be paid to 16 to 19 year olds for up to three months. This wage may be extended to six months if the youth's job is part of a certified training program. The training wage was established to preserve the opportunity for young workers to enter the workforce and receive the training necessary to further their vocational development. The lower wage will help encourage employers to develop training programs which, in turn, will provide employment opportunities and on-the-job instruction for unskilled youth, helping them onto the first rung of the job ladder.

THE FEDERAL GOVERNMENT'S ROLE

The Federal Government contributes about one dollar in ten to the aggregate expenditures on formal job training. Its role is limited and, in general, targeted to serving those with the least skills through "second chance" programs. This secondary training system comprises both public and not-for-profit institutions that offer federally funded, locally delivered basic skills training and job training to those not being served by the public schools or employers. Assistance is targeted on school dropouts, public assistance recipients, the underemployed, and the working poor, and complements private sector efforts.

There is no doubt that the connection between skill acquisition and economic opportunity is powerful and growing. Education and skills determine an individual's earning power, and those with poor skills are condemned to lower earnings and limited choices. Direct government support of training programs is intended to expand access to jobs by the disadvantaged and increase their earning capacity. Over the last 15 years the Department of Labor has spent approximately $57 billion on job training and related programs, including classroom and on-the-job training. However, despite this large investment, it is not clear from the available evidence that these training programs have significantly increased participant wages.

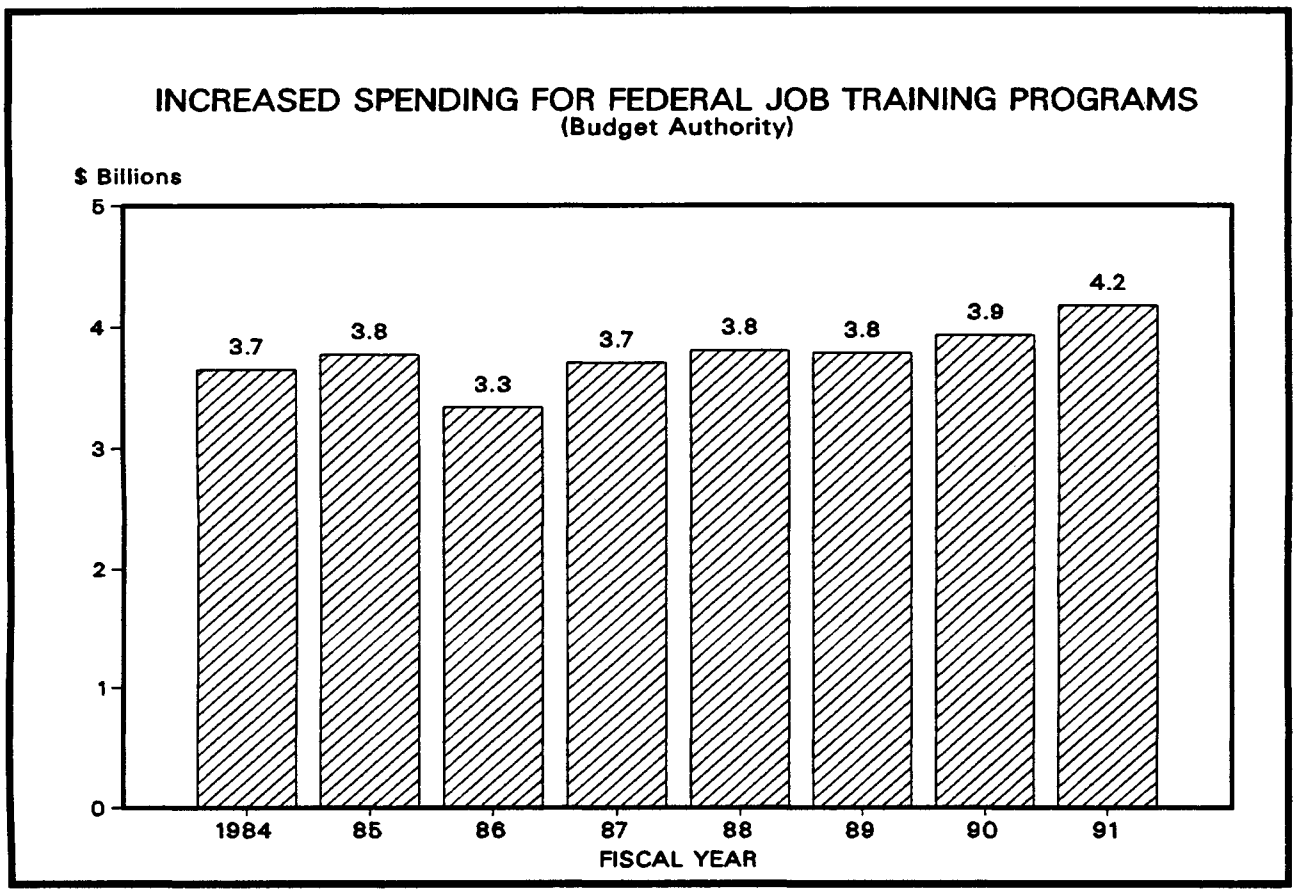
The Job Training Partnership Act

The Administration has recently proposed improving Federal job training assistance through amendments to the major federal job training program—the Job Training Partnership Act (JTPA). Enacted in 1982, the JTPA is the latest in the evolution of job training programs. JTPA has strengthened the role of employers in second chance programs. Experience shows that skill training in the context of a job or a real job prospect has a positive effect on improving employment opportunities.

Spending about $4 billion annually, the JTPA programs train economically disadvantaged adults and youth, dislocated workers, and other groups who face employment barriers, such as veterans, Native Americans, and migrant and seasonal farm workers. JTPA's current $1.7 billion block grant for training youth and adults serves almost 900,000 new participants each year through grants to States and localities. Industry participates through JTPA's Private Industry Councils, which help design and administer training pro-

grams. Performance standards help ensure program accountability. Other large-scale assistance under the current program structure includes $700 million for subsidized summer jobs and remediation for some 500,000 disadvantaged youth and $464 million for training dislocated workers. More than $800 million is provided for training the most disadvantaged youth at over one hundred residential Job Corps centers nationwide.

The 1991 budget and recent Department of Labor initiatives seek to refine the Federal Government's role in the second chance job training system. These initiatives acknowledge that the Federal Government plays a special, limited role in overall training, and encourages employers to become more involved in job training. In June 1989 the Administration proposed amendments to JTPA that would sharpen its focus on the least skilled, while maintaining JTPA's successful public-private partnership. As noted above, potential labor shortages emphasize the pressing need to bring America's most disadvantaged into the labor force and equip them with marketable skills. The Administration's "Job Training Partnership Act Amendments of 1989" would help accomplish this goal by revising eligibility criteria to ensure that the most disadvantaged receive services; providing more intensive and comprehensive services to participants; and improving coordination among Federal, State and local human resource programs.



A keystone of the JTPA amendments is the creation of two highly targeted State grant programs, one targeted only on low-income at-risk youth, the other on low-income adults. Financed at $1.7 billion, the new at-risk youth program will prepare almost 683,000 economically disadvantaged youth for the world of work, while nearly 370,000 adults will be served under the proposed $966 million adult grant. This targeting is not without risks. Over time it has become evident that it is far easier to train and find jobs for those who have relatively good education and some previous training. Job placement rates are much higher for high school graduates than for dropouts, and recent studies of JTPA programs suggest the majority of participants had high school diplomas. Thus, the JTPA amendments will target the most difficult to serve. This may mean higher per person costs and lower job placement rates, but those who need a second chance to boost themselves into a job the most will have the first opportunity to succeed.

Additional Federal Initiatives

Youth Opportunities Unlimited.—The Administration has proposed a new, $50 million multi-year challenge grant program entitled Youth Opportunities Unlimited (YOU). Targeting high-poverty inner cities and rural areas, this program is designed to have community-wide impact, serving as a model in developing a local coordinated human resource policy for at-risk youth. YOU will require grantees to provide matching funds and identify specific goals for which the funds will be used, such as high school completion by all youth in the target area. In addition, the local grantees will have to provide a comprehensive array of youth services, coordinate services provided by state and local job training, welfare, education, housing and anti-drug programs, and include participation by the private sector, school boards, PICs, and local government. The program is intended to marshal a variety of resources to help assure that at-risk youth stay in school and develop marketable job skills.

Job Opportunities and Basic Skills.—Resources from JTPA and YOU will augment the education and employment resources that are available to serve welfare families through the Food Stamp work and training program and through the new Job Opportunities and Basic Skills (JOBS) program enacted as part of the Family Support Act of 1988. The budget includes $1.133 billion for these programs in 1991. Publication of the final JOBS regulations on October 13, 1989, exactly one year after the President signed the Family Support Act into law, testifies to the high priority which the Administration has placed on implementation of JOBS. Coordination of JOBS with JTPA and other education and training programs serving the disadvantaged is required by law.

Under JOBS, recipients of Aid to Families with Dependent Children with no children under the age of three (or age one at State option) are required to participate in education, employment and training activities intended to enable them to move toward self-support. Parents under age 18 who have not completed high school are required to stay in or return to school, regardless of the ages of their children. To ensure that States actually involve significant numbers of recipients in employment and training activities, JOBS contains participation standards that increase over time until, in 1995, 20 percent of those not exempt from participation must be actively participating.

Skills Commission.—As part of the Administration's continuing interest in involving the private sector in training, the Secretary of Labor will appoint a "Commission on Achieving Necessary Skills". This blue ribbon panel of business, labor, and education leaders will develop national competency guidelines of work readiness that identify skills employers require and workers need on the job. While these guidelines are not intended to be mandatory, they will provide a yardstick that local schools, educators, and job training programs can use to help develop curricula that prepare students for productive work lives.

School to Work Conference.—About half of our youth go directly to work after high school graduation. For them, the transition from school to work is crucial if they are to launch their careers successfully. This spring, the Secretary of Labor will convene a School to Work National Conference of employers, unions, educators, and training professionals to review and discuss the school-to-work issue and share

effective programs. The conference may yield suggestions on how business and education can smooth this job-testing period for youth.

Family Clearinghouse.—While the human capital investment employers provide is crucial to maintaining a productive workforce, it won't be effective if employees are forced to leave the labor force because of conflicts between work and family. Assistance to workers and employers in successfully achieving the delicate balance of work and family responsibilities is being addressed by the Department of Labor. A recently established clearinghouse at the Department provides information to anyone on examples of child care models. The Department of Labor plans to expand this clearinghouse over the next year to include information on elder care, parental leave, and flexible benefit packages. This information will help employers and workers structure programs that will improve worker productivity and efficiency.

Workplace Training.—The Secretary of Labor is initiating a research and demonstration program to explore the extent to which government can promote private training efforts. The demonstration will form partnerships with industry to encourage structured training programs and build a voluntary system for accrediting workplace training programs.

Over the next decade, demographic and labor market forces will challenge U.S. firms to equip their workers with new and better skills. A slow-growing, aging workforce with many educationally disadvantaged new entrants will require lifelong learning to sustain productivity growth crucial to economic expansion and U.S. international competitiveness. Government training programs such as the Job Training Partnership Act can supplement stepped-up private efforts to close the gap between the skills American workers bring to their work and the skills needed for the increasingly complex jobs of the 1990s.

PROPOSALS FOR ENDING THE SCOURGE OF DRUGS

Efforts to enhance the Nation's human capital will be undermined unless America ends the scourge of drugs. Drug abuse diminishes human capital because it impairs the capabilities of all who are affected. It reduces productivity and economic growth. Ultimately, it can destroy the very quality of life that investment in human capital is meant to advance. A strategy for combatting drug abuse, therefore, is an essential complement to a program of investment in human capital. The next chapter describes the Administration's drug control strategy and proposals.

III.E. ENDING THE SCOURGE OF DRUGS

"... the war on drugs will be hard-won, neighborhood by neighborhood, block by block, child by child. If we fight this war as a divided nation, then the war is lost. But, if we face this evil as a nation unified, our children will have a brighter future ..." President Bush, September 5, 1989

Waging the war on drugs continues to be a high-priority concern of the Administration, the Congress, and the American people. If our investment in human capital is to yield real dividends, the negative effect of drug use must be reduced. Drug use and its associated crime, health, and social problems can offset many of the gains realized by education and job training.

For individuals addicted to drugs, the cost to themselves and their families is a tragedy. The babies of drug addicts are the most tragic example of all—innocent casualties of the Nation's drug problem.

The costs of drug use extend beyond individuals and their families, however. One study estimates that on-the-job drug use costs American businesses $60 billion a year in lost productivity and drug-related accidents. Drug-related medical expenses alone may cost tens of billions of dollars each year. No one can fully measure the lost opportunities to our society because some of its members are too caught up in drugs to make a contribution.

The 1991 Federal drug control budget totals $10.6 billion. This budget will provide $2.8 billion more outlays than the Congress enacted last year—a 41 percent increase.

While the Federal Government will continue to move forward in fighting this war, it requires a combined effort from State and local jurisdictions, as well as private employers, community organizations, and families. Many have already responded and they have made a difference. Several of the programs contained in this budget are designed to complement and encourage the continued participation of the States, cities, neighborhoods, and individuals. With each doing its part, contributing time and resources, it is a war that can be won. The Administration's drug strategy must be a truly national strategy—not just a Federal strategy.

FEDERAL DRUG PROGRAMS—STEADY HIGH GROWTH IN SPENDING

(Dollar amounts in billions)

	1981	1983	1985	1987	1989	1990	1991	Percent increase 1990–91
Budget Authority	1.4	1.9	2.6	4.6	6.3	9.5	10.6	+12%
Outlays	1.4	1.8	2.4	3.6	5.6	6.9	9.7	+41%

President Bush's National Drug Control Strategy outlines a three-pronged plan of attack against all fronts of the drug problem.

Attacking the Drug Market at the Source and on the Street.—Disrupting traffickers who distribute drugs is the major goal of this effort, through expanded aid to foreign countries where drugs originate and traffickers get their supplies, and through an effective criminal justice system in this country to deal with both sellers and illegal users.

Treating the Drug User: Supporting Those in Need of Help.—Assisting those who are using drugs to stop is critical. Treating drug abuse is

difficult and there are no guarantees, but there are many drug users who could benefit from effective treatment.

Preventing Drug Use: School, Workplace and Community Drug Prevention.—Encouraging people to not start using drugs is one of the most important investments to be made. All individuals, and especially young people, must be provided with knowledge of the dangers posed by drugs and the information necessary to reinforce their resistance to drug use.

ATTACKING THE DRUG MARKET AT THE SOURCE AND ON THE STREET

Every participant in the distribution of drugs is breaking the law—from the manufacturer to the user. The strategy's goal is a simple one—to make it as difficult as possible to buy or sell drugs in this country by reducing drug availability and deterring drug activity. The Federal Government does this in a variety of ways:

- disrupting and reducing drug production;
- interdicting drugs destined for the U.S.;
- targeting investigations on large drug trafficking networks;
- seizing the assets of drug dealers;
- investigating money laundering operations; and
- assisting State and local law enforcement agencies in their anti-narcotics efforts.

To this end, a total of $7,560 million in budget authority (a 12 percent increase) is sought for drug law enforcement.

At the Source

Most of the dangerous drugs consumed in the United States are produced in other countries. For example, virtually all of the coca leaf used to manufacture cocaine destined for this country is grown in three nations: Peru, Colombia, and Bolivia. Heroin production also takes place beyond U.S. borders. However, a quarter of all the marijuana consumed is grown in this country. A significant amount of dangerous drugs also is manufactured in clandestine U.S. labs.

Foreign drug production and trafficking threaten more than just the U.S. population. Production capacity of cocaine and heroin has grown worldwide. After flooding the U.S. market with cocaine, the drug lords began to search for new markets, and European nations are discovering that cocaine availability has increased. These same nations also have struggled with the problem of heroin for many years.

Drug production and trafficking are also problems for the source countries themselves. The profits distort already fragile economies. Few legitimate crops can compete with the prices paid for coca leaves or opium poppies. Drug exports provide these countries with much-needed foreign exchange. Some traffickers have used their drug profits to purchase arms and support terrorist activities that threaten democratic institutions in source and transit countries.

The Administration's international narcotics policy is a long-term commitment. Last year, the President approved a 5-year, $2 billion plan for the cocaine source countries—Colombia, Peru, and Bolivia. This plan greatly increases military, law enforcement, and economic assistance levels to help these countries fight the war against the cocaine industry.

The 1991 portion of the plan maintains high levels of military and law enforcement assistance and calls for an increase in economic assistance to Peru and Bolivia, if these countries meet certain performance measures in 1990 demonstrating that they are willing to take significant steps against the cocaine industry and the people who run it. The 1991 budget includes the following proposals.

- The Administration requests an increase of $175 million in economic assistance for the Andean nations to complement military and law enforcement programs begun in 1990. If the Andean countries show demonstrable progress in 1990, the total assistance package will reach $440 million in 1991.
- The Administration also plans to increase anti-drug efforts in other parts of the world. A $15 million increase is proposed for drug control programs in countries that produce marijuana and heroin, or

serve as trans-shipment points for these substances.

- The domestic production of illicit drugs will not be tolerated. In addition to other domestic law enforcement efforts, $35 million is requested for domestic marijuana eradication.
- Interdiction programs help secure our borders against illegal drugs entering the country. The $2.4 billion proposed for air, land, and maritime operations provides obstacles to drug smugglers, including seizure of illegal shipments, and can ultimately reduce the availability of drugs in the United States.

On the Street

In addition to disrupting the entry of illicit drugs and their distribution, a strong enforcement effort is necessary to deter both the sale and purchase of drugs. Increased law enforcement efforts can raise the price of drugs, reduce their availability and increase the risk of arrest for dealer and user alike. Effective law enforcement thus can reduce both drug supply and demand.

For enforcement to be a deterrent, it must be backed up by punishment that is swift and certain. The 1991 resources requested for all drug law enforcement programs, which constitute an $813 million increase over 1990 levels, will provide an expanded but balanced criminal justice system where the consequences of selling and using drugs include arrest, prosecution and punishment.

To reduce drug profits, Federal agents will continue to seize the assets of convicted drug dealers. In 1989, the Treasury and Justice Departments' seizures totalled $806 million.

Drug law enforcement proposals for 1991 include the following.

- A total of $330 million is requested for the 13 regional Organized Crime Drug Enforcement Task Forces. This represents a 54 percent increase over 1990.
- $50 million, a $25 million increase over 1990, is proposed to be targeted on high intensity drug trafficking areas.
- An estimated $238 million from seizures will be shared with State and local law enforcement agencies—their fair share of Federal seizures of drug dealers' assets.
- $700 million is requested for the Drug Enforcement Administration (DEA). The $151 million increase over 1990 represents one of the largest annual increases in the history of the agency.
- Within the DEA budget request is a 30 percent increase for State and local task forces to $42 million in 1991.
- $172 million, a $32 million increase over 1990, is requested for the FBI's anti-drug-abuse activities.
- The budget proposes $182 million for the U.S. Attorneys to prosecute drug dealers and users. This is a $45 million increase over 1990. A 30 percent increase, a total request of $201 million, for the U.S. Marshals is also proposed.
- The budget contains a $79 million increase for the Judiciary branch, for a total of $403 million, to try accused drug offenders.
- In addition to the increased Federal law enforcement presence in our cities, $492 million is requested for State and local law enforcement grants, a 10 percent increase over 1990.
- The Administration has proposed legislation to require States to adopt drug-testing programs throughout their criminal justice systems as a condition for receipt of Federal criminal justice funds.

ATTACKING THE DRUG MARKET AT THE SOURCE AND ON THE STREET

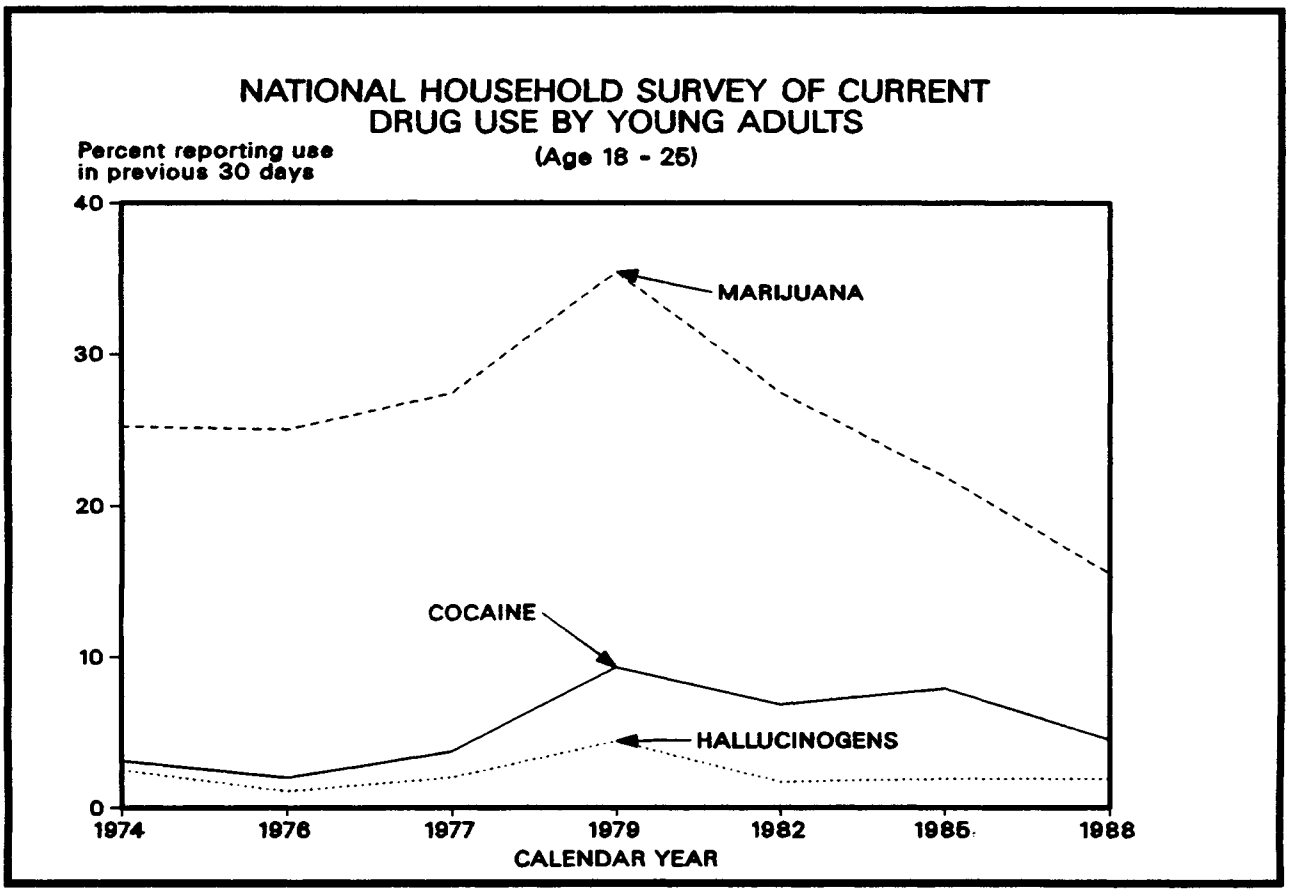
(Dollar amounts in millions)

	1990	1991	Dollar change	Percent change
Budget authority total	6,747	7,560	+813	+12
International programs	419	690	+271	+65
State and local assistance	670	810	+140	+21
Interdiction	2,029	2,373	+344	+17
Other law enforcement*	3,628	3,687	+59	* +2
Outlays total	4,898	6,849	+1,951	+40
International programs	268	417	+149	+56
State and local assistance	368	648	+280	+76
Interdiction	1,702	1,982	+280	+16
Other law enforcement	2,560	3,802	+1,242	+49

*This category includes prison funding. Prison funding declines between 1990 and 1991 because 1990 included a prison construction build-up that need not be duplicated in 1991 to reduce prison overcrowding to acceptable levels. If prison funding were stripped from the "other law enforcement" estimates, the 1990 and 1991 estimates would be $2,128 million and $2,642 million, respectively. This represents a $514 million (24 percent) increase over 1990.

TREATING THE DRUG USER: SUPPORTING THOSE IN NEED OF HELP

Illicit drug use is down, according to The National Institute on Drug Abuse's (NIDA) 1988 National Household Survey (see the following chart). Along with this good news came some bad. While overall cocaine use is down, habitual cocaine use has increased dramatically in the last 3 years. Much of this increase is attributed to the highly addictive form of cocaine, crack.



The evidence suggests that while the total number of drug users is getting smaller, those who continue to use drugs are using them more frequently and in greater quantities. As a result, the problems associated with drug use continue to grow. For example, cocaine-related medical emergencies rose over 400 percent and cocaine related deaths increased 150 percent from 1984 to 1988. Health problems associated with the use of other illegal drugs are increasing as well.

As their physical and mental health problems increase, more and more users are entering, either voluntarily or involuntarily, drug treatment programs. Drug treatment must continue to be available for those who can benefit from this assistance and users must be matched with the most appropriate programs.

Helping an individual to stop using drugs is particularly difficult, however. There is no one "cure" for drug addiction and it is not certain what types of treatment "work." A substantial investment has already been made in treatment research and more will be learned from those efforts. As new drugs and challenges continue to emerge, additional research into effective treatment methods is needed.

For 1991, the Administration requests $1,674 million for drug treatment activities, a 12 percent increase over 1990 in budget authority and a 45 percent increase in outlays.

TREATING THE DRUG USER: SUPPORTING THOSE IN NEED OF HELP

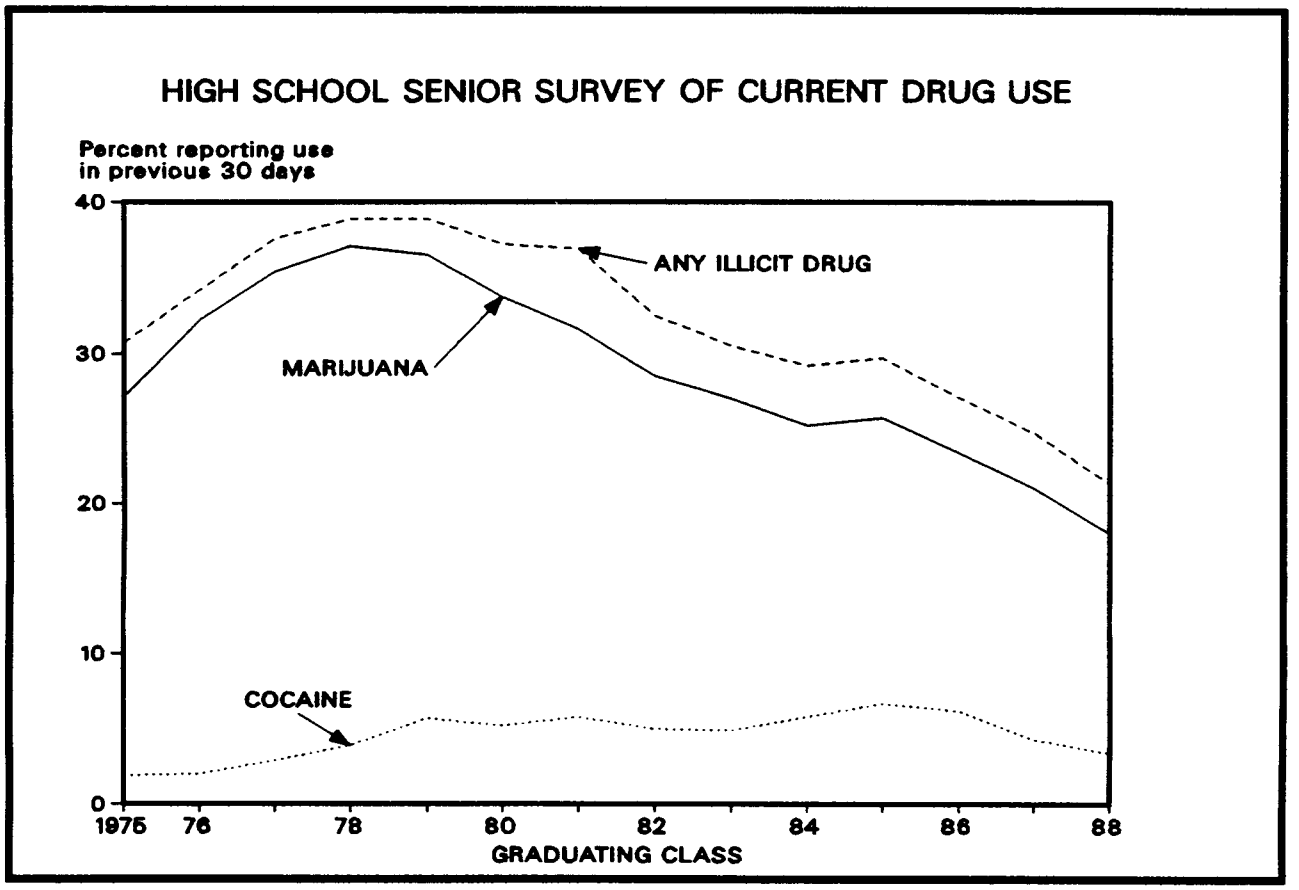
(Dollar amounts in millions)

	1990	1991	Dollar change	Percent change
Budget authority	1,490	1,674	+184	+12
Outlays	1,148	1,667	+519	+45

- The President's 1991 budget contains $760 million for Alcohol, Drug Abuse and Mental Health Administration (ADAMHA) drug treatment grants and technical assistance for the States, an increase of 11 percent over 1990.
- In addition, the Administration requests a total of $300 million for the Department of Veterans Affairs to provide drug treatment services.
- The Administration also proposes to triple assistance for the smallest victims of the drug problem, "crack babies." This $6 million increase will be targeted at crack/HIV-infected babies.
- To ensure that those seeking treatment are referred to the most appropriate program for their particular needs, the Administration has proposed legislation to require that States prepare comprehensive treatment plans prior to receiving Federal funds.
- To further the effectiveness of existing treatment programs, the Administration is proposing an increase of $30 million for treatment research and data collection by HHS.

PREVENTING DRUG ABUSE: SCHOOL, WORKPLACE AND COMMUNITY DRUG PREVENTION

The Administration has been and remains committed to an aggressive drug abuse prevention program. Potential users must be convinced never to start using drugs. Recently, based on evidence from high school seniors, it appears that fewer students are being recruited into the ranks of users. The following chart shows that reported drug use among high school seniors has been on the decline—marijuana use has been on a downward trend since 1979 and cocaine use has fallen since 1985.



The fact remains, however, that one out of every five members of the high school class of 1988 considers herself or himself to be a current user of illicit drugs. Also, the survey does not include those young people who drop out of school before their senior year. While the overall news is encouraging, much remains to be accomplished.

Reducing the number of people recruited into the ranks of drug users remains a priority. The downward trend must be maintained. In addition, particular attention must be paid to those at high risk of drug use. Programs that reach beyond the schools and into the entire community are needed. Successful drug abuse prevention is a neighborhood, employer, and family responsibility.

The Administration proposes a combination of school and community prevention programs aimed at reducing the number of individuals who start to use drugs and convincing those who have started to stop.

The 1991 budget requests an increase of 12 percent over 1990, or a total of $1,396 million in budget authority, for drug prevention and education activities.

PREVENTING DRUG ABUSE: SCHOOL, WORKPLACE AND COMMUNITY DRUG PREVENTION

(Dollar amounts in millions)

	1990	1991	Dollar change	Percent change
Budget authority	1,246	1,396	+150	+12
Outlays	827	1,178	+351	+42

- The budget includes $496 million for drug prevention programs in the Department of Health and Human Services. Many of these programs fund prevention demonstration projects and research for high-risk youth populations. Drug prevention efforts for pregnant women remain a priority.
- $593 million will fund the Education Department's Drug-Free Schools and Communities program. This represents a $54 million increase over 1990.
- Of the $150 million requested for drug programs for the Department of Housing and Urban Development, approximately $75 million will be directed at preventing drug abuse in and around housing projects.
- Federal efforts will continue to support a drug-free Federal workplace. The Administration also will propose to strengthen drug-free workplace requirements for Federal contractors and grantees.
- To help keep schools currently receiving Federal resources drug free, the President approved the Drug-Free Schools and Communities Act Amendments of 1989. Institutions of higher education and school districts will be required to certify that they have adopted and implemented programs to prevent the use of illicit drugs by students and employees.

CONCLUSION

The U.S. workforce must be drug free to continue to contribute to long-term growth and, ultimately, the Nation's standard of living. The total proposed 1991 Federal drug control budget is a coordinated and balanced $10.6 billion effort. This plan will further work toward reducing the problems of drug use on all fronts. Federal programs are just one part of the solution, however. Ending the scourge of drugs will take more than providing funds and services. Responsibility and accountability must be encouraged for individuals, families, communities, and State and local governments. Hope and opportunity for the future will depend upon a total commitment from all. Meanwhile, the Federal Government will do its share as evidenced by its $10.6 billion effort in 1991.

For further discussion of the Administration's strategy, see the *National Drug Control Strategy,* published separately.

III.F. PROTECTING THE ENVIRONMENT

Today, a consensus is emerging in our society: investments in maintaining and restoring the health of the environment can now be seen to be responsible investments in the future—if they are made with due care, thought, and foresight.

Much has changed in the 20 years since America intensified attention to its serious environmental problems. A web of basic protections to the Nation's air, water, and land has been constructed; the most egregious examples of destructive practices have been stopped; and emissions by many sources of pollution have been sharply reduced from uncontrolled levels.

Today's environmental challenges are different. America's continuing growth, and the imperative of economic expansion, require an even greater level of sophistication in protecting the environment. Understanding of the nature of environmental problems has increased; but more research is needed. The design of control strategies has improved; but even more creative solutions are needed to address the environmental challenges of the 1990s and of the next century. And while the country has indeed begun the task of addressing its national environmental problems, it has become clear that some of the most pressing environmental concerns are international in scope.

The 1990s will be a crucial decade in determining the legacy this generation leaves to future generations.

The 1991 budget includes a range of initiatives to address this new set of environmental concerns.

Substantial increases are included for programs to improve the stewardship of America's public lands and natural resources; to strengthen enforcement of existing laws; to prevent pollution at the source instead of struggling to clean up the unfortunate results; to redress the history of neglect at Federal facilities around the country; to expand understanding of environmental processes and possible response strategies; and to expand American leadership in tackling international environmental problems.

THE BUDGET PROVIDES OVER $2 BILLION IN NEW SPENDING TO PROTECT THE ENVIRONMENT

(Budget authority in millions of dollars)

Summary of Major Initiatives	1990	1991	Increase
America the Beautiful	361	630	+269
Reforestation	(—)	(175)	(+175)
Protecting America's Wetlands	372	460	+88
EPA Operating Budget	1,936	2,166	+230
Maintaining Environmental Infrastructure (DOI)	488	579	+91
Superfund	1,530	1,740	+210
Federal Facility Cleanup:			
Department of Energy	2,190	2,791	+601
Department of Defense	1,402	1,520	+118
Other Agencies	116	175	+59
Global Change Research	659	1,034	+375
Natural Resources Research	710	814	+104
Proposed Increase for Major Initiatives	—	—	[1] +2,032

[1] Total has been adjusted to eliminate double counting.

EXERCISING RESPONSIBLE STEWARDSHIP OF AMERICA'S NATURAL RESOURCES

America the Beautiful

President Theodore Roosevelt began this century by directing the Nation's attention to the protection of valuable public lands—America's treasure trove of parks, wildlife refuges, forests, and rangelands. It was Roosevelt who identified "the conservation of natural resources and their proper use" as a national problem of fundamental concern.

As the end of the century approaches, it is appropriate that its final decade be one in which conservation, enhancement, and protection of these irreplaceable national assets rises to the forefront of national concerns. The 1991 budget reflects the President's support for appropriate expansion and proper maintenance of the Nation's parks, refuges, forests, and other public lands; his determination to involve all Americans in strengthening the Nation's natural resource heritage; and his firm commitment to providing responsible stewardship of the country's natural assets for the benefit of generations to come.

The budget contains a new initiative, "America the Beautiful", that underscores these Presidential priorities. It would finance expanded land acquisition for the national parks, wildlife refuges, forests, and other public lands. It would launch a new national program of reforestation. And it would provide substantial funds for enhanced recreation, and protection and restoration of key natural resources, under a program called "Legacy '99"—a reflection of the Administration's desire to leave behind a legacy in which these natural resource assets have been restored by the end of the century. The budget supports the America the Beautiful initiative by proposing a 75 percent increase in funding for these activities above 1990 levels.

AMERICA THE BEAUTIFUL

(Budget authority in millions of dollars)

Funding Summary	1990	1991	Proposed increase
Land Acquisition	215	250	+35
Reforestation	—	175	+175
Legacy '99	146	205	+59
Total, America the Beautiful	361	630	+269

Land Acquisition.—The President believes that America's national system of parks, wildlife refuges, forests, and other public lands should be expanded and passed on in better shape than they are now.

In 1990, the Administration proposed new funds for the first time in several years for Federal acquisition of lands with particularly high value for the environment and for recreation purposes. The $215 million program to which the President and the Congress agreed will preserve these lands for public purposes and increase the value of the assets passed on to future generations.

The 1991 budget proposes to expand this program of acquiring high priority lands by creating a new America the Beautiful fund. Funds for land acquisition would be provided, as in the past, through annual appropriations from the Land and Water Conservation Fund. The America the Beautiful initiative would fund the purchase of $1 billion of key land and water resources over the next 4 years.

The America the Beautiful fund will also be able to join in partnership with private parties and State and local governments to maximize the significance of the purchases it makes and the overall value of land set aside for public purposes.

Concurrent with the submission of this budget, the Administration will propose to the Congress a priority listing of lands to be acquired by the National Park Service, the Fish and Wildlife Service, the Bureau of Land Management, and the Forest Service with the $250 million proposed for acquisition through America the Beautiful in 1991. This list has been developed through a competitive rating system, in which particular importance was placed on the extent to which a potential acquisition parcel contains valuable wetlands, is in proximity to population centers, has the potential to offer increased recreational opportunities to the public, is important for the protection of endangered species, or possesses other characteristics which make its early acquisition for public purposes of special importance. An explanation of the rating system will be provided to the Congress with the list of priority acquisitions.

Reforestation: Planting Trees for America's Future.—Recent years have witnessed growing attention to global environmental trends, a strong upsurge in the concern of the American people about the national and international environment, and an increased willingness on the part of individual Americans to take personal responsibility for their environmental future.

The 1991 budget contains funds for a major reforestation initiative which will serve both to address emergent environmental concerns and to encourage the involvement of communities, corporations, State and local governments and individuals in creating solutions. The budget proposes $175 million for the first year of a multi-year initiative with twin objectives: planting a billion trees a year on private land across America; and launching a community trees program, designed to plant another 30 million trees in communities across the country.

Trees are a remarkably valuable resource. In addition to their obvious value as the source of wood products and habitat for all manner of wildlife, trees can be a "sink" for carbon dioxide emissions—and thus can help to address any effect that increases in CO_2 emissions from human activities may have.

Trees are roughly 50 percent carbon. As they grow, trees remove carbon from the air and store it as plant tissue. A single forest tree absorbs 26 pounds of carbon dioxide (CO_2) a year, and an acre of trees can remove 2½ to nine tons of CO_2.

Trees are valuable as a source of energy conservation for homes and businesses. In the summer, the shade provided by trees can greatly reduce cooling requirements. In winter, deciduous trees allow sunlight through to a home, and closely placed, dense conifers near a home can save up to 20 percent in fuel costs.

Trees can provide forest buffer strips which reduce the flow of nutrients and pesticides associated with agricultural production into the Nation's waterways. Planting timber on certain highly erodible and marginally productive croplands can produce a higher return on those lands than many other crops.

Currently, about 3½ million acres of public and private lands are planted in trees and seedlings annually. This is up from the approximately ½ million acres of 40 years ago. Nevertheless, the U.S. experiences a net loss of about 700,000 acres of forest land per year.

Much of America's 730 million acres of forests lies on Federal and State lands or on lands owned by large, commercial forest products enterprises. The Federal government currently undertakes substantial reforestation activities on lands under its jurisdiction: last year, nearly 200 million trees were planted on National Forest lands; and another 27 million trees were planted on Department of the Interior lands, principally those managed by the Bureau of Land Management. Some of the lands enrolled in the Conservation Reserve Program (CRP) since 1986 have been forested.

But almost half of America's forest land is private land that is not used by large enterprises in the forest products industry. This private, non-industrial forest land, due to low levels of management and investment, tends to be in poor condition. Thus, reforestation and stand improvement investment on these lands

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can yield an especially high level of CO_2 sequestration and other benefits.

Most private landowners neither seek nor receive technical advice concerning timber management or reforestation practices; less than a third of those who actually harvest timber have a management plan before the harvest.

The budget includes $110 million designed primarily to improve the management and encourage the reforestation of these lands. Specifically, the government will provide cost-shared assistance through the Forest Service and State forestry agencies to encourage small lot owners to plant trees and undertake other improved practices on private non-industrial lands and marginal agricultural lands. The initiative also would provide grants to State forestry agencies to allow them to provide needed materials, direct technical assistance, and seedlings to private landowners, municipal arborists, and community groups.

The goal of the program is to achieve the planting of trees on over one and one-half million acres of private land annually, and timber stand improvement and other stewardship activities on another 180,000 acres.

The Community "Plant a Tree" Initiative.—A second promising target of reforestation assistance is community trees. These include street trees, trees in local parks, community forests, and residential trees. Available information indicates that community trees are declining in number and in health. One recent survey found that in most American cities, only one tree is planted for every four removed. Moreover, because of their location in population centers, studies indicate that community trees have up to 15 times as much value in overall reduction of CO_2 as forest trees.

Thus, a second element of the President's plan to promote reforestation, provided for in the budget, will be to assist in the creation of tree planting programs in every community in America. The President is asking every town and city, every school and university, every company and indeed every citizen to join together in planting trees for America's future.

The budget contains $30 million in funding needed to provide leadership, coordination and technical assistance to support this massive volunteer effort. In addition, the Administration will submit legislation to the Congress to establish a private, non-profit foundation to lend further leadership and help build broad-based support for planting trees in communities across the Nation.

The Foundation will be capitalized with a one-time appropriation of $35 million in funds from the community tree initiative, with which it will promote public awareness, solicit financial and non-financial support, and, most importantly, mobilize individuals, business, governments, and community organizations in cities and towns throughout America. The goal of the plant a tree initiative is to plant 30 million trees in various communities every year.

In total, the tree planting programs supported by the budget can have a substantial impact on sequestration of CO_2 emissions by the United States. Initial estimates are that the one billion trees a year envisioned in the President's reforestation initiatives could absorb 13 million tons of CO_2 per year, and thus sequester up to 5 percent of annual U.S. CO_2 emissions within 20 years. And they will help greatly to improve wildlife habitat and water and air quality, and to increase outdoor recreation opportunities.

Enhancing Recreation and Restoring Natural Resources: Legacy '99.—A third component of America the Beautiful, beyond land acquisition and reforestation, is designed to focus Federal funding and expertise on a wide range of threatened natural resource treasures and key recreational areas in need of improvement. The Department of the Interior is committed to accomplishing these improvements by the end of the decade—its 150th anniversary as a Department—and hence has designated the effort "Legacy '99."

The budget includes $205 million, an increase of 40 percent above 1990, for improved resource protection and restoration (including wetlands conservation and endangered species activities) and enhanced recreational opportunities in national parks, wildlife refuges, and other public lands. Included in Legacy '99 are funds for certain resources that are of special importance:

- $15 million for vitally needed restoration of natural water flows at Everglades National Park in Florida, as authorized by legislation signed by the President in December.
- $15 million for a new partnership to restore wetlands that serve as critical migratory bird flyways. This effort, authorized by the North American Wetlands Conservation Act also signed by the President in December, will be conducted jointly by the Department of the Interior, various State governments, the Canadian and Mexican governments, and a number of private conservation organizations. It serves as a model public-private partnership to protect the environment.
- $2 million to accelerate the acquisition of water rights from willing sellers in order to help restore the important Stillwater National Wildlife Refuge in Nevada, where thousands of birds have been dying because of a lack of clean water.

Protecting America's Wetlands

The President has endorsed a national goal of no overall net loss of wetlands. Over the coming year, the White House Domestic Policy Council Task Force on Wetlands will continue soliciting public input and working to develop a comprehensive set of recommendations to achieve that ambitious national objective. The Task Force is considering a broad range of issues, including both regulatory and non-regulatory approaches to protecting the Nation's wetlands resources.

The budget proposes an increase of $88 million, 24 percent above 1990, for wetlands research, protection, preservation, and enhancement. This follows a 32 percent increase in 1990.

FUNDING FOR WETLANDS RESEARCH, PROTECTION AND ENHANCEMENT WILL INCREASE BY 24 PERCENT

(Budget authority in millions of dollars)

Wetlands Funding	1989	1990	1991
Department of the Interior	95	122	[1] 155
Department of Agriculture	49	83	97
Environmental Protection Agency	9	12	21
Army Corps of Engineers	109	130	159
National Oceanic and Atmospheric Administration	19	25	28
Total	281	372	460

[1] Includes about $100 million categorized as part of America the Beautiful.

Managing America's National Forests

Next year will mark the centennial anniversary of the establishment of America's first National Forest, the Shoshone National Forest in Wyoming. Today, the National Forest system encompasses 191 million acres spread over 42 States—some 10 percent of the United States land mass.

The centennial anniversary provides an excellent impetus for consideration of ways to improve the management of this invaluable national resource. The national forests are the source of billions of board feet of timber harvest each year (estimated at over 11 billion in 1990), generating both many thousands of jobs and an array of forest products for both the domestic and export markets. Receipts from timber sales from national forests provide

funding for roads and schools that local governments might otherwise be unable to afford.

In addition to their scenic beauty, the national forests provide recreational opportunities for millions of Americans, they enhance water quality and protect watersheds, and they provide habitat for wildlife—including one-third of all listed threatened and endangered species. For this reason, the national forests have been called "temples of biological diversity."

Managing the national forests to protect and maximize these multiple benefits is a great challenge. Because of the extensive preparations and management of sales required of the Forest Service, including, in some cases, the construction of roads into remote and often steep back country, receipts from certain timber sales do not equal the costs incurred by the Forest Service in managing the sale. Such "below cost" timber sales occurred on 74 of the 120 national forests last year.

The Administration is committed to achieving a careful balance in the management of America's national forests—protecting jobs and promoting the export of American products, while at the same time preserving the forests' ability to serve as havens for biological diversity, outlets for recreational opportunities, and repositories of many other important functions.

The Forest Service proposes a timber sale level of 10.6 billion board feet for 1991, a level consistent with previous plans that recognizes constraints placed on the program by the Congress.

At the same time, recreation demand has been the fastest growing of all demands placed on many National Forests. This is true in certain forests where the timber program has operated at a loss.

The 1991 budget attempts to recognize this new reality. The budget proposes to eliminate the below cost timber program on selected test forests in which other opportunities exist. The nine forests which will be the subject of this demonstration program all are intended to test the impacts of eliminating below-cost sales where forests are in reasonable proximity to population centers, have experienced rapidly increasing demand for recreation, and are able to support economic activity other than logging (e.g., the communities in which they are located are not entirely dependent on timber and have the ability to diversify.)

The budget also proposes to increase the recreation receipts available to communities in these forests to maximize their ability to benefit from increased demand for hunting, fishing, camping, hiking, and other outdoor recreation activities. The budget provides $10 million to improve recreation facilities in these forests.

This year's budget for the Forest Service also differs from recent budget submissions in two important respects. The Administration is not re-proposing the change in the method of calculating timber and mineral receipts which had the effect of reducing funds that are shared with State and local governments and used to finance local schools and roads.

In addition, previous budgets had proposed to lift the prohibition on the export of raw logs taken from Federal lands, thereby increasing demand for and production of logs. The Administration has revised its estimates of the receipts generated by lifting this prohibition, and recognizes the adverse environmental impact which would result from its repeal. Therefore, the Administration is no longer proposing to repeal the prohibition on such log exports.

Mitigating the Environmental Effects of Water Resources Development

There has been much debate concerning the adverse environmental impacts of certain large water resources development projects constructed over the years by the Army Corps of Engineers and the Bureau of Reclamation. In recent years, the Corps and Bureau have become far more sophisticated in reducing these effects in the design and execution of projects. Nevertheless, substantial impacts remain, particularly as the result of some of the larger projects constructed in the past. The budget contains funding that is almost triple 1990 levels to help address some of these impacts.

MITIGATING ENVIRONMENTAL EFFECTS OF WATER RESOURCES PROJECTS

(Budget authority in millions of dollars)

	1990	1991	Proposed change
Army Corps of Engineers:			
Columbia River Juvenile Fish Migration	10	16	+6
Tennessee-Tombigbee Mitigation	—	20	+20
Other Environmental Mitigation Projects	14	27	+13
Total	24	63	+39

The budget proposes $16 million for the construction of juvenile fish passage facilities on the Columbia and Snake Rivers in Washington, Oregon, and Idaho. Currently, millions of salmon are lost each year as they try to swim past power facilities built along these rivers. The budget will allow the Corps of Engineers to proceed with fish bypass facilities at four of its major hydroelectric dams on these rivers. In addition, the budget provides funds for a detailed mitigation analysis at the Corps' hydropower facilities on the mainstem of these two rivers.

The budget provides $20 million to begin the acquisition of 88,000 acres needed to mitigate environmental losses caused by the construction of the Tennessee-Tombigbee Waterway Project in Alabama and Mississippi. An estimated 47,000 acres will be acquired with the funds proposed for 1991.

The budget also proposes funding for mitigation preconstruction engineering and design work at several other previously completed Corps projects, including Richard B. Russell Lake in South Carolina and Georgia; and the Missouri River Navigation project in Iowa, Nebraska, Kansas, and Missouri.

Consistent with the Bureau of Reclamation's new direction, the budget places increased emphasis on environmental restoration and enhancement, including wetlands, fisheries, and water quality, non-structural solutions to water resources problems, and improved management and operation of existing facilities.

In addition, the budget proposes termination of certain projects in the Bureau of Reclamation, including the Garrison Diversion Unit in North Dakota, an uneconomic and environmentally destructive project which would require in excess of $1 billion to complete.

Developing Energy Resources in An Environmentally Sound Manner

Last February, the President announced the postponement of oil and gas leasing in three environmentally sensitive areas on the Outer Continental Shelf off the coasts of Florida and California. The President appointed an interagency Task Force to investigate environmental concerns surrounding the sales—Lease Sales 95 and 91 off California, and Lease Sale 116 off Florida—and to report to him.

The Task Force held several meetings and public hearings around the country, and forwarded a report on these lease sales to the President in early January. Pending the decision by the President on whether to proceed with leasing in these areas, receipts from these lease sales have not been incorporated into the receipt estimates of the budget. A decision by the President is expected shortly.

PROVIDING THE TOOLS FOR EFFECTIVE POLLUTION CONTROL

Increasing EPA's Operating Budget

The creation of the Environmental Protection Agency was an outgrowth of America's environmental awakening 20 years ago. Today, it is one of the most important and largest regulatory agencies in the government.

The budget contains major increases to strengthen EPA's capacity to implement new programs, strictly enforce environmental laws, expand its research programs, and assist the States in carrying out environmental programs.

The 12 percent increase requested for the EPA is one of the largest requested for the operating program of any agency in the government. Funds provided in the budget would bring the increase in total EPA staffing levels since the beginning of the Administration to 1,630, an 11 percent increase.

EPA'S OPERATING BUDGET WILL GROW BY 12 PERCENT

(Budget authority in millions of dollars)

	1990	1991	Increase
Implementing Clean Air Act changes	—	82	+82
Enforcing Environmental Laws	141	192	+51
Protecting Critical Habitats	72	95	+23
Expanding Research	345	377	+32
Improving States' Ability to Carry Out Environmental Responsibilities	387	456	+69
Other Operating Programs	991	964	−27
Total EPA Operating Program	1,936	2,166	+230

Implementing Clean Air Act Changes

An increase of over $80 million is requested to enable the Agency to implement the ambitious new proposals for revising the Clean Air Act proposed by the President last year. The EPA will use these funds to hire 245 new staff to administer the Administration's proposed emissions trading plan, streamline the permitting process, strengthen enforcement, and improve the Agency's ability to monitor emissions from various sources.

One of the cornerstones of the President's proposed package is the harnessing to the greatest extent possible of market forces in the protection of the environment. That principle lay beneath the proposal for an emissions trading scheme to allow the ambitious amount of pollution reduction called for in the legislation to be achieved in the most cost-effective manner possible.

Enforcing Environmental Laws

The need for government involvement in environmental protection, however, arises in part from market failures—the failure of markets, for example, to capture in product prices the full social cost of disposal of waste products or of pollution of public goods like air and water. Therefore, some of the increased resources proposed for EPA's operating program will be designed to address these market failures.

Specifically, the budget calls for a 36 percent increase in EPA's enforcement budget. This will enable EPA to redouble its efforts to ensure that responsible parties pay for cleaning up the pollution they create. The increase

would allow for the addition of 292 enforcement personnel in 1991.

Preventing Pollution at the Source

The President will send to the Congress a legislative package of pollution prevention initiatives. They will include a demonstration program to allow modifications of existing statutory and regulatory requirements for generators of waste who can show that they can achieve greater protection of human health and the environment through pollution prevention and waste minimization efforts than through traditional approaches.

In addition, the budget will accelerate the government's investment in pollution prevention that is not cost-effective for any individual firm to undertake. In terms of the overall cost imposed on society by pollution, it clearly makes more sense to minimize waste and prevent pollution at the source than to pay the far greater cost of cleaning up problems after they exist.

Protecting Critical Habitats

The budget provides $95 million, an increase of 32 percent, for EPA's critical habitat programs, which seek to address pollution problems in the Nation's wetlands, estuaries, and near-coastal waters. In 1991 EPA will pay particular attention to implementing recommendations of the Domestic Policy Council's Task Force on Wetlands and to helping States develop strategies, in coordination with the National Oceanic and Atmospheric Administration and other Departments, for protecting the Nation's coastal areas.

Promoting Recycling: A National Imperative

America faces a solid waste disposal crisis. Scores of landfills across the country are out of compliance with national and State environmental laws, and pose a danger to the health and safety of nearby citizens. Yet Americans continue to generate more waste per capita than citizens of any other nation.

The Administration believes that all safe alternatives to managing municipal solid waste must be pursued simultaneously: the development and siting of environmentally sound landfills, the construction of resource recovery facilities, and recycling and waste minimization to reduce the waste stream.

Last year, the EPA issued regulations that will spur government procurement of recycled paper and other items. Not only the Federal government but all entities which receive Federal funds must develop an action plan to procure items made from recycled materials.

The Administration has previously endorsed a goal of reducing the waste stream by 25 percent by 1992. This year, the Administration will propose legislation to help achieve that goal.

Revitalizing the Council on Environmental Quality

The Council on Environmental Quality (CEQ) was created 20 years ago with the passage of the National Environmental Policy Act (NEPA). Its mission is a vital one: to ensure that Federal policies are consistent with the intent of the act, to provide coordination among agencies on key issues such as wetlands and global climate change, and to report to the Nation on the state of the environment and related indicators.

THE BUDGET FOR CEQ WILL NEARLY DOUBLE

(Budget authority in millions of dollars)

	1990	1991	Increase
Council on Environmental Quality....	1.46	[1] 2.78	+1.32

[1] Includes President's Environmental Education Awards.

The President is committed to strengthening the CEQ, and to ensuring that it has the capacity to serve as an effective source of environmental analysis and information in the White House. Accordingly, the budget includes an increase of 90 percent in the CEQ's budget for 1991.

Promoting Environmental Education: The President's Awards

The budget includes a new initiative, to be administered by the CEQ, which is designed to stimulate the introduction of environmental education into elementary and secondary school curriculums and to reward excellent teachers. In 1991, the President will present a cash award of $5,000 to the 100 teachers—2 in each State—who design and implement the most innovative and effective programs to teach students about the environment.

Maintaining Environmental Infrastructure (Department of the Interior)

In addition to funding increases for natural resource protection and recreation enhancement programs under the Legacy '99 component of America the Beautiful, the budget proposes a $91 million expansion of the maintenance and rehabilitation efforts by the Department of the Interior that preserve the basic infrastructure of America's national parks, wildlife refuges, and other public lands. This is the Department's own, complementary part of Legacy '99, and represents a 19 percent increase above 1990.

Proper care of infrastructure is critical to effective protection of natural resources and to the safety and enjoyment of visitors to Federal areas. The proposed increase will be used for the following purposes:

- to improve day-to-day operating maintenance of Interior facilities such as visitor centers, campgrounds, roads, boat ramps, administrative headquarters, and employee housing;
- to expand Interior's program of cyclic maintenance, repair, and rehabilitation construction projects to upgrade infrastructure on a periodic basis, and to prevent long term deterioration that could threaten public safety and ultimately increase costs to the Federal taxpayer; and
- to accelerate the evaluation and repair of potentially hazardous dams on Interior lands in order to protect life, property, and natural resources downstream.

MAINTAINING ENVIRONMENTAL INFRASTRUCTURE—DEPARTMENT OF THE INTERIOR

(Budget authority in millions of dollars)

	1990	1991	Proposed change
Operational Maintenance	244	274	+30
Cyclic Maintenance/Repair and Rehabilitation	129	141	+12
Rehabilitation Construction	51	56	+5
Dam Safety	64	108	+44
Total	488	579	+91

CLEANING UP HAZARDOUS WASTES

Accelerating the Pace of Superfund Cleanups

The President is committed to an aggressive program of cleaning up hazardous waste sites in order to protect the public health. One of his first acts in office was to order an intensive management review of the Superfund program to improve its effectiveness. Upon completion of that review, EPA's Superfund staff was increased by 500 with a special emphasis on enforcement in order to ensure that polluters pay for cleanups to the maximum extent possible.

In 1990, the President requested an increase of $300 million for Superfund in order to pursue a more ambitious schedule for cleaning up abandoned hazardous waste sites. Congress cut the increase by almost two-thirds, to $105 million. This will have the unfortunate effect of delaying cleanups.

The President is again requesting a major increase for Superfund in order to accelerate the pace of cleanups. The Superfund program has rightly been criticized in the past for devoting too many resources to ancillary activities; for this reason, the President's requested increase of over $200 million for 1991 is targeted specifically to cleanups. If this increase is approved, in addition to work ongoing at hundreds of sites around the country, long-term cleanups at 16 new sites can be started in 1991; without it, no additional cleanups may start.

Cleaning Up Federal Facilities

Unfortunately, it is not only irresponsible or uninformed private parties who have left behind a legacy of hazardous wastes that need attention. For over 40 years, the Federal government has failed to manage adequately and dispose of properly the wastes that it generates at various sites around the country. The result is a startling array of expensive problems which must be attended to. These problems are discussed in more depth in Part VI-C, "Cleaning Up Federal Facilities."

The budget demonstrates the President's commitment to addressing the problems posed by these wastes responsibly and expeditiously by proposing an increase of almost $800 million, or 21 percent, above 1990 levels for Federal facility cleanup efforts.

CLEANING UP FEDERAL FACILITIES

(Budget authority in millions of dollars)

	1990	1991	Increase
Department of Energy	2,190	2,791	+601
Department of Defense	1,402	1,520	+118
Four other agencies	116	175	+59
Total	3,708	4,486	+778

LAYING THE GROUNDWORK FOR A CLEANER, SAFER FUTURE

Addressing the Problem of Global Climate Change

In the Administration's first year, the United States has taken a leadership position in addressing the question of global climate change.

A number of policy initiatives undertaken by the President which have merit for other reasons will also have the effect of helping to reduce emissions of carbon dioxide and other gases which are building up in the atmosphere and stimulating concern about potential climatic changes.

The President's proposed revisions to the Clean Air Act, for example—by placing a per-

manent cap on sulfur dioxide emissions and allowing utilities freedom of choice in how to achieve reductions required to meet the capped level—provides a strong incentive for energy conservation that estimates suggest will yield a reduction of several percent in the annual emissions of carbon dioxide from the American electric utility sector. Reductions in volatile organic compounds (VOCs), carbon monoxide, and nitrogen oxides (NOX) will also be beneficial since these compounds are chemically involved in producing greenhouse gases in the atmosphere.

In the past year, the President announced American support for a worldwide phaseout of chloroflourocarbon (CFC) production to the extent safe substitutes are available. And he took the American commitment to reducing CFCs a step further by signing into law legislation first proposed in the 1990 budget which will place a fee on CFC production and will have the effect, according to some estimates, of reducing American CFC emissions even below the levels allowed by international protocols.

The Department of Energy this year issued new appliance standards which will help to conserve energy, and is now preparing a National Energy Strategy (NES) which will also address the role of energy conservation in America's future.

The Administration approved an increase in the corporate average fuel economy (CAFE) standard for automobiles which, while improving America's energy security, will have the added benefit of reducing CO_2 emissions.

And this budget includes a major new reforestation initiative, described above, which has the potential to sequester significant amounts of U.S. CO_2 emissions.

The area in which U.S. leadership in addressing global climate change questions is perhaps most evident, however, is in advancing the state of scientific knowledge of Earth processes.

The budget contains over $1 billion, an increase of 57 percent over 1990 levels, for the U.S. Global Change Research Program, an interagency research effort designed to improve scientific understanding and predictive capability on global change issues. This increase will allow NASA to proceed with its "Mission to Planet Earth", and provides for the launch of the first U.S. Earth Observing System (EOS) platform in 1998 as part of that mission.

THE BUDGET INVESTS $1 BILLION IN GLOBAL CHANGE RESEARCH

(Budget authority dollar amounts in millions)

	1990	1991	Dollar change	Percent change
U.S. Global Change Research Program	659	1,034	+375	+57%
By Agency:				
National Aeronautics and Space Administration	489	661	+172	+35%
National Science Foundation	55	103	+48	+87%
Department of Energy	50	66	+16	+32%
Department of Agriculture	21	47	+26	+124%
Department of Commerce (NOAA)	18	87	+69	+383%
Department of the Interior	13	44	+31	+238%
Environmental Protection Agency	13	26	+13	+100%
Total	659	1,034	+375	+57%

The program is discussed at greater length in the chapter on "Enhancing Research and Development." This billion dollar global change research effort places the United States in the pre-eminent international position in advancing the state of knowledge about these critically important but imperfectly understood phenomena.

The President believes that continuing this scientific leadership is an essential United States responsibility, and that such leadership can help improve the quality of the policy decisions made in response to global environmental trends. In the coming year, the United States will host the Plenary Session of the Intergovernmental Panel on Climate Change (IPCC) in February; a meeting of the world's top economic, scientific, and environmental officials to discuss ways to improve the analytic ability to understand and respond to these issues in the spring; and the first negotiation session of the Framework Convention on climate change in the late fall. These and other meetings will provide the opportunity for continuing American leadership in addressing global change issues.

Encouraging the Development of Solar and Renewable Energy Sources

One of the great challenges of the 1990s will be to provide the American people with ample supplies of secure, competitively priced energy while protecting the environment. The Administration is committed to expanding American knowledge of emerging technologies in solar and renewable energy, and in developing the most effective conservation technologies, in order to help accomplish these twin goals.

The budget contains significant increases for new research and development initiatives in solar and renewable energy and energy conservation. The 1991 budget requests about $360 million for these activities—a sharp increase over the $208 million requested in the 1990 budget, and about 10 percent above 1990 enacted levels.

A 30 percent increase above 1990 spending is requested to advance the state of knowledge about solar thermal technologies, including high-photo solar detoxicification of chemical wastes.

The budget provides over $43 million for solar photovoltaics research, and proposes the establishment of a new cooperative venture with industry to improve photovoltaic process or manufacturing technologies, in order to lower costs and accelerate the commercial introduction of this environmentally clean source of energy. Increased industry participation in the photovoltaic research and development program can improve the quality and usefulness of the R&D work—while at the same time lowering Federal costs by encouraging cost-sharing with industrial research consortia or individual companies.

For renewable energy research, the budget requests $28 million—an increase of $12 million above 1990—for biofuels. The majority of the increase will be devoted to new research initiatives in ethanol fuels and the development of energy from municipal waste.

Promoting Energy Conservation

The 1991 budget request of $182 million for energy conservation research represents a near doubling of the amount requested in the 1990 budget. Much of the increase is for buildings-related research and development—including new initiatives to accelerate the development of building conservation standards, and to replace lighting in Federal facilities with more efficient equipment.

Investing in Agricultural Research to Protect the Environment

The budget contains an increase of over $100 million in research activities related to protecting natural resources. Of particular note is a $28 million increase devoted to the Department of Agriculture's efforts to better understand the causal linkage between production practices and water quality degradation.

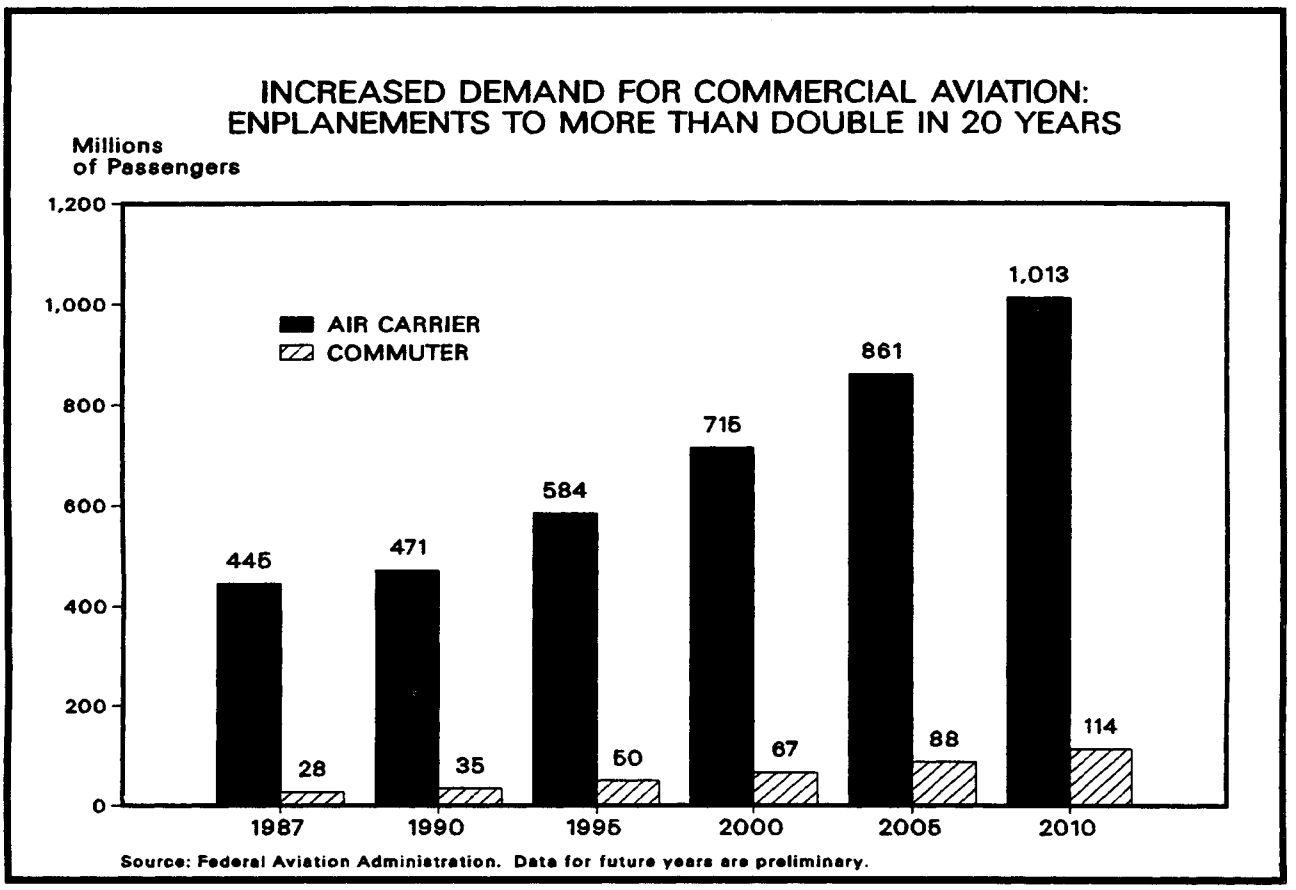
Protection of the Nation's water resources from contamination by agricultural chemicals and nutrients is a key priority of the Administration. The budget funds the second year of a Water Quality Initiative proposed by the President to promote the development and adoption of environmentally sensitive farm production practices and of safer chemical and biological pest controls. In total, the budget provides over $300 million for this purpose.

Ultimately, farmers must be responsible for changing production practices to avoid contaminating ground and surface waters. Federal and State governments can provide valuable information and technical assistance to producers, however, so that such environmentally sensitive techniques can be implemented at minimum cost. The proposed increase will allow the Soil Conservation and Extension Services to expand their efforts to transfer to farmers scientifically-based knowledge about the vulnerability of natural resources to chemical pollution. Demonstration projects targeted to particularly environmentally-sensitive geographic regions will receive the highest priority.

III.G. IMPROVING THE TRANSPORTATION INFRASTRUCTURE

Investment in the Nation's transportation system is vital for continued economic growth. Transportation plays a major role in producing almost every good Americans buy. The Nation's transportation system handles 3.4 trillion ton-miles of freight and 3.5 trillion passenger-miles each year. While most of this travel is on highways, an ever growing portion is carried by aviation.

As the economy and population grow, so will demand for transportation services. More jobs, more shipped goods, and higher incomes will result in a greater demand for travel services. Americans are expected to become even more mobile, with intercity automobile traffic growth estimated at about 3 percent annually. Airline passenger travel is estimated to grow even faster, at more than 4 percent annually.



Responding to Infrastructure Needs and Congestion

Failure to respond to increased travel demands would lead the transportation infrastructure to become increasingly more obsolete and congested. For example, many parts of the current aviation infrastructure need to be modernized and expanded. The national airspace system is a patchwork of several generations' worth of equipment, some of which is labor intensive, becoming technologically obsolete and lacking the flexibility needed to handle burgeoning air traffic.

Passenger enplanements in the U.S. have increased about 74 percent since 1978. Currently 21 major airports, mostly large hubs, are considered seriously congested. These airports account for 57 percent of all passenger enplanements. From 1990 to the year 2010, the number of airline passengers is expected to more than double. Without capacity improvements or changes in the time and location of travel, 67 airports and 88 percent of all passengers could experience significant delays due to congestion by the end of this decade.

Similarly, existing highway systems in many metropolitan areas do not serve current traffic flows well. Beltways, originally constructed to move traffic around central cities, have become congested suburb-to-suburb routes. The length of the "rush hour" is becoming longer in most large urban areas, and the number of urban areas experiencing congestion is increasing.

RENEWING THE TRANSPORTATION PARTNERSHIP

The Federal Government is a partner with State and local governments and the private sector in providing for much of the Nation's transportation system.

For highways, the Federal Government has historically played a major role in the development of the Interstate System, which is critical to national defense and interstate commerce inasmuch as it carries over 20 percent of all highway traffic. One manifestation of that leading role has been that the Federal Government finances 90 percent of the construction of the Interstate System. In roads serving intrastate and regional traffic, there is far more of a State and local role and responsibility.

In mass transit, the Federal Government has provided funds to help ensure that the existing transit infrastructure is maintained. The U.S. railroad industry has made a dramatic turnaround after years of decline. In 1989, for the first time, two of the Nation's 16 largest railroads earned a sufficient return on capital to be considered revenue adequate under Interstate Commerce Commission standards.

In aviation, the Administration will continue to work with airlines, airport operators, and State and local governments to assure the flying public of a safe and efficient aviation system. For 1991, the Administration is proposing a 5-year aviation reauthorization that reflects this commitment and provides necessary funding to modernize and expand the aviation infrastructure. This is the cornerstone of the 1991 budget proposal for improving the transportation infrastructure.

MODERNIZING THE AVIATION SYSTEM

Significant investment is necessary to ensure that the aviation system continues to be safe, efficient, and reliable.

THE FEDERAL COMMITMENT TO THE FLYING PUBLIC

(In million of dollars)

	1990	1991	Dollar Change	Percent Change
Budget Authority	7,366	8,578	+1,212	+16
Outlays	6,468	7,221	+753	+12

The President is proposing a total of $8.6 billion, a 16 percent increase, for aviation programs in 1991. As part of his multi-year plan, the President proposes to continue modernization of aviation facilities and equipment and to expand airport capacity, as well as increasing funding for operations and R&D.

Keeping the Skies Safe and Secure

The Administration is requesting $4.1 billion, a $264 million or 7 percent increase over 1990, for the Federal Aviation Administration's (FAA) operations, including the air traffic control system and FAA's programs to ensure safety and security in aviation. This level of funding will add almost 500 air traffic controllers, 300 safety inspectors, and more security specialists over estimated 1990 levels. Additional staff are needed because of projected increases in aviation activity and because of the aging of the aircraft fleet. The staffing increases will result in the largest air traffic control workforce in the history of the FAA and more than double the staff devoted to detecting the problems of aging aircraft.

The budget also includes $190 million, a $20 million or 12 percent increase over 1990, for aviation research and development. This funding will continue research in the critical area of metal fatigue and corrosion to detect problems with aging aircraft. It will provide for the creation of an explosives detection laboratory that will improve devices used to detect explosives in checked and carry-on baggage. The research budget will develop new ways to prevent in-flight fires and to minimize injuries when fires occur.

Completing the National Airspace System Plan

The current airspace system needs to be updated and expanded. The National Airspace System (NAS) Plan was developed in the early 1980s as a blueprint to modernize and consolidate air traffic control facilities for greater operating efficiency and safety. Now that research and design is complete, nearly all of the NAS Plan's original projects are under contract, and new systems are already installed and working.

The President's 1991 budget continues this modernization of the national airspace system by increasing funding for FAA facilities and equipment by $779 million or 45 percent over 1990.

THE COMMITMENT TO MODERNIZE EQUIPMENT

(In million of dollars)

	1990	1991	Dollar Change	Percent Change
Budget Authority	1,721	2,500	+779	+45
Outlays	1,188	1,579	+391	+33

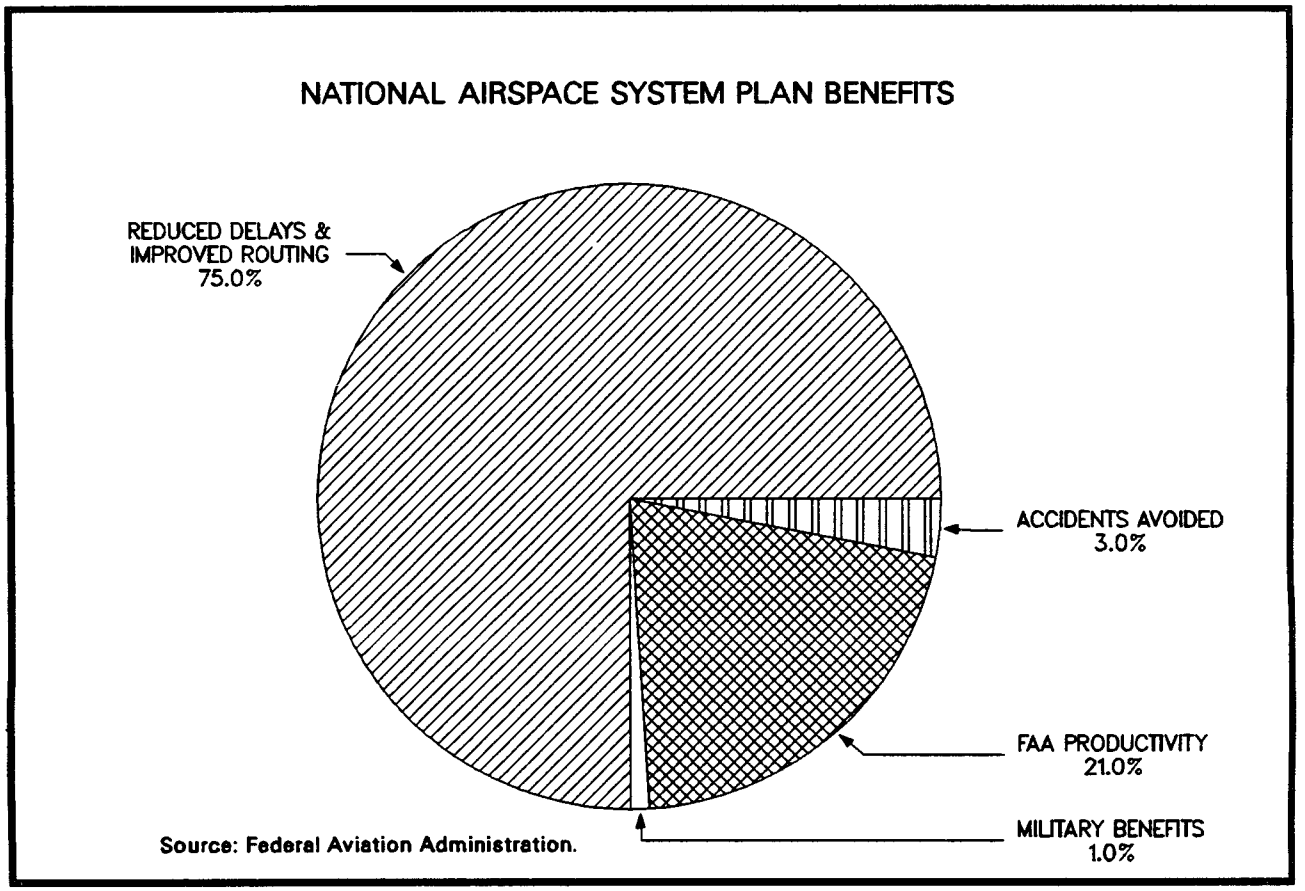
The modernization projects include:

- Computer software and hardware that will improve computer speed, capacity, and reliability to reduce delays;
- Radars and radar displays that will improve an air traffic controller's ability to "see" aircraft and keep them safely separated;
- Communications equipment to replace antiquated switching systems with modern solid-state technology;
- Weather tracking system modernization that will detect dangerous windshear conditions and warn aircraft away from violent storms; and

- Navigational aids to improve the routing of aircraft through the airspace system and to make it safer for aircraft to land during bad weather.

Reaping the Benefits of Modernization

The benefits of modernizing the system can be measured by such means as the value of hours saved by airline passengers. It is estimated that more than $114 billion in benefits will be derived from the NAS Plan. The largest single recipient of benefits will be users of the system, including passengers and airlines. Some $86 billion in user benefits will be gained by reducing airline delays and improving the routing of aircraft. The FAA itself will realize benefits from improving air traffic controller productivity through the use of better equipment and by reducing maintenance requirements. There will also be some $4 billion in safety benefits by reducing the number of accidents through improved weather-related equipment.



Expanding Airport Capacity

Unless action is taken, capacity problems at the Nation's airports will increase as airline travel continues to grow. Delays at airports will increase unless additional airport capacity is added or travel patterns shift to less congested hubs or times of the day. Some estimates show the current cost of delays to the economy and to passengers is $5 billion annually.

The President's budget proposes a comprehensive program for expanding airport capacity by increasing Federal funding, removing Federal restrictions on local airports' ability to raise revenue, and encouraging more public/

private projects. These three aspects are summarized below.

Increasing Federal Funding for Capacity Projects.—The President's budget provides $1.5 billion in new 1991 spending for Federal airport grants, a $75 million increase over 1990. This amount will fund formula-driven grants for airport development projects at large commercial airports, as well as grants to States to improve smaller airports. It will also fund almost a 60 percent increase in discretionary grants to target high-priority capacity expansion projects.

The Administration proposes to continue the special pool of funds for capacity projects. This pool increases funding for critical airport capacity projects, including building new runways, expanding current ones, purchasing land for new runways, or building entirely new airports.

Removing Federal Restrictions.—The Administration proposes to remove an existing statutory restriction that prevents airports from raising certain revenue—namely, by levying passenger facility charges (PFCs). A PFC is a charge levied on departing passengers by airports for the use of aviation facilities. PFCs are common in other countries, being levied in 138 nations.

Currently, airports receive funds from a variety of sources: renting airport space to airlines and other tenants, aircraft landing fees, revenue bonds, state and local assistance, and Federal aid for construction projects. For airport construction projects, most large and medium size airports primarily use revenue bonds, while smaller airports generally rely on Federal airport grants.

However, there are limits to dependence on revenue bonds. Airports' ability to raise new capital from bonds is limited due to the large debt burden some have accumulated. Continued expansion of capacity requires additional revenue sources.

Some estimates show PFCs could generate about $1 billion per year for U.S. airports. This would provide a new, stable source of additional revenue for airport development. PFCs would have a great potential at hub airports. A recent survey showed that a $3 PFC would account for between 5 and 30 percent of revenue at hubs.

Another advantage of PFCs is that, under the Administration's proposal, they would free a large portion of Federal airport grant funds for capacity expansion projects. Airports collecting PFCs would forgo a portion of their formula-driven Federal grant funds. Instead, these funds would be allocated to capacity expansion projects and to smaller airports that would not benefit from a PFC.

Encouraging More Public/Private Projects.—The Administration is encouraging more public/private airport projects as another way to build capacity. For example, Alliance Airport, owned by the City of Fort Worth, is being built on 418 acres donated by private developers. State and local funds, in addition to grants from the Federal Government, have been committed toward the $250 million financing package needed to open the airport.

In addition, the Administration is exploring other ways to increase existing capacity. One such way is for airports to experiment with "peak period" pricing to manage demand more efficiently in tandem with airline efforts to schedule peak-period flights more effectively. Other ways to increase capacity include improving air traffic procedures, increasing use by airlines of larger aircraft, and encouraging general aviation aircraft to use smaller, reliever airports.

Financing the Aviation System

The aviation system has traditionally been financed in part through user fees deposited in the aviation trust fund. In this way the aviation user is a partner in financing a safe and efficient system. However, aviation users have not been financing their share of the system's costs. For example, a 1989 Congressional Budget Office report pointed out that "... private sector users of the aviation system have received more in capital and operating spending than they have paid in taxes."

As noted previously, the 1991 budget provides major increases for expanded airport capacity, modernizing air traffic control equipment, and hiring more air traffic controllers. To provide the necessary funding increases and to continue the principle of user financing,

the Administration proposes to increase aviation user fees accordingly. The passenger ticket fee would be raised from 8 to 10 percent and other aviation fees would be raised similarly.

Federal Government spending on FAA programs has far exceeded aviation receipts since the inception of the aviation trust fund. As seen in the table below, outlays for FAA programs have exceeded aviation receipts for the past ten years (and by over $2 billion a year since 1986).

SPENDING FOR AVIATION EXCEEDS RECEIPTS

(In billions of dollars)

	1980	1982	1984	1986	1988	1990 Estimated	Proposed 1991
FAA Outlays	3.1	2.9	3.8	4.7	5.2	6.5	7.2
FAA User Fees	1.9	1.2	2.5	2.7	3.2	3.9	4.9

Together with increased user fee collections, the budget proposes to "spend down" the current level of balances in the Airport and Airway Trust Fund. The uncommitted balances would decline from $7.6 billion at the end of 1990 to $3.0 billion at the end of 1995. The Administration believes that users of the aviation system should finance their share of aviation spending. This includes not only equipment modernization, research, and airport grants, but also the salaries of air traffic controllers and the other staff that help to keep flying safe and secure.

IMPROVING THE NATION'S HIGHWAYS

Deteriorating highways and bridges are widely perceived as an infrastructure problem. In addition, rush hour traffic in metropolitan areas clearly indicates capacity problems. In 1987, all units of government generated $66.3 billion for highway capital improvements, operations and maintenance, law enforcement and safety, administration, interest and debt retirement. Of this sum, $14.5 billion or 22 percent was Federal.

Federal highway spending has increased in the past decade. Outlays for Federal-aid highways have grown by about 55 percent since 1981, from $8.8 billion in 1981 to $13.7 billion in 1991. This increase has funded the continued construction of the Interstate System, which is now 98 percent complete, and a renewed emphasis on maintaining the physical condition of existing roads.

Preserving the Highway Infrastructure and Meeting Demand

The Nation's highways and bridges must be maintained. While the physical conditions on the Interstate System and other highways important to interstate travel deteriorated prior to 1982, that pattern has largely been reversed, mainly due to the influx of funds from the 1982 Federal gas tax increase.

Capacity is also a critical aspect of highway mobility. For the last two decades, highway travel has grown steadily, leading to increased congestion, particularly in large urban areas. In 1987, 65 percent of urban Interstate rush-hour travel and 17 percent of rural Interstate rush-hour travel occurred under congested conditions. Much of this congestion is of local concern and can be addressed at the local level.

For 1991, the President's budget provides Federal-aid highway funding to cover the Federal share of the cost to maintain the physical condition of bridges and highways of national

importance and to continue completion of the Interstate System. Under the 1991 budget proposal, the Federal government would be spending more out of the highway portion of the Highway Trust Fund than it is collecting in user fee receipts.

The Federal-aid highway program is authorized through 1991. During the coming year, the Federal government will work with its partners—States, local governments and the private sector—to address the projected needs for highways (and mass transit). The Administration will present its proposals in the context of legislation to reauthorize these programs, which require reauthorization for 1992 and beyond.

Considering Innovative Solutions To Meet Tomorrow's Needs

Highway capacity needs cannot be met through new construction alone. Part of the solution must lie in innovative technologies. The 1991 budget includes more than a five-fold increase over 1990 in Federal research and development funding for Intelligent Vehicle/Highway Systems (IVHS), often referred to as "smart cars/smart highways." IVHS will use state-of-the-art electronics, communications, and computer technology to improve traffic control systems, warn drivers of dangerous situations, and make more efficient use of the existing road system. The Administration is working closely with auto manufacturers and others in the private sector to ensure that they are actively involved in the research and investment necessary for IVHS.

Market techniques that make it more economical for people to travel together have the potential for enhancing the capacity of existing highway facilities. For example, in localities where highway congestion and a shortage of parking exist, employers may offer discount transit passes, flexible work schedules, and preferential parking for carpools and vanpools. While such techniques are not a complete substitute for expanding the highway infrastructure, they enable more efficient use of the existing system.

Europe and Japan have developed high-speed train systems that move above a guideway without contact, supported and guided by magnets, achieve speeds of up to 300 miles per hour, and are environmentally clean. These magnetically levitated trains, or "maglev," might serve to augment existing air and highway transportation. The 1991 budget proposes $10 million, $6 million for the Department of Transportation and $4 million for the Army Corps of Engineers, to initiate a new public-private program to assess the potential for the large scale domestic application of maglev technology.

STABILIZING MASS TRANSIT SERVICES

The 1991 budget, within the constraints imposed by the need to reduce the Federal deficit, targets Federal transit assistance on maintaining the transit capital infrastructure. Federal capital funds proposed in the 1991 budget, together with State and local financing, are sufficient to maintain the existing infrastructure.

The largest cost of maintaining the transit infrastructure is in restoring existing rail facilities and equipment, particularly in older rail cities like New York, Chicago, Philadelphia, northeast New Jersey, Boston, San Francisco, Pittsburgh, and Cleveland. Improved capital infrastructure entails expanding State, local, and private sector financing of major new capital projects by means of public/private development projects, benefit assessment districts, and other financing tools. It will also involve greater private sector participation through the contracting out of transit services and significantly less emphasis on Federal operating subsidies. The Administration proposes to terminate operating subsidies to cities with populations over one million. The Federal contribution represents, on the average, less than six percent of the operating budgets of the affected areas and does not constitute the best utilization of limited Federal resources.

The Administration continues to foster innovative public/private ventures that provide efficient transit services and reduce reliance on Federal subsidization. The Federal government can be a catalyst for mass transit initiatives undertaken by local governments and the private sector. It is the Administration's intent to review the partnership of Federal, State, and local governments and the private sector in the context of the next highway and transit reauthorization.

III.H. BRINGING HOPE TO DISTRESSED COMMUNITIES

THE PROBLEM: UNEVEN PROSPERITY

The Nation's long economic expansion following the recession in the early 1980s has been characterized by sustained economic growth, low inflation, and growing employment and productivity. The economic expansion has also meant a growth in family income and a decline in the poverty rate, from 15.2 percent in 1983 to 13.1 percent in 1988. This decrease meant 3.4 million fewer Americans, including 1.3 million children, were living in poverty in 1988.

Yet not everyone has shared equally in the economic recovery. Some communities have suffered local economic shocks, such as plant closings. Some old farm, mining, and mill communities have lost major employers as the economy has restructured. Communities on the Nation's Southern border have experienced an influx of poor legal and illegal immigrants seeking economic opportunities in this country that are unavailable in their own.

The problem of uneven prosperity is perhaps most acute and persistent in the heart of some of the Nation's large, growing, and economically most vital metropolitan areas, where isolated inner city populations have not benefitted from the opportunities that American society offers. Service and manufacturing jobs have moved toward the fringes of urban areas and demand ever higher skills and education. Those living in the older centers often have not been well-served by schools and transportation systems, and thus have been denied the chance to share in the general growth and prosperity.

THE NEW PATTERN OF POVERTY

The poverty rate has been cut nearly in half since the 1960s. Among the elderly this decline has been particularly significant due in considerable measure to help from social security and other income transfer programs. For many families, poverty is a transitional state, but for others poverty can extend over several generations, giving it a seemingly intractable character. Several demographic and socio-economic changes help to explain this pattern.

Twenty-five years ago, nearly 30 percent of the heads of poor families worked full-time, all year round. Today that percentage is 16 percent. The poverty rate among these families declined from 7.4 percent to 2.9 percent between 1963 and 1988.

Clearly, working families have made progress. However, changes in family composition have increased the numbers of families who do not work. In 1963, 32 percent of poor families with children were headed by a female; in 1988, this percentage had nearly doubled to 61 percent. While families with children and a female head have always experienced high rates of poverty, they now constitute a growing core of the persistently poor. This is not because of a higher rate of poverty among them but simply because of the increasing number of such family households in the general population. In fact, the number of poor female-headed families with children has increased almost every year since the mid-1960s. Even as the current expansion was increasing employment and median income, the number of poor families with children and a female head increased nearly 8 percent.

The concentration of social and economic problems in the poorest neighborhoods has raised fears that a new "underclass" culture has come to dominate life in those areas. While the meaning of this term is controversial, researchers have identified as "underclass" high-poverty neighborhoods characterized by excessive school dropout rates, a high incidence of female-headed families, welfare

dependency, and joblessness or irregular employment among adult males. By one measure using the 1980 Census, 880 of these "underclass" dominated neighborhoods could be identified, with a combined population of 2.5 million. This was more than triple the population living in such neighborhoods 10 years earlier.

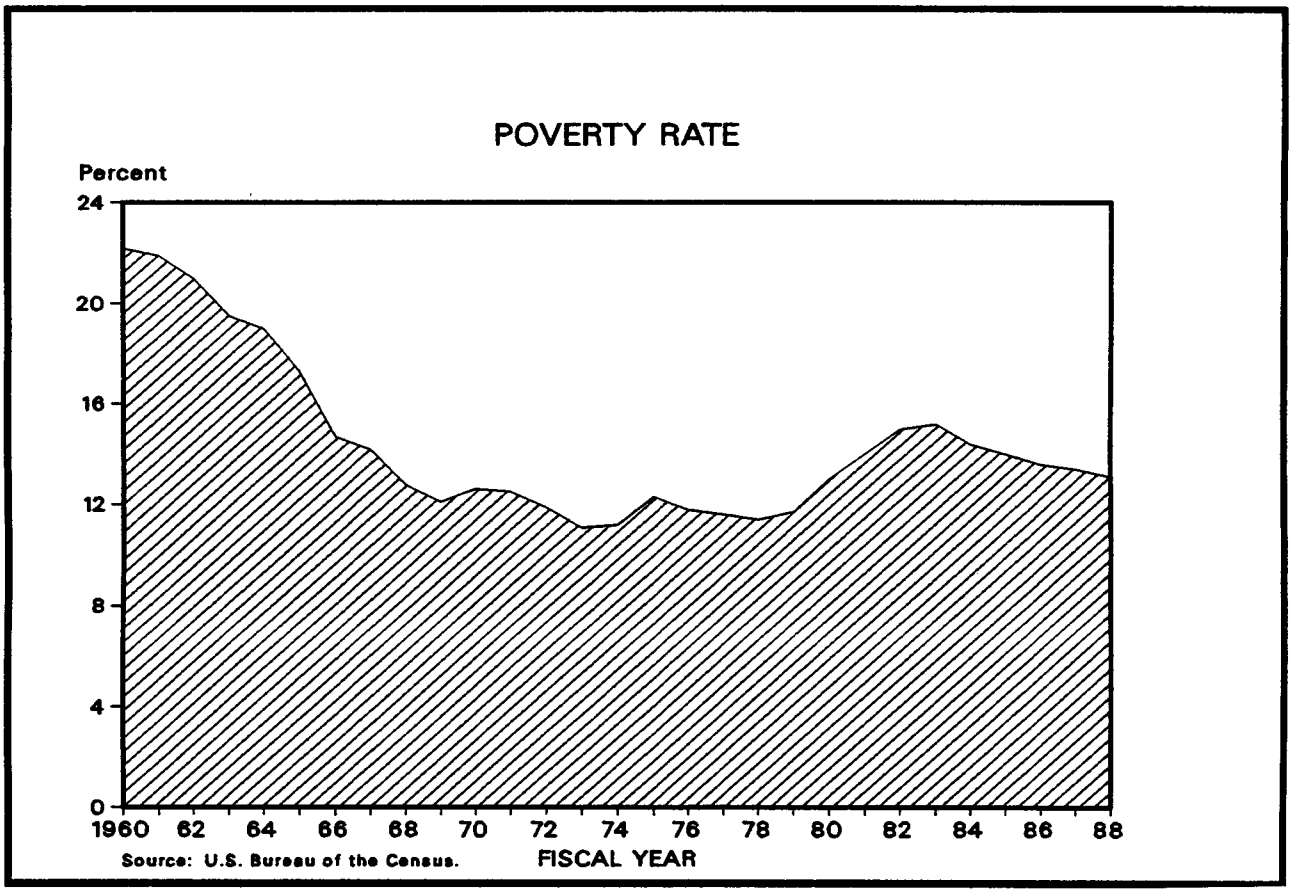
Such neighborhoods are concentrated in a relatively small number of our Nation's largest cities. Over half of the urban poor living in high-poverty tracts live in seven large cities—New York, Chicago, Philadelphia, Baltimore, New Orleans, Detroit, and Newark. Other research using more recent data to define underclass neighborhoods suggests that they may still be growing. Although the majority of households, even in these places, may subscribe to traditional American values of work and family, the struggle to live by them is made doubly difficult by the concentration of social problems and the weakness of community support.

The persistence of poor communities is a problem not only for the people who live there, but for all of American society. The costs of crime, drug use, and wasted human potential translate into a lower quality of life and lower productivity for the whole economy. In simple budgetary terms, they mean enormous public spending for welfare and to control crime and drug use instead of tax receipts from productive employment.

NEW APPROACHES NEEDED

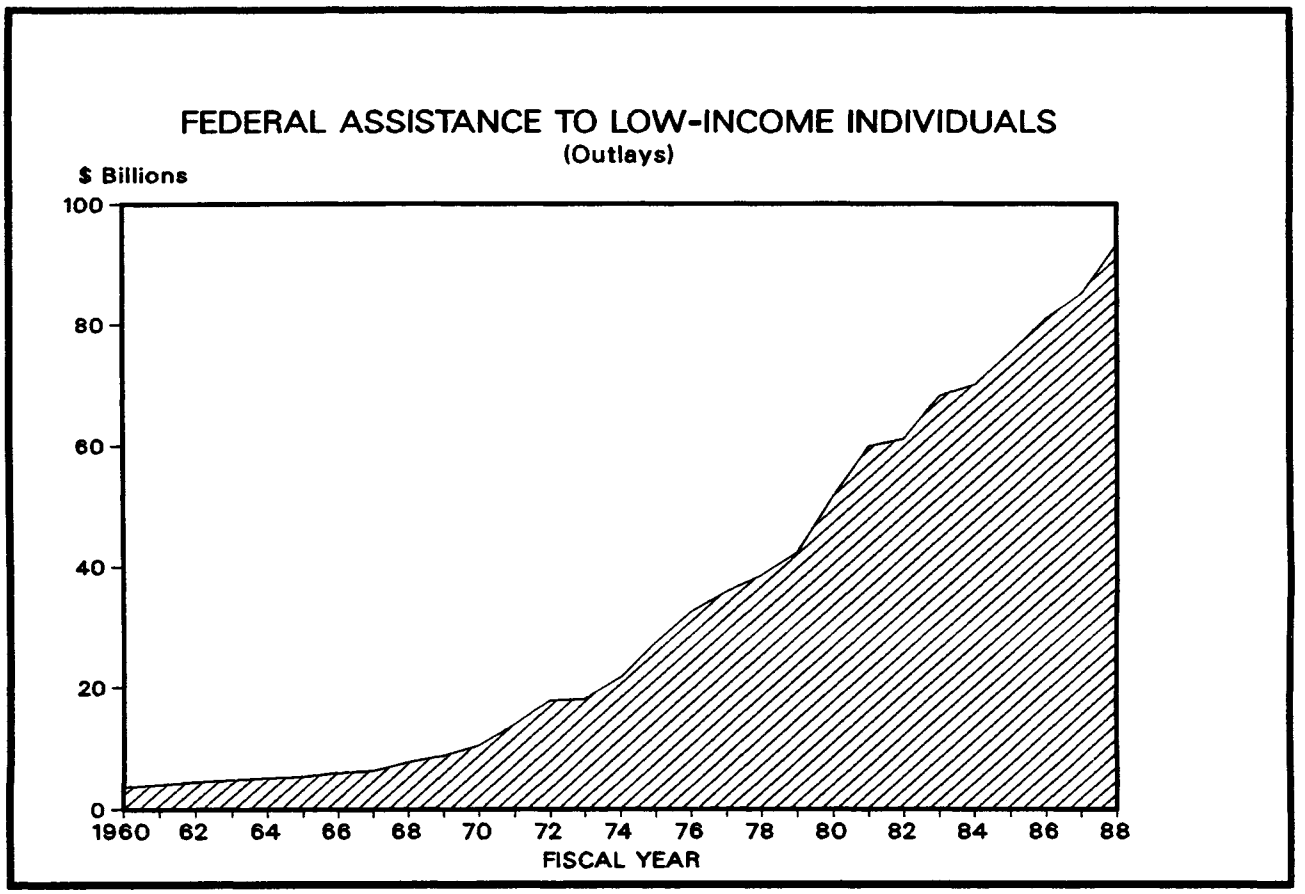
It is widely agreed that the poor must share more in the benefits of the Nation's overall economic prosperity. But how to achieve this goal has proved elusive over a long period of years. No single solution has been found to exist.

America's determination to reduce poverty has expressed itself in a wide range of Federal efforts, including transfers of cash and noncash income to families and individuals, and extensive training and education programs. This budget continues and in some cases expands these efforts. As the two graphs below show, Federal outlays for means-tested transfer programs, cash and in-kind, have grown rapidly over the past 30 years. Although the official poverty statistics overstate poverty by excluding the value of in-kind assistance, it is clear that, after a period of decline, poverty began to increase in the late 1970s and early 1980s. Despite improvement since 1983, it persists at unacceptable levels. As discussed earlier, the characteristics of those in poverty have also changed—a change that has made the problem of poverty seemingly more intractable.



In addition to direct transfer payments to individuals, and programs of education, training and services to improve employment among the disadvantaged, the Federal Government has tried, over the past three decades, a variety of community and economic development programs to revitalize neighborhoods with high concentrations of poverty. Examples are the Economic Development Administration, Model Cities and Urban Development Action Grants. Total outlays for these programs have been $150 billion over 30 years. Yet they often failed to address the root causes of poverty in the inner city—the lack of jobs and entrepreneurial opportunities among poor residents. Consequently, although many physical improvements in cities have resulted, the problem of isolated inner-city poverty, with its accompanying social problems, remains and in some respects has worsened.

While there is no consensus about what is and what is not effective in bringing about long-term change in the lives of poor families and distressed communities, lasting improvements are unlikely to occur unless people are empowered to have more control over their living environment. To restore a climate of opportunity in areas ravaged by drugs, crime, and dependency, barriers to entrepreneurship, job creation and productive economic activity must be removed or reduced. These barriers are widespread. Examples include financial and other obstacles facing welfare mothers trying to leave welfare for the workforce, regulations and tax burdens that can prevent new small business growth, and dependency-creating kinds of programs of the past.



Along with jobs, housing is a central element in any strategy to deal with poverty. And, expanding homeownership opportunities is key to any housing strategy. A home can be a platform to achieve dignity, self-reliance, and stability. People who own private property often become anchors in the community with new reasons to show concern for property values, local taxes, crime or drug abuse, and neighborhood revitalization. Low-income families need expanded opportunities to entertain the possibility of becoming homeowners. That should not be the exclusive dream of the middle class in America.

A subset of problems is posed by the homeless. Again, solutions are not self-evident or simple; they must often combine housing with services tailored to the widely-varying individual needs of the homeless. Federal efforts must combine with those of State, local and private sectors—both profit and non-profit—to create a community-level capability to deal with these problems.

Building on these principles, the President's 1991 budget offers a new initiative to aid communities and families left behind. Called "Homeownership and Opportunity for People Everywhere" or HOPE, its purposes are to: (1) expand opportunities for low-to-moderate income families to manage rental properties and eventually to own their own homes; (2) reduce or eliminate artificial barriers to the development of low-cost housing; (3) help very-low-income families struggling against dependency to achieve economic self-sufficiency; (4) address the needs of the long-term homeless for housing, intensive social services, and health care; and (5) create jobs and economic opportunities in distressed inner-city and rural areas.

Expanding Tenant Management and Homeownership Opportunities

HOPE Grants.—To help low-income families become homeowners with a stake in their communities, the Administration proposes a new

HOPE Grant Program. These grants will provide funds for resident management and homeownership in public housing, government-held vacant and foreclosed properties, and financially "distressed" properties.

HOPE grants would enable public housing residents to purchase their homes, would capitalize on the existing strengths and abilities of non-profit organizations and community-based housing development organizations, and would increase the housing resources available to the Nation's poor.

Public housing resident management and ownership is already showing some promising results. Kenilworth-Parkside, in Washington, D.C., Carr Square and Cochran Gardens, in St. Louis, and public housing communities in Nashville, Boston, and Chicago are examples. The expectation is that with tenants in control, there will be better maintenance, more rents paid on time, a decrease in people on welfare, and generally, a greater sense of pride.

HOPE Grants would provide $2.15 billion over 3 years with States, localities or non-profit organizations required to provide $1 for every $2 in Federal HOPE grant funds. These grants can be used for rehabilitation, acquisition, technical assistance, capital reserves, security, and mortgage assistance, but not for new construction. A total of $250 million would be set aside to provide replacement housing for public housing developments that convert to low-income homeownership.

Urban Homesteading.—Another means to promote homeownership is an existing Federal program called Urban Homesteading. The 1991 budget increases funding for this program; it almost doubles Urban Homesteading resources in 1990 (with a proposed supplemental transfer) and almost quadruples program resources in 1991, for a total of $50 million. The goal is to make Urban Homesteading a more significant tool for stabilizing neighborhoods and providing affordable homeownership opportunities for low-income families. This program turns over single-family FHA, VA, FmHA, and RTC-held properties to cities who then provide the properties at nominal cost to moderate-income families. Urban Homesteading funds are used to reimburse FHA, VA, FmHA, or RTC for the value of the properties given to cities. Families must renovate the properties through "sweat equity," with federally supported financing (e.g., Community Development Block Grant funds), or with other available city funds.

The budget also includes a new initiative to help tenant groups acquire multi-family properties currently held by FHA. A total of 10,000 vouchers will be provided to tenant groups wishing to take over HUD-held rental properties and turn them into homeownership cooperatives. The tenant groups can use HOPE Grant funds for rehabilitation if needed. The vouchers will be used to help the tenants pay their operating costs for 5 years.

Prepayment Strategy.—Over the next 15 years, owners of some 334,000 units of FHA-insured multifamily housing will become eligible to prepay their mortgages. These properties could be converted into condominiums/cooperatives or continue as rental properties, but with much higher rents. In either case, the properties would no longer serve low-income people without their receiving some form of assistance. The HOPE initiative proposes a three-pronged approach to protect tenants who could be adversely affected by much higher, unaffordable rents resulting from these prepayments. To fund this initiative, the budget includes $412 million in 1991 and $1.074 billion over the 1991–1993 period.

One part of this initiative proposes to give tenant groups first right to purchase and convert their buildings to homeownership, resident-owned structures, with Federal aid provided for such conversions. Tenants would receive the financial equivalent of 10 years of housing vouchers; such monies could be used for acquisition, rehabilitation, technical assistance and other uses. If tenants decide not to buy the building, a second approach is to give owners incentives not to prepay their mortgages through additional Federal subsidies to help keep rents low. And third, if owners elect to prepay and sever their relationship with HUD, HUD would protect tenants with housing vouchers, thereby helping them afford higher rents. The tenants could use these vouchers either in the same project, if it remains rental, or in another location of their choice. Owners would pay relocation fees for the tenants.

IRAs for Homebuyers.—The Federal Government provides substantial support for homeownership through the tax code and Federal credit programs. To expand homeownership opportunities for young families and first-time homebuyers, the Administration proposes the use of Individual Retirement Accounts (IRAs) for buying a home. As housing prices increase, it is often difficult for first-time homebuyers to accumulate the savings needed for a downpayment and closing costs. While moderate income families are eligible to receive tax-deferred treatment for savings through IRAs, they are not currently permitted to make IRA withdrawals without penalty for what is likely to be the biggest investment in their lives—their homes.

The HOPE initiative will help achieve homeownership by allowing first-time homebuyers to withdraw funds in their tax-deferred IRAs without penalty. The maximum amount that can be withdrawn from an IRA for a downpayment would be $10,000 and the maximum house price would be 110 percent of the average area purchase price.

FHA reforms.—If FHA is to continue to serve moderate income and first-time homebuyers, reforms must be put into effect that ensure its long-term financial solvency. The Administration's proposed reforms, many of which have just been enacted into law, represent a critical first step in this direction. One of these reforms targets FHA insurance more to first-time homebuyers by eliminating investors from participating in the program. Maintaining the expanded loan limits enacted in 1990 (almost $125,000) will also ensure that access to FHA insurance is not curtailed in high-cost market areas.

A variety of other programmatic reforms are also contemplated—including tighter mortgage underwriting criteria that will help ensure program integrity. A complete and independent actuarial study of FHA is currently underway. This report, along with others done by the private sector and GAO, will show that FHA needs to be significantly strengthened if it is to continue to advance homeownership for moderate-income families and first-time homebuyers while avoiding financial insolvency in the long run. The Administration expects to submit further changes to FHA to address its long-term financial problems after the completion of the actuarial study.

Reducing or Eliminating Barriers to Low-Cost Housing

Housing Opportunity Zones.—The 1991 budget proposes a Federal-local partnership to remove barriers to, and create incentives for, more affordable housing for low- and moderate-income families in distressed urban or suburban areas. It is similar in concept to the Administration's Enterprise Zone proposal. Under this proposal, HUD would designate 50 Housing Opportunity Zones to be chosen through a competitive process from applications by local governments.

Applicants would be selected that best identify and institute plans to remove barriers—such as unnecessarily lengthy and expensive permit and fee processes, exclusive zoning, overly restrictive building codes, rent controls, and regressive property tax burdens. In exchange, they would be eligible for exemptions from certain FHA processing requirements. They would also have a preference in receiving rental rehabilitation grants.

Criteria for the competition for designation as Housing Opportunity Zones will include (1) the extent to which city and county governments propose to reduce regulatory and other burdens on housing production; and (2) the degree to which new and rehabilitated housing will be affordable by low- and moderate-income families. Applicants could also offer low-priced land, vacant city-owned property, low-interest loans, or real estate tax abatements.

Low-Income Tax Credit.—Nationwide, rental vacancy rates remain very high—7.3 percent in the third quarter of 1989. There is no general shortage of rental housing. But there are local area exceptions. The low-income housing tax credit, just extended through December 31, 1990, and proposed for further extension through December 31, 1991 in the President's budget, can be used to supplement the goals of the Housing Opportunity Zones. The credit, which provides real estate investors tax savings over a ten-year period, is designed to encourage the new construction or rehabilitation of affordable rental housing in those areas with rental housing shortages. Credits are allo-

cated to the States, and the States—not the Federal Government—decide which areas and projects will receive the credit. States with Housing Opportunity Zones will have an incentive to target the credits to these zones.

Helping Poor Families and Elderly Become Self-Sufficient

Operation Bootstrap.—Tenant-based housing vouchers remain basic to the Administration's low-income housing policy. They provide housing choice and mobility to families, which are key elements in helping low-income renter families exert greater control over their lives. Starting in 1991, all housing vouchers (and the quite similar rental certificates) provided to welfare families and others with very low incomes must be combined with a local program to help them escape from dependency.

For families capable of working, housing assistance should be seen as a tool for helping them become part of the economic mainstream, rather than permanent support. The Family Support Act, by requiring States to enroll welfare recipients in the JOBS program, provides an opportunity to combine housing with employment counseling, training, education, child care, and the other services these families need to become self-sufficient. HUD has already conducted a demonstration in which selected local communities have put together creative and successful programs linking housing subsidies with job training and other services to housing tenants. The time has come to replicate such local efforts in more areas of the country.

Operation Bootstrap requires that local housing authorities and their local governments must demonstrate to HUD that welfare families and families with very low earnings will have access to a comprehensive program of services. HUD will monitor the progress of each jurisdiction to ensure reasonable progress towards full implementation of their Operation Bootstrap programs.

Frail Elderly Housing-Services Voucher Demonstration.—The frail elderly will constitute an increasing share of the elderly population in coming years. Frail elderly are defined as persons of at least 62 years of age who need assistance with three or more simple activities of daily living, such as eating or dressing. Not surprisingly, frail elderly are more advanced in age, usually in their seventies or eighties and beyond. A nursing home may not be needed or wanted but may be the only way to get any care at all. While the more affluent elderly can afford to pay for the in-home services they need, the very-low-income elderly cannot. The purpose of this demonstration is to test whether housing-services vouchers can cost-effectively help the very-low-income frail elderly continue to live in their homes and not be moved to nursing homes.

The 1991 budget proposes a Service-Supported Housing Voucher Demonstration for the Frail Elderly, funded at $44 million: $10 million for service payments linked with $34 million in housing assistance vouchers for 1,500 frail elderly households over 5 years. The service payments will cover 45 percent of the cost of service provision. Local housing authorities will be required to secure 50 percent of the cost of the services from their States. The elderly individual will be required to pay 10 percent of the service cost. The co-payment requirement is designed to discourage the use of unnecessary services.

Helping the Homeless

Fully Funding McKinney Act Programs for the Homeless.—The President has promised to fund fully the McKinney Act programs. The budget more than meets this promise. In 1991, "full funding" of McKinney implies funding of $727 million; the budget includes $819 million. Another $166 million is available in non-McKinney programs targeted to the homeless, bringing total spending to $985 million. Additionally, various Federal entitlement programs and various State and local block grants are available—and used—to help the homeless.

Special Homeless Initiatives.—Several initiatives are focused on target groups within the homeless who have special service needs:

- *AFDC Families in Welfare Hotels:* The budget proposes $143 million for the McKinney Act Transitional Housing Demonstration program. This program is designed to develop innovative approaches to providing housing and supportive services to homeless individuals and families who are capable of making the transition to

independent living within 2 years. The program provides interest-free advances to States, localities or non-profit groups for the acquisition and rehabilitation of facilities for transitional housing; funding for a portion of operating costs of the housing; supportive services and employment assistance programs; and technical assistance to recipients in carrying out program activities. In 1991, the budget includes a new initiative within this program to assist homeless Aid for Dependent Children (AFDC) families living in welfare hotels.

This initiative will test innovative approaches to moving these families out of their emergency shelter accommodations into more stable, transitional housing arrangements.

- *A New "SHELTER PLUS CARE" Program to Help the Homeless Mentally Ill or Recovering Substance Abusers:* The long-term homeless are not very well served by either the housing delivery system or the social service network. These individuals need intensive services and long-term supportive housing arrangements provided in a more systematic manner than is now the case. In 1991, the Administration proposes that HUD provide $247 million in housing assistance for over 8,900 homeless mentally ill or recovering substance abusers. The housing assistance will take three different forms to accommodate different housing needs: (1) rental assistance to individuals for use in a wide range of housing situations, including regular apartments, group homes, or single-room-occupancy units; (2) subsidies to non-profits who provide group home living arrangements; and (3) subsidies to landlords of single-room-occupancy buildings so they can charge affordable rents.

  In order to receive any of these housing subsidies, applicants would have to contribute an equal matching amount from State, local or private sources for supportive services for these individuals.

Creating Jobs and Economic Growth in Distressed Areas

Enterprise Zones.—It is essential in both urban and rural America to create jobs and entrepreneurial activity in distressed areas that have not fully participated in the Nation's overall economic prosperity. State and local governments have already taken the lead by setting up their own enterprise zones but these lack Federal incentives. Federal enterprise zones will bolster such State and local efforts by providing strong Federal tax incentives for job creation and entrepreneurship in distressed areas.

Three Federal tax incentives are included in the President's Enterprise Zone proposal:

- A 5 percent refundable tax credit for the first $10,500 of wages, up to $525 per worker, to qualified employees for wages earned in an enterprise zone business. This credit phases out between $20,000 and $25,000 of total wages. In many cases, this credit will cut the taxes of low-income workers to zero. For some low-income families who already owe little in taxes, a refundable credit will not only eliminate their tax liability—it will put money in their pockets.

  Welfare recipients and other low-income people on government support often face very steep effective tax rates as they enter the workforce. They pay income and social security taxes on their earnings, and suffer high effective marginal "taxes" from losing their AFDC, Food Stamps, Medicaid coverage and other government support. They also face employment-related expenses, such as child care and transportation. The proposed wage tax credit is designed to ease the financial transition of welfare families into entry-level jobs opportunities that will help break the poverty trap.

- Expensing of investor purchases of newly-issued corporate stock for businesses located in enterprise zones. This is an up-front deduction for up to $50,000 per year of new equity investment, with a $250,000 lifetime limit. Corporations issuing the stock must have less than $5 million of total assets, and must use the stock proceeds to acquire tangible assets located within the zones. This incentive is designed to make zones attractive to new capital by giving an immediate tax saving

to individuals who invest in enterprise zones.

- A zero capital gains rate for gains on investment in tangible property used in an enterprise zone business, and located within an enterprise zone for at least 2 years. This is another strong incentive for potential local entrepreneurs and outside investors to invest capital in the zone. It is a more delayed reward for entrepreneurship than the up-front expensing deduction.

In summary, Federal tax incentives would be available to investors and employees in 50 zones for up to a maximum of 24 years. The estimated tax revenue effect of this proposal is $520 million from 1991 through 1993.

These 50 zones will be chosen through a competitive process after a comprehensive evaluation by the Secretary of Housing and Urban Development. Applicant localities must commit to provide regulatory relief and improved services within the areas they nominate as Federal enterprise zones. Those states and localities offering the strongest package of incentives and initiatives would be selected for zone designation. For example, some preference for Federal enterprise zone designation could be given to States and localities that offer relief from land use regulations. Similarly, States and localities could toughen community drug enforcement, begin new anti-crime efforts, target improved job training and counseling to zone residents, or improve municipal services and neighborhood infrastructure.

CONCLUSION

The HOPE initiative will not by itself solve the problems of poverty. No single approach can do so. But HOPE will help to contribute an important escape route from poverty—by providing the stability that comes from better housing, particularly owning one's home. The road away from poverty is likely to begin with pride and self-reliance, and nothing is more conducive to pride and self-reliance than responsibility for one's dwelling.

III.I. PRESERVING NATIONAL SECURITY AND ADVANCING AMERICA'S INTERESTS ABROAD

The budget requests $326.9 billion in budget authority and $321.4 billion in outlays for the National Defense (050) and International Affairs (150) functions, $6.6 billion and $10.5 billion, respectively, more than in 1990. The purpose of this request is to preserve national security—through diplomatic, political, and military means; through advancing the U.S. agenda on economic and trade issues; and through advancing the cause of democracy and human rights.

The Department of Defense (DOD) (051) portion of National Defense is $295.1 billion in budget authority and $292.1 billion in outlays. Although DOD budget authority increases by 1.3 percent in nominal terms, it declines by 2.6 percent in real terms. The proposed 1991 DOD budget authority level is 16 percent below the 1985 level in real terms.

FUNDING SUMMARY FOR NATIONAL DEFENSE AND INTERNATIONAL AFFAIRS

(Dollar amounts in billions)

	Actual 1989	Estimate 1990	Estimate 1991	Percent change over 1990
National Defense (050):				
Budget authority	299.6	301.6	306.9	+1.7%
Outlays	303.6	296.3	303.3	+2.3%
Department of Defense—Military (051):				
Budget authority	(290.8)	(291.4)	(295.1)	(+1.3%)
Outlays	(294.9)	(286.8)	(292.1)	(+1.9%)
International Affairs (150):				
Budget authority	17.3	18.6	20.0	+7.5%
Outlays	9.6	14.6	18.2	+24.9%
Total:				
Budget authority	316.8	320.2	326.9	+2.1%
Outlays	313.1	310.9	321.4	+3.4%

CONTEXT

Remarkable changes have occurred during the past year. The Berlin Wall has been opened and democratic forces are on the move in Eastern Europe. The Soviets are carrying out unilateral reductions in conventional forces stationed in these countries. Arms reduction negotiations are underway for both strategic and conventional forces. These events, and the promising results of the December meeting at Malta between President Bush and Chairman Gorbachev, would seem to bring a more peaceful world closer to realization. At the same time, Soviet financing of arms through Cuba to Nicaragua and El Salvador and Soviet re-supply of the Kabul Regime in Afghanistan remain as troublesome signs

that regional stability and democratic interests are far from secure.

Democracy and the private marketplace are growing stronger throughout the world. Argentina, Brazil and Chile, as well as the Philippines and Panama, have replaced dictatorships with democracies. A wide variety of countries have moved away from socialism. It is particularly encouraging that the weaknesses of centrally directed economies in Africa and Asia are being recognized by those countries. There is less talk of a non-market oriented "New Economic Order" in the United Nations. At the same time, democracy in many developing countries remains fragile and debt servicing burdens continue to impede growth. Structural impediments to imports and investments continue to pose problems.

Although these changes suggest new opportunities and adjustments in the U.S. defense and international affairs programs, there are reasons for caution. Soviet military capability will remain formidable, even after announced reductions. The strength of the NATO alliance must be maintained; so must America's ability to respond to any significant reversal in Soviet policy. In addition, threats to U.S. national security outside Europe remain and may be increasing. There are dangers in regional conflicts, particularly in the Middle East and Central America, and in increased proliferation of sophisticated weapons, including nuclear weapons, in developing countries. There are also dangers in state-sponsored terrorism; in narcotics trafficking; in poverty, disease and the plight of refugees; and in environmental damage.

Defense and international affairs programs must take advantage of the opportunities provided by recent changes. They must also address realistically the problems that remain.

NATIONAL DEFENSE

A strong defense preserves the peace. Indeed, the restoration in the past decade of the military strength of the United States has helped preserve the peace, create more constructive relations with adversaries, and make mutual arms reductions a serious possibility. As a result, savings in the Defense budget are now possible.

The national security objectives of the United States remain unchanged. The U.S. must be able not only to deter aggression and protect American citizens, but also to repel or defeat military attack. It must be able to take on new challenges such as reducing the flow of illegal drugs into the United States. It is also in the U.S. interest to pursue verifiable strategic and conventional arms reduction agreements with the Soviets and to prevent the transfer of militarily critical technologies to potential adversaries.

While U.S. forces must continue to deter the Soviets, they must also have increased utility for dealing with other conflicts. Over the longer term, the active armed forces of the United States will probably be smaller and more global in perspective. They will need a degree of agility, readiness and sustainability appropriate to the varied demands of likely contingencies.

The assurance of future capabilities requires investments in R&D and modernization; substantial reserve forces; and maintenance of the quality, morale and training of military personnel. This will allow the United States to hedge against an uncertain future; it will also permit the reversal of Defense reductions if that should prove necessary. In addition, the Administration will work with the Congress to make U.S. security assistance programs more effective in building up the capabilities of American allies and friends to meet changing circumstances. (See International Affairs below.)

The budget request for National Defense is significantly less ($14.3 billion in budget authority and $5.5 billion in outlays) than the amounts included in the President's February 1989 budget. Planning levels for the future now assume only slight nominal increases, less than would be required to offset projected inflation. Compared to the February 1989 budget, savings in the 1991–1993 period are $63.6 billion in budget authority and $29.7 billion in outlays. These savings will be achieved

through a selective approach to the acquisition of new equipment and supplies and through reductions of civilian and military personnel. Savings of about $2.3 billion in 1991 will also result from implementation of the recommendations of the Defense Management Report (described in Part VII). Although current planning projects lower active force levels, the forces that remain will be well trained, well equipped, and served by a more efficient support structure.

National Defense Budget

The following table shows budget authority and outlays for the three national defense subfunctions: military functions of the Department of Defense, atomic energy defense activities, and defense-related activities of other agencies.

NATIONAL DEFENSE

(In billions of dollars)

	1989 Actual	1990 Estimate	1991 Estimate
Budget authority:			
Department of Defense—Military	290.8	291.4	295.1
Operations	(164.9)	(163.5)	(170.2)
Investment	(125.9)	(127.9)	(124.9)
Atomic Energy Defense Activities	8.1	9.7	11.0
Defense-related Activities	0.6	0.6	0.8
Total budget authority	299.6	301.6	306.9
Outlays:			
Department of Defense—Military	294.9	286.8	292.1
Operations	(167.7)	(160.5)	(166.8)
Investment	(127.2)	(126.3)	(125.3)
Atomic Energy Defense Activities	8.1	8.9	10.4
Defense-related activities	0.6	0.6	0.7
Total Outlays	303.6	296.3	303.3

Department of Defense—Military

The budget requests $295.1 billion in budget authority and $292.1 billion in outlays for the military functions of the DOD, $3.8 billion and $5.4 billion more, respectively, than in 1990. The following table provides a summary of active and reserve military personnel and forces.

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SUMMARY OF ACTIVE AND RESERVE MILITARY PERSONNEL AND FORCES

	1989 Actual	1990 Estimate	1991 Estimate
Military Personnel (in thousands):			
Active	2,130	2,076	2,039
Army	770	744	728
Navy	593	591	585
Air Force	571	545	530
Marine Corps	197	197	197
Guard and Reserve	1,171	1,155	1,152
Army	776	757	757
Navy	152	153	150
Air Force	199	201	202
Marine Corps	44	44	44
Strategic Forces:			
Intercontinental Ballistic Missiles:			
Peacekeeper	50	50	50
Minuteman	950	950	950
Poseidon-Trident	576	608	656
Strategic Bomber Squadrons	21	19	19
General Purpose Forces:			
Land Forces (Active/Reserve):			
Army Divisions	18/10	18/10	16/10
Marine Divisions	3/1	3/1	3/1
Naval Forces (Total):			
Total Naval Vessels	566	551	546
Aircraft Carriers	14	14	14
Battleships	4	4	2
Nuclear Attack Submarines	96	91	86
Amphibious Assault Ships	65	64	66
Sealift Fleet	69	68	66
Air Forces (Active/Reserve):			
Air Force Fighter Wings (Equiv.)	25/12	24/12	24/12
Navy Attack Wings	13/2	13/2	13/2
Marine Corps Wings	3/1	3/1	3/1
Air Force B-52 Squadrons	3/0	2/0	2/0
Strategic Airlift Squadrons	20/5	20/5	20/5

OPERATIONS

Military Personnel

Active duty end-strength will decline by the end of 1991 to a level of 2,038,800—37,605 below the estimated 1990 level, 91,429 less than the actual 1989 level, and 81,300 less than previously planned with savings of $1.7 billion. Pending the outcome of current conventional arms negotiations, deployment of forces in Europe will not change in 1991. At the same time, to continue to assure force quality, readiness and training, the budget provides for a 3.5 percent pay raise, improved benefits, enlistment and re-enlistment bonuses,

special pay for critical skills, and continuation of current training levels.

Strategic Forces

Deployed forces will continue to include the Triad of land, air and sea based systems, as well as air defense interceptors. Land based missiles and strategic submarines will continue at the 1990 levels of 1,000 Minuteman and Peacekeeper missiles and 35 Poseidon and Trident submarines with over 600 missiles. The bomber force will, however, decrease by 19 aircraft, as older B-52's are phased out.

General Purpose Forces

The budget proposes reductions to planned levels of ship maintenance and depot maintenance reflecting congressional action and changes in schedule. Savings are $2.3 billion. Several force structure adjustments are also proposed.

- *Land Forces* at the end of 1991 will include 19 active and 11 reserve Army and Marine divisions (plus 7 reserve brigades and 5 reserve battalions to "roundout" active divisions). This reflects a reduction of two active divisions from force levels at the end of 1990.
- *Naval Forces* at the end of 1991 will include 14 aircraft carrier battle groups and 15 tactical airwings (the same as in 1990), but two of the four U.S. battleships will be deactivated and the number of nuclear attack submarines will decrease by five in 1991. The total number of Naval vessels will decline from 551 in 1990 to 546 in 1991. Sealift forces will, however, remain at about 1990 levels.
- *Air Forces* at the end of 1991 will include 24 active and 12 reserve Air Force fighter wing equivalents (nearly 4,000 fighter and attack aircraft), 2 squadrons of B-52's dedicated to the delivery of conventional weapons (35 aircraft), and 25 strategic airlift squadrons (nearly 400 C-5 and C-141 aircraft) to provide intercontinental airlift. While airlift forces will remain at current levels, one Air Force fighter wing equivalent and one conventional B-52 squadron will be deactivated in 1990.

Special Operations Forces

These forces will include more than 41,000 military personnel by the end of 1991. Units include Army ranger and special forces battalions; Navy sea, air, land (SEAL) teams; and Air Force special operations wings. Through 1991, Army special forces battalions will increase from 13 to 15, and Air Force special operations units will gain 7 additional aircraft.

INVESTMENT

Strategic Systems

To modernize all three components of the strategic Triad, procurement for 1991 includes the eighteenth Trident submarine and 52 Trident II missiles, 12 Peacekeeper missiles for operational testing and special railroad trains to provide mobility for Peacekeeper missiles, five B-2 stealth bombers, and 100 advanced cruise missiles. The budget requests funds for continued development of the small intercontinental ballistic missile. It also requests an increase for the Strategic Defense Initiative to a level of $4.5 billion. This is $0.9 billion more than in 1990 but $1.0 billion less than previously planned.

Conventional Systems

To maintain well-equipped forces, the budget provides for procurement in 1991 of 225 M-1 Abrams tanks, 600 Bradley Fighting Vehicles, 72 Blackhawk utility helicopters, 14 new ships (including 2 SSN-21 attack submarines and 5 Aegis guided missile destroyers), 186 Air Force fighters (including 150 F-16's and a final procurement of 36 F-15s), and six C-17 transport aircraft.

Development will continue on the Army's experimental light helicopter (LHX) and improved ground force systems, the Advanced Air-to-Air Missile System replacing the Phoenix missile, P-7 anti-submarine warfare aircraft, and next generation tactical aircraft (the Advanced Tactical Fighter and the Advanced Tactical Aircraft).

Fifteen systems will be terminated with associated savings of $3 billion. Examples of terminations include the Apache (AH-64) helicopter, the Chaparral and Maverick missiles, the Sea Lance torpedo delivery system, the Air

Force Airbone Self Protection Jammer, and the MK-19 Grenade Launcher. Production of the M-1 tank will end following 1991 procurement.

In addition, several 1990 programs are proposed for deferral to finance the 1991 M-1 tank program and to partially fund the F-15E aircraft program. Proposed deferrals amount to $1.4 billion and include fast sealift ships, the MH-60G helicopter, and a 155mm Artillery Projectile.

Reductions totalling about $5 billion are also proposed in several programs to reflect congressional action in 1990, delays in program execution, and changes in schedules. Programs affected include the C-17 transport aircraft, the Advanced Tactical Fighter, aircraft modification programs, the T-45 Training System, the F-15E aircraft, and communications and electronics programs.

Research and Technology

The budget requests $38.0 billion in budget authority and $37.0 billion in outlays for research, development, testing and evaluation—$1.2 billion and $0.4 billion, respectively, more than 1990 levels. The request includes $3.4 billion to develop technology options for future U.S. weapon systems and to guard against technological surprise by adversaries.

Funded projects with high potential for increased military capability include research on high-speed semiconductors (for use in advanced communications systems and computers); R&D by an industry consortium (SEMATECH) on new methods of producing semiconductors; design, in collaboration with NASA, of the National Aerospace Plane, which could revolutionize access to the lower boundaries of space; and research on other launch-vehicle technologies that could dramatically lower the cost of putting hardware into space. The budget also provides for research on light-weight materials with high strength, on significantly increased fuel efficiency in aircraft engines, and on robotic systems capable of operating in dangerous environments.

BASE CLOSURES

The budget requests $916 million for continued implementation of the Base Closure and Realignment Act approved by Congress in 1989. An amount of $500 million was provided in the 1990 budget. These funds will provide for the construction of facilities and other one-time implementation costs at military bases to accommodate the transfer of activities from bases that will be closed or realigned.

DRUG INTERDICTION

The budget requests $1.2 billion for an aggressive Defense counternarcotics program, $0.3 billion more than in 1990. The Department will continue its highly successful demand reduction program for military personnel; expand National Guard assistance to national counternarcotics efforts; fund efforts to integrate the counternarcotics command, control, communications and intelligence network of law enforcement agencies; expand efforts to detect and monitor airborne and maritime drug smugglers; provide additional support to law enforcement agencies (including new efforts begun in 1990 along the southwest border); and continue support of the President's Andean initiative (especially in Colombia).

INTELLIGENCE

Virtually all funding for the National Foreign Intelligence Program is included in the Defense budget, although the exact level is classified. The budget provides for obtaining information on potential threats, improving capabilities to counter hostile intelligence services, monitoring prospective arms reduction treaties, detecting changes in foreign military technologies, increasing intelligence support for the war on drugs, research on advanced technologies, and covert action operations in support of national security objectives in accordance with law.

ATOMIC ENERGY DEFENSE ACTIVITIES

These activities, conducted by the Department of Energy, include research, development, testing and production of nuclear weapons; production of special nuclear materials; storage and clean-up of nuclear wastes from defense programs; and design of reactors for nuclear-powered Navy vessels. The nuclear waste management program provides interim

storage for all defense nuclear wastes and supports research and development on the problems of isolating and permanently storing these wastes.

The budget requests for these purposes are: budget authority of $11.0 billion and outlays of $10.4 billion, compared to $9.7 billion and $8.9 billion, respectively, for 1990. The budget provides for design of two new production reactors and modernization of existing facilities. The budget requests $2.4 billion, an increase of $429 million over 1990, to implement the first year of a 5-year plan for environmental restoration and waste management at defense facilities. Included are activities to bring existing facilities into compliance with all Federal and State environmental, safety, and health requirements and to clean up contamination from prior activities.

DEFENSE RELATED ACTIVITIES

Defense related activities include civil defense and emergency preparedness activities of the Federal Emergency Management Agency, the efforts of the Selective Service System, and the Maritime Administration's Ready Reserve Force which provides for a standby fleet that can be activated in wartime. The budget requests $760 million in budget authority and $705 million in outlays for these purposes, as compared with $609 million and $648 million, respectively, in 1990.

5-YEAR PROJECTIONS

The following table shows estimates of budget authority and outlays for each of the major elements of the national defense function.

BUDGET AUTHORITY BY FUNCTION AND PROGRAM

(In billions of dollars)

	1989 Actual	Estimate				Projection	
		1990	1991	1992	1993	1994	1995
050 National Defense:							
051 Department of Defense—Military:							
Military personnel	78.5	78.5	79.1	80.5	81.8	82.8	83.9
Operations and maintenance	86.2	86.8	90.1	91.7	93.2	94.4	95.6
Procurement	79.4	82.6	77.9	78.9	79.8	80.7	81.5
Research, development, test and evaluation	37.5	36.8	38.0	38.6	39.2	39.7	40.1
Military construction	5.7	5.3	5.6	5.7	5.7	5.8	5.9
Family housing	3.3	3.2	3.5	3.5	3.6	3.6	3.7
Revolving funds and other	0.9	−0.7	2.3	2.3	2.3	2.4	2.4
Offsetting receipts	−0.7	−1.1	−0.9	−1.0	−0.9	−0.9	−0.9
Allowances	—	—	−0.3	−0.3	−0.3	−0.3	−0.3
Subtotal, DOD—Military	290.8	291.4	295.1	300.0	304.4	308.0	311.8
053 Atomic energy defense activities	8.1	9.7	11.0	11.8	12.3	12.7	13.1
054 Defense-related activities	0.6	0.6	0.8	0.8	0.8	0.9	0.9
Total budget authority	299.6	301.6	306.9	312.5	317.5	321.6	325.7

OUTLAYS BY FUNCTION AND PROGRAM

(In billions of dollars)

	1989 Actual	Estimate				Projection	
		1990	1991	1992	1993	1994	1995
050 National Defense							
051 Department of Defense—Military:							
Military personnel	80.7	75.3	78.8	80.2	81.5	82.5	83.6
Operations and maintenance	87.0	86.1	88.3	90.2	91.8	93.2	94.4
Procurement	81.6	80.9	79.3	79.5	77.4	77.7	76.7
Research, development, test and evaluation	37.0	36.5	37.0	37.7	38.3	38.9	39.3
Military construction	5.3	5.4	5.5	5.5	5.7	5.5	5.9
Family housing	3.3	3.4	3.5	3.5	3.5	3.5	3.6
Revolving funds and other	0.8	0.2	0.8	1.6	2.0	2.2	2.5
Offsetting receipts	−0.7	−1.1	−0.9	−1.0	−0.9	−0.9	−0.9
Allowances	—	—	−0.2	−0.3	−0.3	−0.3	−0.3
Subtotal, DOD—Military	294.9	286.8	292.1	296.9	299.0	302.3	304.8
053 Atomic energy defense activities	8.1	8.9	10.4	11.5	12.1	12.6	12.9
054 Defense-related activities	0.6	0.6	0.7	0.7	0.8	0.8	0.8
Total outlays	303.6	296.3	303.3	309.2	311.9	315.7	318.6

INTERNATIONAL AFFAIRS

The objective of International Affairs spending is to protect and advance the interests of the United States and its people beyond its shores. In a world of 171 nations and 5 billion people—with U.S. interests, markets and investments in all parts of the globe—the task is an enormous one.

Certain priorities, however, stand out. The United States must make every effort to support the transition of Eastern European countries to democracy and free market economies. It must work toward verifiable conventional and strategic arms reduction agreements that are in the overall interest of the United States. It must use its political, economic and diplomatic strength toward achieving greater stability in such troubled regions as the Middle East and Central America. Democratic outcomes must be sought in Nicaragua, and democratic outcomes implemented in Panama. Further, while world attention tends to focus on the drama of peoples rejecting totalitarianism, there is an equal U.S. obligation to preserve existing democracies under threat, such as in the Philippines.

To respond to the historic opportunities that political change offers—as well as to confront both regional and worldwide threats—the budget requests selective increases in the International Affairs programs. Investing in peace—through the support of democracy, free markets, and solutions mutually arrived at—reduces the risk of conflict and the enormous sums that conflict entails. The investment is thus critical to preserving national security, an objective which is itself best served by a world system based on democratic governments and market-oriented economies.

A portion of this increased investment will be directed toward international bodies such as the United Nations and the World Bank. In a more pluralistic world, the role of the major international institutions is likely to be greater than during the bipolar super-power era. These institutions can serve specific U.S. objectives: such is the case with the World Bank

and the International Monetary Fund which supported Administration proposals on Third World debt and the help of UN peacekeeping forces in implementing the political settlement in Namibia. Continuing realization of these benefits from international institutions will require the United States to meet fully its obligations to them. The budget requests $3.2 billion to pay U.S. current and past obligations owed these institutions under treaties and binding agreements.

INTERNATIONAL AFFAIRS BUDGET

As the following table shows, budget authority for international affairs is requested to increase by $1.4 billion over 1990 to $20.0 billion. Outlays are estimated to grow by $3.6 billion, to $18.2 billion, reflecting in part the cessation in 1991 of certain large receipts.

INTERNATIONAL AFFAIRS

(In billions of dollars)

150 International Affairs	1989 Actual	1990 Estimate	1991 Estimate
Budget Authority:			
Foreign Aid	13.0	14.0	14.9
Security Assistance	(7.7)	(8.5)	(8.8)
Development and Humanitarian Assistance	(5.3)	(5.5)	(6.1)
Diplomacy	3.9	4.3	5.3
Conduct of Foreign Affairs	(2.8)	(2.9)	(4.1)
Public Diplomacy	(1.1)	(1.3)	(1.2)
International Financial Programs	0.4	0.4	−0.2
Total Budget Authority	17.3	18.6	20.0
Outlays:			
Foreign Aid	6.3	11.2	14.2
Security Assistance	(1.5)	(6.3)	(8.8)
Development and Humanitarian Assistance	(4.8)	(4.9)	(5.4)
Diplomacy	4.0	4.1	4.5
Conduct of Foreign Affairs	(2.9)	(3.0)	(3.2)
Public Diplomacy	(1.1)	(1.2)	(1.3)
International Financial Programs	−0.7	−0.7	−0.5
Total Outlays	9.6	14.6	18.2

FOREIGN AID

The budget requests $14.9 billion in budget authority and $14.2 billion in outlays for foreign aid, $1 billion and $3 billion, respectively, more than in 1990. Much of the increase in outlays in 1991 is due to the prepayment in 1990 of past loans for military goods and services; these prepayments reduce 1990 outlays by $1.7 billion but will not recur in 1991.

The foreign aid component of international affairs spending (security, development, and humanitarian assistance) is important to U.S. national security and to stability and prosperity worldwide. Our military and economic assistance promotes key U.S. foreign policy objectives through programs which, for example, support democratic reform in Eastern Europe, Central America, and Asia; combat international narcotics trafficking and production; strengthen the security of key allies and friends; and encourage economic growth in the

world's poorest countries. Several U.S. government agencies are involved in implementing these programs, with the State Department providing overall foreign policy guidance.

With recent changes in the communist world and the growing appreciation of the advantages of a market-based system for allocating resources, it is necessary to review U.S. foreign aid programs and U.S. participation in multilateral institutions in order to ensure that they meet the development and security needs of the next decade. At the same time, it should be noted that the foreign aid program has undergone significant changes in recent years. The budget reflects an emphasis on Eastern Europe, counter-narcotics, and the U.S. role in the multilateral development banks (MDBs). Assuring that U.S. foreign aid is used most effectively in an era of rapid political and economic change will require close cooperation between the Administration and Congress.

Security Assistance

The budget requests $8.8 billion in both budget authority and outlays for international security assistance, $0.4 billion and $2.5 billion, respectively, more than in 1990. The large outlay increase reflects a return to a traditional balance between budget authority and outlays following a surge in prepayments in 1990 as discussed above. Security assistance advances national security and foreign policy goals by promoting the security and economic stability of U.S. friends and allies.

Purchases of military goods and services are supported through Foreign Military Financing (FMF); economic stabilization is supported through the Economic Support Fund (ESF); and exchanges with members of friendly and allied armed forces are promoted through the International Military Education and Training (IMET) program.

The largest component of the security assistance requested—$5.1 billion, or 61 percent—provides military and economic support to Israel and Egypt. Furthering their efforts to achieve a lasting peace in the Middle East remains a high priority of U.S. foreign policy. The budget requests over $2.1 billion to permit payments associated with U.S. military bases in NATO countries and the Philippines and to permit enhanced programs in Central America.

Of major concern is the fact that in 1990 Congress earmarked 88 percent of the principal security assistance accounts for 24 countries. Congressional earmarking will prevent adequate programs in such key countries as Pakistan, Thailand, the Philippines and El Salvador. Recent developments in Eastern Europe and Panama underscore the need for flexibility to take advantage of opportunities to exercise U.S. leadership. The Administration once again will ask for greater flexibility in managing security assistance, while working with Congress to assure that our national security priorities are addressed. The Administration will also review in 1990 the role of security assistance in relation to U.S. military forces in meeting likely contingencies and threats.

Narcotics Control.—The budget requests $528 million in budget authority and $270 million in outlays for international narcotics control (including both security assistance and development assistance funding). This activity would grow by nearly 80 percent above 1990 levels. The requested funding will finance the second year of the plan to reduce the flow of cocaine from the Andean countries of Colombia, Peru and Bolivia. The major increment in this program will be $175 million of new aid for the economies of those countries that evidence a determination to attack seriously the narcotics problem.

In 1990, the Administration's Andean counter-narcotics initiative provided $141 million in military aid, principally to help Colombia's war against the "Drug Lords" of the Medellin and the Cali cartels. With extraordinary courage and U.S. assistance, the Colombian Government has relentlessly pursued drug traffickers and their assets despite numerous attacks by the drug cartel against public officials and innocent citizens. The 1991 request will both continue U.S. military assistance and assist coca-producing countries to substitute other economic activities for coca production. The budget also requests $150 million in other narcotics control assistance to support anti-narcotics law enforcement activities in the Andean countries and elsewhere in the world.

Development and Humanitarian Assistance

The budget requests $6.1 billion in budget authority and $5.4 billion in outlays for development and humanitarian assistance, $0.6 billion and $0.5 billion, respectively, more than in 1990. This funding is to encourage market-oriented economies through budgetary support, capital projects and technical assistance; to provide relief from major disasters; and to provide humanitarian assistance such as refugee care. The request includes $1.9 billion in budget authority for bilateral economic assistance programs administered by AID and $1.7 billion in budget authority for U.S. contributions to multilateral development banks such as the World Bank.

Special Assistance for Eastern Europe and the Philippines.—The major emphasis of the increases in foreign aid in 1991 is support of democracy abroad.

- The budget requests $300 million for a special assistance initiative for those countries in Eastern Europe that are moving toward democracy and attempting to develop free market economies. Special legislation will be transmitted to spell out the objectives of this program in relation to legislation already enacted to provide for an Enterprise Fund for Poland and Hungary and a Stabilization Fund for Poland.
- The budget also requests $200 million for special assistance to the Philippines. The funds would comprise the second contribution to a multilateral effort to back major economic reform needed to underpin Philippine democracy.

Refugees.—The budget requests $451 million in budget authority and $435 million in outlays for refugee programs, $82 million and $49 million, respectively, more than in 1990. The request will help finance the admission of up to 110,000 refugees into the United States, primarily from the Soviet Union and Southeast Asia. These funds will also finance the U.S. share of assistance to refugees in camps abroad managed by international organizations such as the UN High Commissioner for Refugees. Finally, $25 million in special emergency funds is proposed to allow for contingencies.

Multilateral Development Assistance.—The budget requests $3.2 billion in contributions over the next 3 years to the International Development Association (IDA), an agency of the World Bank. This proposed funding, when matched by $11.9 billion in contributions from other countries, will permit IDA to provide an average of $5.5 billion in annual long-term lending on concessional terms during 1991–93 to the poorer developing countries. A substantial portion of these resources will support economic reforms in African countries where governments are moving toward market-oriented economic systems. The budget request also includes $279 million to provide funds pledged in past years to several of the multilateral development banks but which were not appropriated. The existence of these arrearages limits the ability of the United States to exert leadership in these organizations. As with the arrearages to the United Nations and related agencies discussed below, these arrearages constitute formal obligations that the United States must honor.

Bilateral Development and Disaster Assistance.—AID's regular development assistance program is continuing its transition toward greater emphasis on economic performance in allocating funds among recipients. In addition, the budget requests a two-thirds increase in AID funding for international disaster assistance in recognition of the more costly requirements of recent years.

DIPLOMACY

The budget requests budget authority of $5.3 billion and outlays of $4.5 billion for Diplomacy, $1 billion and $0.4 billion, respectively, more than in 1990. The request includes funding for the conduct of foreign affairs and for public diplomacy.

The conduct of foreign affairs—the day-to-day business of dealing with the governments and peoples of other countries, including the provision of U.S. contributions to a number of international organizations—is carried out by the State Department. Programs that convey information about the United States and its policies, termed "public diplomacy," are conducted by the United States Information Agency (USIA). Public diplomacy also includes

support through the Board for International Broadcasting for Radio Free Europe and Radio Liberty, which provide radio broadcasts to the peoples of Eastern Europe and the Soviet Union.

While there are several initiatives planned in support of Diplomacy, the successful achievement of diplomatic objectives is determined more by the steady application of resources over time. For a number of these programs in 1990, language in appropriations legislation includes a restraint on the spending of appropriated funds. The budget proposes legislative language to remove this restriction.

Conduct of Foreign Affairs

The United States has formal diplomatic representation in 141 countries. Including consulates and missions to international organizations, this representation is carried out at 253 diplomatic posts. During 1991 a number of these posts will be conducting negotiations critical to U.S. interests. Funds sought for the basic salaries and expenses of the State Department are $1.9 billion in budget authority and $1.8 billion in outlays, slightly more than 1990 in real terms. There are, however, two special initiatives regarding international organizations and the construction of an embassy building in Moscow that require substantial additional resources.

Payments to International Institutions.—The United States remains committed to effective participation in international organizations in pursuit of U.S. interests. While democracy and free markets can be encouraged through the bilateral efforts of the United States, international organizations in a multi-polar world will be of increasing importance in consolidating gains, particularly with respect to trans-national problems. The budget therefore requests $1.4 billion in budget authority and $0.9 billion in outlays for these institutions, an increase of $712 million and $187 million, respectively, over 1990. This request includes $794 million for regularly scheduled payments and $620 million to eliminate arrearages in U. S. mandatory contributions to the United Nations and related agencies. The arrearage payments would be made over a 5-year period and they would be directed toward special activities that are mutually agreed upon by the United States and the individual organizations. The U.S. remains committed to continuing the progress made towards fiscal restraints and greater focus on essential programs that has occurred within the international organizations over the past several years.

Reconstruction of the Moscow Embassy.—Soviet espionage has penetrated American Embassy facilities in Moscow. The budget requests $270 million in budget authority and $10 million in outlays to construct, under extraordinary technical standards, a more secure building for diplomatic representation and negotiations in this key capital.

Public Diplomacy

At a time of rapid change in the world, public diplomacy programs are particularly valuable in achieving U.S. foreign policy objectives. It is in the interest of the United States for the peoples of other countries to know in considerable detail the United States, its policies, and its people and culture. Public diplomacy meets these needs with a wide array of activities, including information centers and libraries abroad, traveling exhibits, television placements, and direct television and radio broadcasts.

One of the most effective instruments of public diplomacy has been the people-to-people exchanges for which spending has grown by 147 percent since 1980. In view of this rapid growth, the $154 million of budget authority and $156 million in outlays for exchange programs continues these activities at about the 1990 levels.

Another potent public diplomacy instrument is radio broadcasting through the USIA's Voice of America (VOA), through Radio Free Europe/Radio Liberty (RFE/RL), and through Radio Marti which broadcasts to Cuba. A decade ago the facilities of VOA and RFE/RL were outmoded. As a result, the United States began an ambitious plan to assure that all key targeted audiences could receive a clear broadcast signal. As this effort nears its end, the budget requests $125 million to continue the major modernization for VOA radio broadcasting capacity. Progress payments for new transmitters in Morocco and Thailand are provided. The sharp reduction in budget authority for

the Board for International Broadcasting from $373 million in 1990 to $225 million in 1991 reflects completion of major funding for BIB's radio transmitter in Israel.

INTERNATIONAL FINANCIAL PROGRAMS

This category of international affairs spending supports several major financial institutions or accounts. One of these, the Export-Import Bank, provides loans, guarantees, and insurance to support U.S. export sales, primarily in developing country markets. For 1991, the Bank will provide $500 million in loans and $10.6 billion in guarantees and insurance. The Administration also proposes to retain a $114 million "war chest" grant fund to further the U.S. negotiating objective of substantially reducing foreign tied-aid practices; i.e., combining foreign aid grants with regular export credits to win export sales.

International negotiations are also underway on an increase in International Monetary Fund resources. This could lead to an increase in the U.S. share of these resources, which is called U.S. quota. Because the size of a larger quota is still under negotiation, the budget does not provide funds for it. Any quota increase would require an appropriation of budget authority, but it would not lead to outlays and, therefore, would not increase the deficit.

5-YEAR PROJECTIONS

The table below shows estimated budget authority and outlays for the major elements of the international affairs function.

INTERNATIONAL AFFAIRS: 1989–1995

(In billions of dollars)

	1989 Actual	Estimate				Projection	
		1990	1991	1992	1993	1994	1995
Budget Authority:							
Foreign Aid	13.0	14.0	14.9	15.4	15.8	16.1	16.5
Security Assistance	(7.7)	(8.5)	(8.8)	(9.4)	(9.5)	(9.6)	(10.1)
Development and Humanitarian Assistance	(5.3)	(5.5)	(6.1)	(6.1)	(6.3)	(6.5)	(6.5)
Diplomacy	3.9	4.3	5.3	4.5	4.6	4.7	4.8
Conduct of Foreign Affairs	(2.8)	(2.9)	(4.1)	(3.3)	(3.4)	(3.5)	(3.5)
Public Diplomacy	(1.1)	(1.3)	(1.2)	(1.2)	(1.2)	(1.3)	(1.2)
International Financial Programs	0.4	0.4	−0.2	−0.3	−0.3	−0.3	0.3
Total Budget Authority	17.3	18.6	20.0	19.6	20.1	20.5	21.6
Outlays:							
Foreign Aid	6.3	11.2	14.2	15.4	14.7	15.0	15.6
Security Assistance	(1.5)	(6.3)	(8.8)	(9.8)	(8.8)	(8.7)	(9.2)
Development and Humanitarian Assistance	(4.8)	(4.9)	(5.4)	(5.6)	(5.9)	(6.3)	(6.5)
Diplomacy	4.0	4.1	4.5	4.7	4.7	4.8	4.9
Conduct of Foreign Affairs	(2.9)	(3.0)	(3.2)	(3.4)	(3.5)	(3.6)	(3.6)
Public Diplomacy	(1.1)	(1.2)	(1.3)	(1.3)	(1.3)	(1.3)	(1.3)
International Financial Programs	−0.7	−0.7	−0.5	−0.7	−0.7	−0.9	−0.8
Total Outlays	9.6	14.6	18.2	19.4	18.8	18.9	19.7

III.J. PRESERVING AMERICA'S HERITAGE

One might ask what "preserving America's cultural heritage" may have to do with investing in America's future. To many the connection is not obvious. But the connection is important nonetheless. To the extent that investing in the future tends to emphasize technological advances—as it should—there is a need to assure a counterbalancing attention to aesthetic values. To the extent that it implies a race through time, there is a need for a balancing appreciation of history. And to the extent that America's traditional cultural values have helped make America uniquely strong, it is important that these values be preserved—in order that they may be built upon as America continues to advance.

Direct Federal expenditures and tax incentives for preserving America's cultural heritage are a relatively small part of the budget. For a variety of reasons of political and cultural philosophy, they must remain so. But they should never be viewed as so small that they should be overlooked, nor so insignificant that they might be dismissed.

The budget proposes $757 million in direct funding of activities that preserve, pass on and contribute to the American heritage, $63 million (9 percent) more than enacted in 1990. This direct contribution complements what was in 1988 $1.4 billion in tax expenditures to encourage $866 million in private investments to preserve historic buildings and landscapes and $6.8 billion in private charitable contributions to further the arts, culture and the humanities.

THE IMPORTANCE OF THE HERITAGE

Only through the memory and understanding of our past, and the past of other countries whose civilizations have contributed to ours, and to the world, can we gain a true sense of the present and the ways in which we might influence the future. Yet large numbers of college graduates today cannot distinguish the thoughts of Karl Marx from those in our own Constitution. They have no sense of either Plato's *Republic* or Martin Luther King's "Letter from the Birmingham Jail." Bombarded by the cultural sameness of prime time television and "news" imagery that serves also as entertainment, Americans often know little or nothing of what they have inherited. And, many of the buildings, books, paintings, sculptures, films and videos that record and express the past rot unattended.

America is a nation of immigrants, whose common heritage includes the thinking, art and science of the homelands of those who have come here and are still coming here. It includes the multiple encounters of these immigrants—with the continent, with each other, and with the "Native Americans." It includes the historic buildings and environments that dot our urban and rural landscapes and record our history and how our forbears lived. It includes the communities, customs and folkways—the roots of our many pasts. The preservation, understanding and passing on of the best of this heritage is essential if Americans are to know what it is to be "American."

SUPPORT OF THE HERITAGE

As befits a highly diverse and pluralistic society, our support of the heritage has primarily come from private and local initiatives. This is the tradition that built, and still maintains, many of our greatest universities, museums, concert halls, libraries, and historic buildings and landscapes. But this tradition of private and local support has been complemented, from the beginning of the Republic, with public support for education, and with the advent of the income tax in 1913, tax deductions and credits to encourage private initiative.

Federal tax expenditures for historic preservation came to approximately $150 million in 1988, supporting private investments in this area of approximately $866 million. A recent National Park Service survey shows that 75 percent of these investments would not have been undertaken were it not for the tax credits. For example, five under-used 19th century commercial buildings in Red Wing, Minnesota,

were recently restored at a cost of $3 million making use of Federal tax incentives; this restoration became the primary catalyst in revitalizing the town's historic district.

Private giving to the arts, culture and the humanities has risen—from $3.2 billion in 1980 to $6.8 billion in 1988, according to the American Association of Fundraising Counsel. The economic prosperity of recent years has created the conditions for more support than ever before for preservation of our heritage.

The National Endowments for the Arts and the Humanities and the Institute for Museum Services support the diversity of America's cultural life in cities and towns throughout the country. These efforts provide national leadership and help with undertakings that are less appealing to private initiatives. The Smithsonian Institution and the National Gallery of Art provide exhibitions which give Americans from all parts of the country a sense of the history, science, and art of this and other countries. They also undertake research and fund scholarships. The Historic Preservation Fund Program supports historic preservation through the States and the National Trust for Historic Preservation, and the Advisory Council on Historic Preservation advises the President and Congress on historic preservation matters.

Among the funds provided through this initiative are $19.4 million toward establishment of a new National Museum of the American Indian which, as the President stated in November, will help give our Nation "a new and richer understanding of the heritage, culture, and values of the peoples of the Americas of Indian ancestry."

National Endowment for the Arts

The budget requests $175 million for the National Endowment for the Arts, $4 million more than enacted in 1990. The Arts Endowment provides matching grants to assist the best of our nation's artists and art institutions, directly and through state and local art agencies and regional organizations. The Endowment supports a wide variety of projects that preserve works of art and make them available to the public. It does this through its museum, performing arts and media programs. For example, the Endowment helped establish the National Center for Film and Video Preservation to help stop the loss of this heritage; over half of the films produced prior to 1950 are gone. The Endowment also assists the passing on and understanding of the cultural heritage through its arts education programs.

Much of the increase will support expansion of programs to educate our students to appreciate, preserve and carry on our artistic heritage. The Endowment will also continue to preserve the folk and multi-cultural traditions which make the arts in America so richly diverse.

National Endowment for the Humanities

The budget requests $165 million for the National Endowment for the Humanities, $8 million more than enacted in 1990. The Humanities Endowment provides matching grants to assist humanities instruction in schools and colleges; research and scholarships in the humanities, media and other programs that bring the humanities to the general public; and preservation of humanities research materials. In 1989, the Endowment provided $12.3 million to begin a multi-year program for the preservation of books. The Endowment provided this project $13.3 million in 1990, and the budget includes $14.8 million for 1991. In 1990, the Endowment initiated a $4.1 million national heritage program to improve conservation in cultural collections and train conservators.

The increases help libraries preserve their books and the precious knowledge contained in them; aid scholars to gather and edit the works of such Americans as George Washington, Frederick Douglass, Mark Twain, Jane Addams, and Martin Luther King; and encourage schools, colleges and universities to develop programs that will pass on the words and wisdom of those who have shaped this nation to the next generation.

Institute for Museum Services

The budget requests $24 million for the Institute for Museum Services, $1 million more than enacted in 1990. The Institute for Museum Services provides general support grants to all types of museums (including art, history, science and technology museums), zoos, planetariums, historic houses and botanical gardens. The IMS also makes specific grants to help improve the conservation, care

and management of museum collections, and in 1990 began a new Conservation Assessment Program to assist evaluations of museum collections and environments.

The increase is to help museums improve their operations and better conserve their collections.

Smithsonian Institution

The budget requests $308 million for the Smithsonian Institution, roughly $41 million more than enacted in 1990. Since its founding in 1846, the Smithsonian has in many respects become the "Nation's Museum," as well as a leader in basic research in such fields as astrophysics and tropical biology. Its eleven museums in Washington and the Cooper-Hewitt in New York receive over 30 million visitors a year. The Smithsonian preserves and exhibits 137 million objects, works of art and specimens representing America's cultural, scientific and technological heritage. Its Office of Folklife Programs researches, conserves and presents living folklife traditions from the United States and abroad.

The budget includes $19.4 million toward establishment of a new National Museum of the American Indian. The funds will be used to plan for the construction of the Museum on the Mall in Washington; to prepare a satellite exhibition and education center in the Old United States Custom House in New York; to design a collections storage and research facility in Suitland, Maryland; to transfer collections and staff from the Museum of the American Indian in New York; to provide for initial operating requirements; and to preserve and repatriate Indian artifacts and remains. The new Museum will house the Heye Foundation's collection of Indian artifacts from all parts of the Western Hemisphere. When completed in the late 1990's, the Museum of the American Indian will preserve and exhibit the many and varied contributions of the first "Americans."

The request also includes $1.5 million for the Columbus Quincentennary Program which will commemorate the voyages of Columbus and the subsequent encounters between Europeans, Africans and the indigenous peoples of the Americas.

National Gallery of Art

The budget requests $49 million for the National Gallery of Art, $7 million more than enacted in 1990. The National Gallery preserves and exhibits works of art from all cultures for the benefit of 6–7 million visitors annually. Its educational programs reached an estimated 80 million people in 1989, providing young people and adults with access to, and understanding of, some of the great masterworks of civilization.

The increase includes $2 million for *Circa 1492: Art in the Age of Exploration* to celebrate the 500th anniversary of Columbus' voyage to America, an exhibition which will present through works of art an image of the world as it existed in the late 15th century. The exhibition will draw parallels between European Renaissance achievements in geography, navigation and discovery and display the arts of China, Japan, India and Africa of that period as a way of understanding the encounter among these cultures at the time of the discovery of the Western Hemisphere by the Eastern Hemisphere.

Historic Preservation Fund Program (Department of the Interior)

The budget requests $34 million for the Historic Preservation Fund Program of the National Park Service, $1.4 million more than enacted in 1990. The Historic Preservation Fund provides matching grants to States and the National Trust for Historic Preservation for historic preservation planning, projects and activities. The increase will provide for additional surveys and inventories of historic properties for potential inclusion on the National Register of Historic Places; advice and assistance to State and local planning and development agencies whose decisions affect historic properties; and technical assistance to private sector architects and developers seeking to meet the Secretary of the Interior's standards for historic preservation construction work to qualify for tax credits.

Advisory Council on Historic Preservation

The Advisory Council on Historic Preservation (ACHP) advises the President and Congress on historic preservation matters, and formally comments on Federal, federally assisted,

and federally licensed undertakings that may affect historic properties. The 1991 budget requests $2.2 million, an increase of 18 percent over the 1990 enacted level. The increase will allow ACHP to meet increasing project review caseloads and to undertake long-term improvements in the Historic Preservation Program.

FUNDING SUMMARY

(Budget authority in millions of dollars)

	1989	1990	1991
National Endowment for the Arts	169	171	175
National Endowment for the Humanities	153	157	165
Institute for Museum Services	22	23	24
Smithsonian Institution	246	267	308
National Gallery of Art	39	42	49
Historic Preservation Fund Program (Department of the Interior)	30	32	34
Advisory Council on Historic Preservation	2	2	2
Total	661	694	757

IV. ADVANCING STATES AS LABORATORIES

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> "It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country." Justice Louis D. Brandeis, dissenting in *New State Ice Co. v. Liebmann*, 1932.

More than many realize, State and local governments are today performing the laboratory function cited by Justice Brandeis in a wide variety of areas—from education to transportation, from child care to the environment. In many cases Federal funding is supporting demonstration projects; in other cases Washington is granting waivers from normal Federal rules to permit experimentation. But in numerous instances States and localities are moving on their own, with their own funds, to try new and innovative approaches to problem-solving.

This blossoming of State and local innovation is welcome. As the intractability of some problems, such as those associated with poverty, attests, national approaches tried over the past 30 years have had a mixed record of success at best. Despite a level of Federal taxation which, at about 19.5 percent of the gross national product, is higher now than has been the historic norm in the past 40 years, the Federal budget is under severe and well-recognized constraints. This is not to say that the fiscal condition of State and local governments is "easy", but their budgetary situation is not dominated by large and persistent deficits as has been the case with the Federal budget.

Much more than relative fiscal capacity is important in consideration of "States as laboratories." Until quite recently a case could be made in many areas of government policy and action that a national approach, with national rules and standards, was warranted. This was so because some States departed widely from national norms in such areas as racial segregation, and some were too poor to accomplish as much as may have been judged appropriate. A lot has changed in the past quarter century.

The "one man, one vote" decisions of the Supreme Court have greatly altered State legislatures, giving greater representation to urban areas. The civil rights revolution has been one of the seminal events of the twentieth century; to cite just one aspect of the revolution, elected black officials in the South are now commonplace. State government structures have been modernized. Income disparities among the States of earlier in this century have narrowed, and the sustained economic expansion has raised the income levels of all the States.

The U.S. Advisory Commission on Intergovernmental Relations, in a 1985 report entitled "The Question of State Government Capability", made an unequivocal judgment: "This study concludes that State governments have been transformed in almost every facet of their structure and operations."

Assessing the effects of the reductions in some Federal grant-in-aid programs in the early 1980's under President Reagan, Richard P. Nathan and Fred C. Doolittle stated: "There is evidence ... that Reagan's federalism reforms have stimulated and are continuing to stimulate state governments to increase their efforts to meet domestic needs in the functional areas in which the national government either was cutting grants-in-aid or threatening to do so." In the case of "social programs" in particular, Nathan and Doolittle cited a trend toward some retrenchment in Washington and then, based on their reporting on developments in numerous State and local governments, concluded:

> "In conservative periods, the supporters of social programs are likely to find that in many instances their best strategy is a devolutionary one. They may well find in particular areas of domestic policy that the best approach is to seek support from those States and major local governments which for various reasons are sympathetic to proposals for increased social spending."

The prevailing philosophy varies by State, of course, which is the nature of a Federal system. However, by almost any measure the extremes among the States have narrowed. Those concerned about the segments of our population who have been left behind need no

longer turn to Washington as the only source of redress.

The President's budget continues and expands the many-sided effort of the Federal Government to foster and finance experimentation in the States. In the areas of education and low-income programs in particular, to be described below, the President's program supports important innovations and experiments, including steps to reduce Federal controls and regulations in order to give State Governors and legislatures greater latitude to try new methods.

Apart from these efforts, the Administration's support of the principles of federalism is expressed in Executive Order 12612, issued in 1987 and personally endorsed by President Bush in a speech to the National Governors Association in 1989. This is designed to make sure that proposed policies and legislation conform with federalism principles, including maximum discretion to State and local governments.

An additional initiative is a test, run jointly by the Office of Management and Budget and the National Governors Association, of using a single Federal administrative grant for reimbursing State costs of administering Food Stamps, Aid to Families with Dependent Children, and Medicaid. The test will be carried out in five States beginning in April 1990.

The remainder of this section describes, in various areas of governmental concern, several of the many examples of innovation at the State and local level—some aided by Federal grants, some made possible by Federal statutory or administrative waivers and others entirely at local inititative. The picture is one of much more innovative activity than is often assumed in Washington. It is a picture of creative experimentation—not social engineering but the natural flowering of variety inherent in a healthy federal system.

It is a picture that merits highlighting—and Federal Government support.

TRANSPORTATION

Toll Roads.—While certainly not a new phenomenon in the United States, toll roads are now experiencing a resurgence in popularity. As roadbuilding becomes increasingly expensive and congestion worsens, toll roads offer a viable alternative to many States otherwise unable to afford highway projects. At present 26 States have toll road facilities covering almost 5000 miles, and more are contemplated. According to the International Bridge, Tunnel and Turnpike Association, 17 States are currently considering $8.6 billion worth of toll road proposals totaling 902 miles.

In an example of strictly privately financed, for-profit toll roads, Virginia's Commonwealth Transportation Board in 1989 approved the longest private toll road in the country, and the first such road in Virginia in 173 years. The road will be a 14 mile extension of the existing and successful Dulles Toll Road, which runs parallel to the toll-free access road to Dulles International Airport.

Where once toll roads were largely concentrated in the East, Sunbelt States, including Texas and California, are now beginning to experiment with the concept as well. For toll road users, transportation costs will be higher, but travel should be safer and quicker.

In general, the Federal aid highway law prohibits spending Federal funds for new toll roads. But as a demonstration, the 1987 reauthorization permitted Federal financing for up to 35 percent of the cost of seven non-interstate toll road projects, and two more were added in subsequent appropriation bills. These nine projects are now in various stages of approval. In the next reauthorization, due to be taken up in the 1991 session of Congress, the Administration will look favorably upon innovative means of financing highways, including toll roads.

Airport Financing.—The 1987 reauthorization of the Airport Grant Program included a 2-year pilot program allowing three States more administrative control over airport grants. Starting in 1990 Illinois, North Carolina and Missouri will assume sole responsibility for distributing airport development funds and master planning for all nonprimary airports in their States, on the assumption that they are closer than the Federal Government to airport problems and are the best judge of priorities. A report will be made to Congress on the results

of this demonstration, with the possibility of expansion to the rest of the country.

States, and local airport authorities, are also looking at alternatives to Federal funding for airport construction and development projects. One prominent alternative is the imposition of a "passenger facility charge" or PFC. Although PFCs are levied in 138 foreign nations, in 1973 Congress prohibited their use in the United States. The Department of Transportation estimates that by imposing an average PFC of $3 per passenger, almost 60 major airports would collect more than twice what they would receive in Federal airport formula grants.

Airports favor PFCs for several reasons: no Federal appropriations uncertainties; an independent revenue stream controlled by the airports; and ability to finance additional airport capacity. The Administration proposal for reauthorizing the Airport Grant Program will include a provision abolishing the prohibition on local airport fees.

High Speed Rail.—States and localities have received $4 million from the Department of Transportation's Federal Railroad Administration (FRA) to perform feasibility studies of high-speed rail systems in their areas. In many cases, this "seed money" has resulted in the formation of special State/local commissions and authorities to select franchisees for the construction and operation of high-speed rail systems. While no State has yet awarded a franchise, several are well along in the process. The 1991 budget includes funding for research on magnetic levitation high-speed trains, or "maglev."

No Federal financing for construction or operations of the high-speed rail projects is being proposed or requested. Financing instead will come from innovative sources, such as the grant of real estate development rights along the proposed Miami-Orlando-Tampa high speed rail route in Florida. The Ohio High Speed Rail Authority has eminent domain powers and $2 billion in tax exempt bonding authority to build a rail line linking Cincinnati, Columbus and Cleveland. Among other projects under consideration are those that would link Las Vegas and Los Angeles; Dallas, Houston and San Antonio; and a 300 m.p.h., 20-mile maglev link between Orlando Airport and Disney World in Florida.

Mass Transit.—As the cost of subways mounts and voters reject transit bond issues, cities are turning again to buses and are innovating in several ways, ranging from use of private service to new fuels. Buses are not glamourous, but a bus that will last 12–15 years, carry 50 passengers, and provide a safe, flexible route costs about $200,000; this compares with a cost of $10 million to $300 million per mile to construct rail rapid transit. Studies suggest that while businesses and developers favor high-tech transit, the average taxpayer is unwilling and unable to foot the bill.

Of necessity, cities have returned to the drawing board to come up with new plans in which expensive rail systems play a lesser role and buses are more prominent. For example, Dallas has scaled down the rail part of its transportation package by about a third and balanced the package with a much improved bus system. It includes new busways for express bus service, inter-suburb bus hubs where routes converge on a central point, and house to house pick-up by mini-van. Another approach, used in the Northern Virginia suburbs of Washington, D.C. and elsewhere, is to encourage use of carpools, vanpools, and buses by reserving special traffic-free highway lanes for these vehicles.

Private bus service has been successful in a number of cities, sometimes for only a portion of the total transit network. Several localities have used the method of competitive contracting, with the public transit agency competing against private bidders. Studies by the Federal Urban Mass Transit Administration have indicated that private companies can deliver mass transit services 20 to 50 percent less expensively than public agencies, largely because of a difference in labor costs. As an example, Denver was mandated by the Colorado legislature in 1988 to convert 20 per cent of its lines to private service.

An alternative to commuting by personal automobiles has attractions for a variety of reasons, not least of which is reducing air pollution. Denver, Los Angeles, New York and Seattle are testing UMTA-funded demonstration buses that run on compressed natural gas or methanol.

Drunk Driving.—The budget proposes to double funding for the recently established Drunk Driving Prevention program to $8 million. This program provides grants to States that adopt specified measures to curb drunk driving, such as suspension of drivers licenses, and will test which enforcement measures are most successful.

EDUCATION

Awareness of the serious deficiencies of American public school education hit the Nation with the force of an explosion in the 1980s. Publication in 1983 of the report entitled "A Nation at Risk" gave impetus to movements for reform that were beginning to crop up in States and localities across the country. A high point of the reform effort was the Educational Summit meeting of President Bush and State Governors in Charlottesville, VA in September 1989.

The problem of poor educational performance is a troublesome one for the Federal government because elementary and secondary education are almost entirely the responsibility of State and local governments and school boards. Federal grants to help finance and improve elementary and secondary education, almost non-existent until the mid-1960s, have risen to $10 billion in 1990, but this is only about 7 percent of the national total. The bulk of the Federal funds goes to programs aimed at improving the education of children with disadvantages of various kinds. Beyond that, the Federal government can contribute best by fostering, and in some cases helping to finance, educational innovation in the States; helping to evaluate, through improved statistics and testing, the actual status of educational performance; and research and dissemination of information on the myriad of experiments that are going on at the State level, assessing what works and what does not. The 1991 budget, for example, contains $3 million to evaluate local initiatives and disseminate the results.

Finally, the Federal government can remove barriers to innovation and experimentation that arise from its own rules and regulations, many of them stemming from statutory requirements. As a follow-on to the Charlottesville Summit, the Administration will support legislation to grant more flexibility to the States in use of Federal funds, with safeguards to assure that services are provided to the targeted populations. The flexibility would be conditioned on establishment of objectively measurable goals for improved performance.

What follows is a listing of a few of the educational innovations and changes taking place at the State and local level. Also included is a sampling of demonstrations and experiments proposed to be financed by the Federal government in this budget.

Minnesota Choice Options.—The principal innovation, among several, permits students in grades kindergarten through 12 to apply to attend school in any school district in the State. Other new options include permitting 11th and 12th graders to attend a postsecondary institution full or part-time and obtain high school credit; establishment of Area Learning Centers to provide year-round, individualized education for students aged 12 to 21; and "Diploma Opportunities for Adults", an opportunity for people 21 and over to complete high school. The U.S. and Minnesota Departments of Education are conducting a joint 3-year study of the results of several of these innovations, including the Statewide choice-of-school option.

New Haven Model Schools.—Dr. James Comer of the Yale Child Study Center began in 1968 to try to transform two elementary schools in a low-income, predominantly minority neighborhood, principally through a comprehensive reform in the management of the schools. When the experiment began the two schools ranked 32nd and 33rd out of 33 New Haven schools in reading and math achievement and had the city's worst behavior and attendance problems. By the mid-1980s the schools ranked third and fifth in fourth-grade test scores, and one of the two led the city in school attendance for four years in one 5-year period.

Maryland Accreditation System.—In an innovation that is just beginning, all of the State's 1,200 public schools will by 1992 be evaluated and rated on performance by a State team of inspectors. There will be financial rewards for schools that are rated superior and penalties, including the possibility of takeover by the State, for low-performing schools. In addition,

the State Board of Education has decided to change the State's testing system to measure better how students perform, and it has opened the way to teacher certification of college graduates without formal teacher training programs.

Washington "ECEAP"—Early Childhood Education and Assistance Program..—This is a variation on the federally financed Head Start program for disadvantaged children. It involves special academic requirements for teachers and school aides, and correspondingly higher salaries, and it also places special emphasis on involvement of parents. Among the earliest advocates, urging the State legislature to fund the program, was the Washington Roundtable, an organization of leading business executives concerned about the State's future work force.

Rhode Island "Crusade for Higher Education".—To help induce at-risk children to stay in school, the State will offer them tuition assistance at in-State colleges in return for a written commitment to obey the law, avoid early parenthood and refrain from drugs. The agreement is to be offered to third-graders and their parents. While all children are asked to join, the scholarship assistance will be available only to those in financial need. There are somewhat similar programs in New York, Louisiana and New Mexico.

Federally Financed Experiments.—While most innovation has sprung up spontaneously at the State and local level, the Administration is moving on several fronts to give a further boost to new means of tackling the education problem. The following are several of the grants proposed in the 1991 budget:

- *Alternative Certification for Teachers and Principals.*—The budget proposes $25 million for grants to States to design and carry out programs through which persons can become teachers and principals in ways other than the traditional certification routes.
- *Dropout Prevention.*—Special projects in local school systems to reduce dropout rates of secondary school students will be financed by grants totaling $45 million, supplemented by $5 million for related research.
- *Emergency Drug Grants.*—These grants go to local school districts with the worst drug problems to devise innovative approaches to reducing drug abuse. This is one aspect of the President's drug program, and will total a minimum of $25 million.
- *Training of School Principals.*—The budget proposes $25 million to support a new initiative to improve the training of principals-to-be. The program will include a short period of residential training and a year working with a successful "exemplar" principal to learn, first-hand, how to manage schools.

COMBATTING POVERTY

In no area of public policy is innovation and experimentation more widespread than in the often-frustrating effort to deal with the causes and effects of poverty. The Social Security Act of 1935 itself was the product of several decades of State innovation in development of "mothers' aid" for widows with children and programs for aid to the aged and blind. More recently, State successes with welfare-to-work demonstration programs were instrumental in the enactment in 1988 of the most important reform of Aid to Families with Dependent Children (AFDC) since its inception in 1935. State innovation is continuing to receive encouragement from the interagency Low Income Opportunity Board established in 1987 in the White House and reestablished by President Bush early in his Administration.

The Federal contribution to experimentation at the State level has been twofold—direct financing of some demonstrations and, probably more important, the grant of flexibility to the States under various statutes, including the Social Security Act, to permit them to try new approaches that would not be permitted under the basic laws. This flexibility is provided in the statutes themselves or through a process of waivers. The Low Income Opportunity Board screens and coordinates the grant of waivers by various agencies under different statutes.

During the first half of the 1980's a combination of Congressional willingness to allow States more flexibility, strong support by the Administration, and State efforts to find ways

to help welfare families become independent laid the groundwork for the Family Support Act of 1988 (often called "welfare reform"). Both demonstrations and waivers were used to test new approaches. In either case, the essential ingredients were States with ideas about ways to do things better and determination to follow an experiment through to its conclusion. Not all of the welfare-to-work experiments produced encouraging results but enough did to persuade the Administration and Congress to change the underlying Federal law. As an example, States showed that welfare mothers, including those with preschool children, could be required to participate in work-related activities, with some success in later placement in gainful employment.

Currently the States are busy with the task of implementing the new law. However, experimentation and innovation have not stopped. With the support of the Low Income Opportunity Board, a number of States are continuing to test alternative ways of helping to move welfare families toward self-support.

What follows is a sampling of ideas and projects that are being tried across the country. It should be noted that some of these experiments are controversial, some may not work, others may prove to cost too much for the benefits produced. That is the nature of "States as laboratories". As any scientist knows, the road to success is marked by numerous laboratory failures. The sampling below is meant to illustrate the breadth of initiatives, not to endorse specific projects or approaches.

Wisconsin "Learnfare", Linking AFDC and School Attendance.—Under this controversial experiment, made possible by a Federal waiver, a welfare family with teenage children has its AFDC benefit reduced if the child drops out of school, defined as missing three days of school in a month without a valid excuse. Supporters see this requirement as a necessary step in breaking the cycle of welfare dependency by making certain that the children get an education. But there are many critics. Some welfare families reportedly have resorted to various fraudulent excuses for their children who are not in school, including forgery. However the experiment turns out, new knowledge of what works and what doesn't will have been acquired.

Minnesota "Family Investment Plan".—In December of 1989 the President signed bills providing special authority for a demonstration of the effects of intensive social and educational services and expanded cash and noncash benefits for low-income families in several localities in Minnesota. Among other features, the "Family Investment Plan" will provide a consolidated cash grant combining AFDC and food stamps, and will extend medicaid and child care assistance to non-AFDC households eligible for food stamps.

New York "Child Assistance Program".—The State began a demonstration in 1988 aimed at replacing welfare payments with increased efforts by the parents to support their children. New emphasis upon obtaining child support from absent parents is combined with a supplemental benefit designed to increase incentives for the custodial parent to seek and hold a job. To enter the program a single parent must have obtained a court order for child support, a precondition which the State hopes will increase efforts by custodial parents to establish paternity and obtain support orders. The supplemental benefits are calculated according to a formula which, in comparison to AFDC, permits families to retain more of their benefit as their earnings increase. The demonstration, under way in several urban and rural sites, will last 3 years and includes a rigorous evaluation designed to ensure that the effects of the experiment will be known precisely.

Youth Opportunities Unlimited (YOU).—This proposed Labor Department program, to be tested in a maximum of 40 high-poverty inner city and rural areas, involves "challenge grants" to areas that offer a comprehensive package of services and a specific objective for low-income, at-risk youth, such as high school completion. Job training will be a major component but not the only one. The local grantee will have to enlist the support of the private sector, local government agencies and school boards. The Federal funds will total $50 million annually, and successful grantees can receive funds for up to 3 years.

Ohio "Project Learn".—In a program directed specifically at teenage parents, the State

will offer a bonus under AFDC of $62 a month to young welfare mothers (and fathers if present) who remain in school or go back to school. That is the carrot. The stick is a corresponding reduction of the grant for teenage parents who refuse to stay in school.

New Jersey Unemployment Compensation.—This experiment does not involve poverty as such but, rather, the problem of unemployment of persons who normally work. The State identifed about 8,500 workers collecting unemployment compensation who had lost their jobs because of layoffs, plant closings and similar events and who were regarded as likely to have difficulties finding a new job. One group was offered intensive job search assistance alone; a second group received training or relocation assistance in addition to job search; and the third group was helped with job search and also received a cash bonus if they found full-time work within 12 weeks. None of these approaches "paid for themselves" in the sense of a net saving to the unemployment compensation system, but the first and third were found to have net benefits to society as a whole. The cash reemployment bonus idea is now being tested in Pennsylvania.

Through the Low Income Opportunity Board and other approaches, including proposed statutory changes as needed, the Administration will continue to work with the States in seeking new approaches to the problem of poverty. Whatever is done, it is already clear that experimentation at the local level is an indispensable element in finding out what works.

HEALTH

As is widely recognized, the health care system in the United States is flawed in two different and opposite respects: Its costs are higher than in other nations and are rising rapidly; and yet life expectancy, infant mortality, and other measures of health status are less favorable in the United States than in many other industrialized societies, and a sizeable minority of the population is not covered by public or private health insurance. No one actor in the health drama can create a solution, but as in other areas ideas are bubbling up from the States.

Medicaid in Oregon.—One of the most innovative health care proposals in any of the States comes from Oregon. The State proposes to expand greatly the coverage of the medicaid program (jointly financed by the Federal Government and the States) to cover the entire State population whose incomes are below the poverty line, but to limit the cost by assuring only a "basic" or "adequate" package of medical services, with additional services to be provided only if funds are available. Health care services would be ranked by a Health Services Commission to establish a set of priorities.

The sponsor of the bill, who is a medical doctor, has posed the issue in these terms: Given a limit on resources, the choice is between expanding the eligible population and placing some limit on the benefits, or holding the benefits constant and limiting the eligible population. He has chosen the former.

The Oregon plan will require a Federal waiver of the normal medicaid rules, either administrative or statutory. It is controversial. Among other things, questions arise whether it will be as cost-neutral as it purports to be. But it clearly breaks new ground in seeking to deal with a major problem. The Administration is studying the plan.

"OB Access" in California.—Infant mortality is higher in the United States than in most other industrialized countries. A problem primarily of low-income mothers and their babies, infant mortality, it has been found, requires for a solution more than just making available adequate nutrition or even offering prenatal care. Personal contact and other services are often required, to assure that the nutrition and care are sought and actually delivered to those who need it.

The California OB Access program (short for Access to Obstetrical Care) is based on this principle. It began in 13 counties with a high incidence of poverty and involves a comprehensive package of services. The pilot program revealed that the percentage of babies with low birthweight was 35 percent lower among OB Access participants than in the medicaid population that was not served. As a result of these findings the legislature enacted and the Governor signed legislation making the program Statewide starting in 1987.

Care of the Frail Elderly at Home.—In most cases elderly persons do not want to enter nursing homes, even if they can afford it. Their families, too, often prefer to have them at home rather than in a nursing home. But care of the frail elderly can be a time-consuming and exhausting task for the family member or members who undertake it.

In an effort to find a midway solution between full-fledged, expensive professional care in the home and no help at all for the family members, New Jersey, with help from a Federal demonstration grant, is experimenting with "respite care". It involves the use of professionals on a part-time basis whose purpose is not principally to serve the frail elderly person but rather to relieve the burdens of the family members who are providing care. It can include periodic home visits, taking the elderly person out of the home for a few hours and other services.

An important purpose of the experiment is to ascertain whether this part-time assistance can reduce or eliminate the need for long-term care in a nursing home. Even if the demonstration shows only that respite care reduces premature placement in nursing homes, it will have proved valuable.

Medical Malpractice Liability.—States are experimenting with new approaches to the problem of rising insurance costs for medical malpractice. More traditional efforts at tort reform, adopted in some degree by nearly all States in the past 15 years, have had only modest effects on the frequency and severity of claims, according to a study by the Institute of Medicine. The newer approaches are controversial, and they could prove costly to taxpayers. Under a 1989 law in Texas the State itself will provide coverage for doctors whose caseload includes at least 10 percent charity cases; such cases include those under medicaid and other programs providing health care to the poor. In West Virginia, a new law provides that the first $1 million of liability to a pregnant medicaid client is taken over by a State agency.

ENVIRONMENT

Although in some areas of governmental policy the consistency imposed by Federal laws or regulations is often desirable, complete uniformity is neither necessary nor desirable. In developing environmental programs, States and local governments frequently have designed regulations that are responsive to their communities' unique needs, and have experimented with creative ideas that may percolate into constructive new national policies.

Solid Waste.—Safe and efficient disposal of solid waste will be one of the great environmental challenges of the 1990s. The development of effective waste management techniques is a task primarily of State and local governments. To deal best with the growing mountain of waste, communities usually require integrated plans involving source reduction, source separation, recycling, incineration and landfills. In the past year, 134 new recycling laws have been passed by 38 States.

Acting on the principle that reduction of the waste stream is the preferred approach, the coalition of Northeast Governors has formed a "packaging task force" to encourage manufacturers to develop new packaging designs that reduce the waste generated by their products.

Numerous States and localities have initiated "curbside separation" programs that facilitate recycling, clean and efficient combustion, and the safe use of landfills. But separation is not a panacea. New Jersey has implemented a successful program that requires separation only of materials such as aluminum and paper, where markets exist for the recycled waste.

By contrast, the recent growth of newspaper recycling has created gluts in the newsprint supply that greatly exceed demand and discourage the entry of new entrants into the recycling markets. To help alleviate this problem, Florida now imposes a 10 percent tax on virgin newsprint and provides tax credits for the use of recycled newsprint. California and Connecticut require newspapers to use minimum percentages of recycled newsprint. These efforts, backed by the support of the American Newspaper Publishers Association, have helped spur the growth of markets that is essential to the continued success of newspaper recycling.

Modern incineration facilities can be cleaner and safer than landfills, and are an important alternative to them. There are now more than

100 municipal incinerators in operation, two-thirds of which recover energy for local use, and another 200 incinerators are planned. Baltimore, for example, burns 2,250 pounds per day, recovering 55 megawatts of electricity that is sold to the local utility. New scrubbing and high temperature combustion technologies permit safe emissions levels in compliance with clean air requirements.

Even smaller communities have found that they can economically promote sound environmental policy by developing comprehensive solid waste plans. Winona, MN, a community of 45,000, has had an integrated solid waste plan since 1981. The county program includes public education; mandatory curbside separation of six types of waste; recycling of tires and appliances; composting; and incineration. There are plans to build a modular incineration plant and to recycle the waste ash. Within 5 years less than 10 percent of the community waste stream will go to landfills, and over 40 percent will be recycled.

Non-point Source Water Programs and Wetlands Protection.—States and regions have widely divergent causes of non-point source water pollution and they have taken different approaches to address the problem.

For example, the States that make up the Chesapeake Bay watershed have joined forces to reduce pollutants by 40 percent in order to protect water quality and preserve the rich living resources of the Bay. Maryland, Delaware, and Virginia have successfully tightened pollution controls for cities and for farmland runoff, strengthened wetland protection, and instituted tighter land use control. The result has been a cleaner bay and a resurgence of aquatic life.

Iowa, a leading agricultural State, has taken an aggressive approach to its groundwater pollution problems that aims at controlling pesticide and fertilizer contamination. The State has increased pesticide and fertilizer fees and devoted those resources to research on farming with reduced use of chemicals.

Washington has dedicated taxes on tobacco products and pollution control equipment to finance water pollution control, wastewater management, and groundwater runoff projects in an effort to maintain the quality of the Puget Sound.

Hazardous Waste Cleanup.—While Superfund, the Resource Conservation and Recovery Act (RCRA), and other Federal programs have made progress in preventing and cleaning up toxic wastes, some States have added innovative cleanup efforts of their own. New Jersey, for example, has induced polluters to clean up sites by requiring environmental audits before real estate can be sold.

RCRA requires the cleanup of leaking underground storage tanks, and 33 States have passed laws to supplement the Federal law. Ohio, Maine, Pennsylvania, Vermont, and New Jersey have established insurance funds or loan pools to assist tank owners with the cleanup. Ohio has almost 80,000 tanks, and many owners would presumably have delayed or avoided the costly cleanup without the State's assistance and encouragement.

CHILD CARE

Nearly every State has addressed the child care needs of working families by one means or another. For example, 28 States and the District of Columbia subsidize parents' child care expenses by providing deductions or credits on State income taxes. Thirteen States now give tax breaks to employers who provide specified child care benefits for their employees, such as information services, assistance with child care costs, or on-site child care centers. Twenty-six States and the District of Columbia finance early childhood education programs, and 11 of these States have lengthened the hours of their pre-school programs. States, and local school districts, have established a variety of before- and after-school programs for children of school age. Finally, almost all of the States use a portion of their Federal social services block grant (Title XX) for child care and related activities.

Examples of child care developments in several States and localties follow.

Ohio.—The legislature in 1989 voted to more than double child care spending. This funding is targeted mainly at low-income parents, including teenagers who need child care assistance to complete school.

New York.—The State has the Nation's largest network of model employer child care centers, operated by State agencies and State universities.

Minnesota.—An increase of $18.5 million for the 1990-91 biennium will go for such purposes as subsidies for low-income working families to help them pay for child care, child care subsidies for low-income college students, and training for child care providers.

California.—This State has the Nation's most extensive "resource and referral" network—local service agencies that help parents locate child care. There are 65 agencies in all, at least one in each of the State's 58 counties.

Indiana.—The State cigarette tax was increased half a cent per pack, with the additional revenue designated for school-age child care. Additionally, the Indianapolis Department of Public Safety, whose concern is crime, conducts special seminars for "latchkey" children—those who are at home by themselves after school. A Latchkey Task Force teaches children first aid, what to do in case of fire or weather emergency, and even how to prepare nutritious snacks.

Florida.—The legislature last year doubled appropriations for pre-kindergarten programs and funded 6,000 additional child care slots for children of low-income working families. The package included other elements such as training of child care workers.

Wisconsin.—In 1989 the legislature added a credit to the State income tax that benefits all low-income working families with children, whether or not they have documented child care expenses. The credit increases with family size and is refundable, so that it is available to families who do not pay income tax.

CONCLUSION

Across the broad range of domestic policy, the Administration will:

- continue to encourage the "States as laboratories;"
- work with Governors, mayors, county officials, and their various associations to foster innovation and identify obstacles to it;
- ensure sound evaluation of experiments and publicize lessons learned; and
- together with State and local governments, facilitate the more general application of the "state of the art" where innovation has shown the way to better results.

V. REFORMING MANDATORY PROGRAMS

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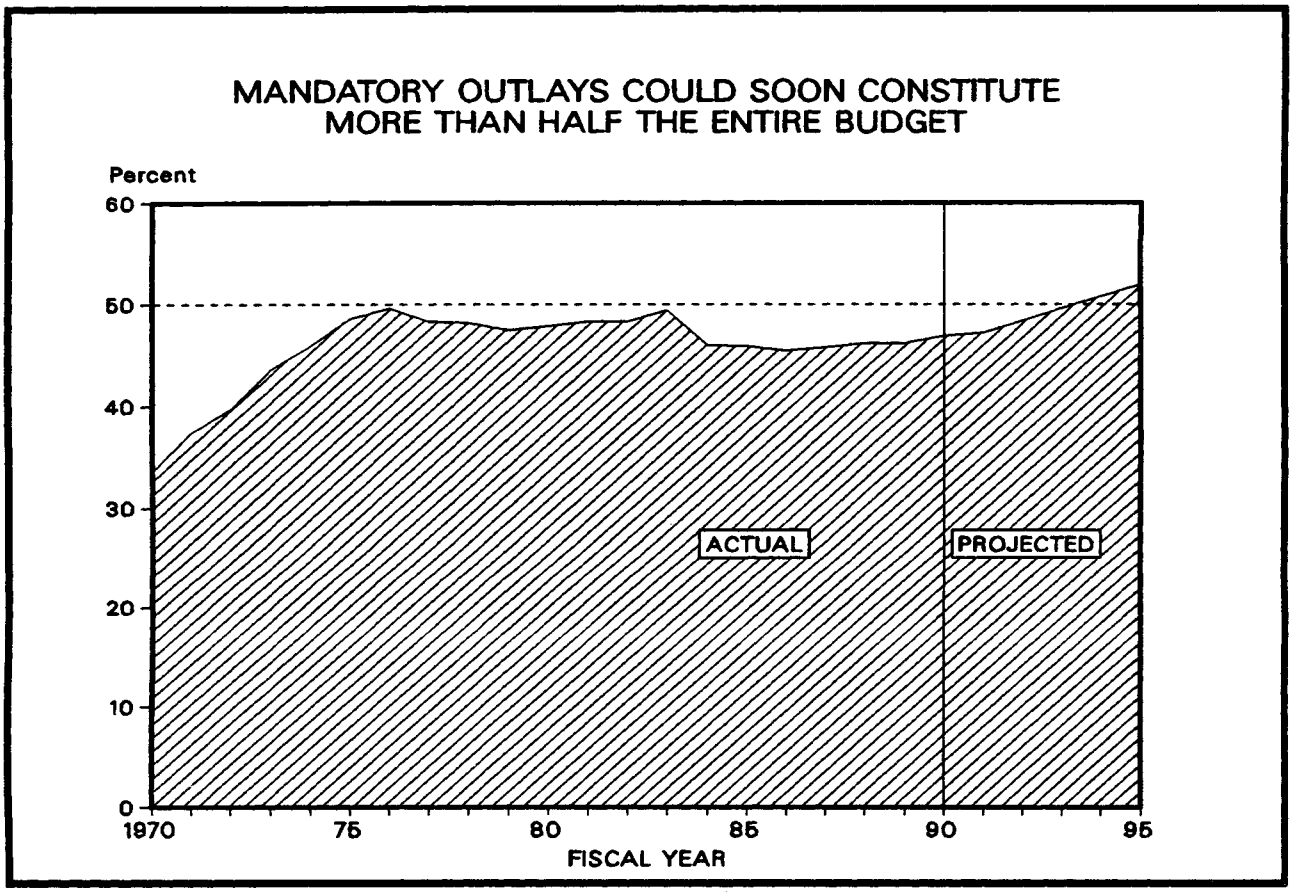
OVERVIEW

By 1994, mandatory program spending is projected to constitute more than half of all Federal spending for the first time in history.

Mandatory spending encompasses entitlements and a wide variety of other benefits, services, and subsidies ranging from social services to farm supports. The element common to all mandatory spending is that it tends to be "automatic." It is not normally controlled through the annual congressional appropriations process in the way other spending, termed "discretionary," is. Spending on a discretionary program grows only if, after considering other spending priorities and the need to reduce the Federal deficit, Congress takes a positive action. Mandatory spending usually increases automatically, due to inflation, changes in the beneficiary populations served, and other factors. In the absence of legislative change, mandatory spending is projected to increase more than $200 million each month between 1990 and 1995.



The sheer size of the mandatory program universe dictates careful attention to this spending, which if allowed to grow unexamined can limit the Nation's future in several ways. First, spending on current consumption absorbs resources that otherwise might be devoted to public or private investment. Second, by adding to the deficit, mandatory spending makes claims upon future generations to pay for today's consumption. Third, because future

mandatory spending is usually "automatic," these programs tend to lock future voters and their representatives into spending priorities established in the past.

Much of mandatory spending is intended to fulfill some of our most important commitments as a Nation, such as those to Social Security recipients, low-income Americans, and our Nation's farmers and veterans. Careful examination of this spending is needed to ensure that critical needs are being met as effectively and efficiently as possible, that programs do not have unintended adverse consequences, and that adjustments are made to take into account trends that could threaten the very existence of some of these programs.

Mandatory Program Highlights

Reforms to ensure the long term integrity of the Social Security Trust Funds, to put mandatory housing and education loan programs on a sounder financial footing, and to reduce the costs of protecting farmers against crop losses are discussed in Part VI of this Section. In the pages that follow, reforms in mandatory spending for health programs and for income support and other subsidies are discussed. Highlights of mandatory spending covered in this Part include the following:

- Full payment of Social Security benefits and extension of Social Security protection to employees of State and local governments who are not now covered by any public retirement program.
- Full payment of benefits provided to low-income families and individuals through the Supplemental Security Income, Aid to Families with Dependent Children (AFDC), and Food Stamp programs.
- Two measures to assist families trying to achieve independence from welfare: full funding of the Job Opportunities and Basic Skills (JOBS) program, which serves AFDC recipients, and expansion of child support enforcement services to families in welfare programs where these services are not now an integral program component.
- Proposals to provide additional assistance through the tax system to help low-income families with children meet their child care needs.
- Increases in School Lunch Program subsidies for children from low-income families, funded by reductions in subsidies now provided to children from families with incomes higher than three and one-half times the poverty level.
- Full funding of the Social Services Block Grant at $2.8 billion, a level that reflects the recently enacted $100 million increase in the authorization for this program.
- Proposals in Medicare and Medicaid to provide more appropriate care, rather than simply more care, to the aged, disabled and poor through expanded use of so-called "managed care," with resulting increases in funding for Medicaid over current law levels.

Other reforms are proposed to bring program practices closer to the more efficient practices of the private sector, to reduce the market-distorting effects of Federal subsidies, to correct perverse incentives in program operations, and to target a greater share of assistance to lower income recipients.

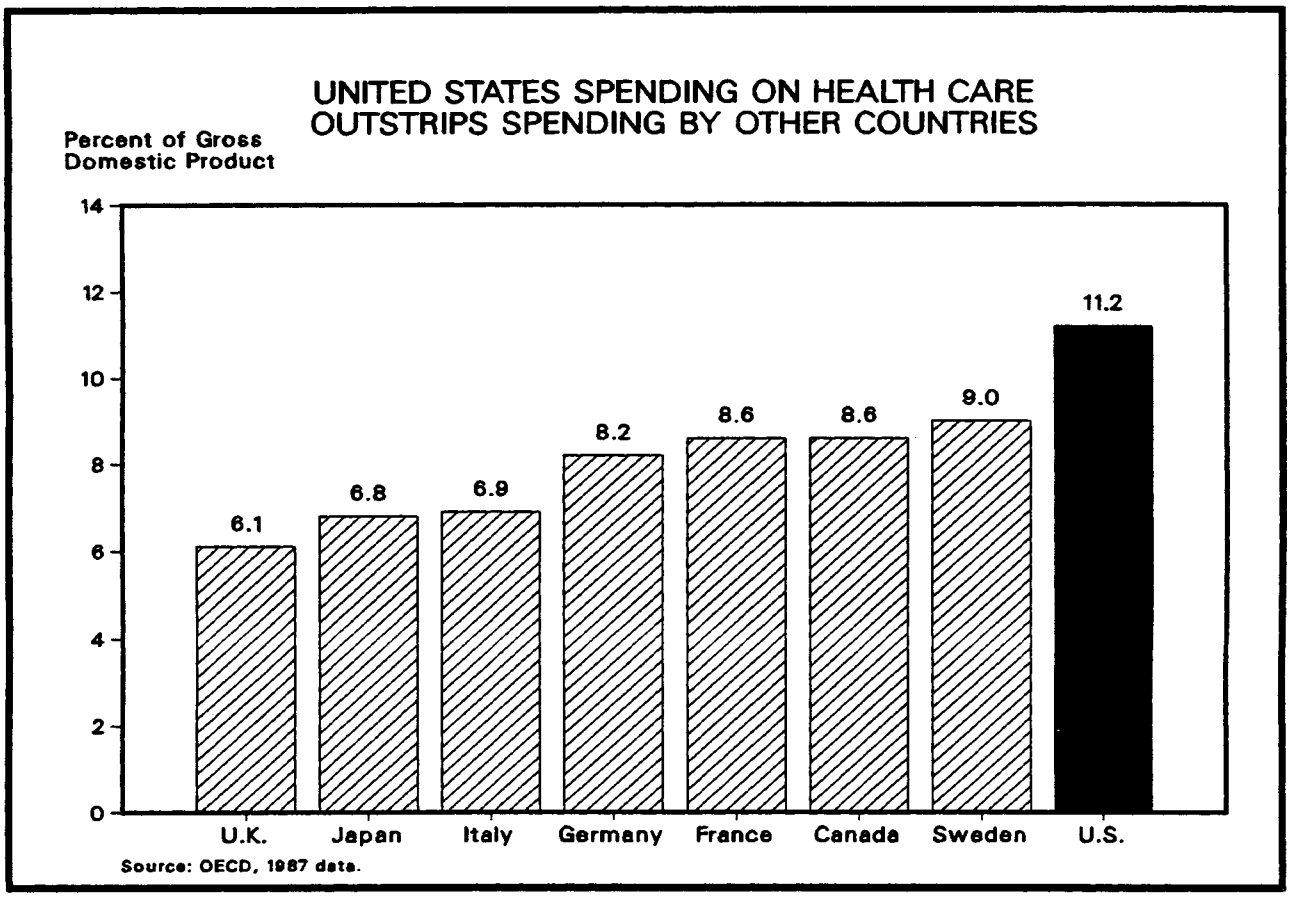
Tables at the end of this Part provide an overview of mandatory spending under the budget and details on the Administration's proposed changes to mandatory program spending.

MANDATORY HEALTH SPENDING

As a Nation, we spend a greater share of our gross domestic product (GDP) on health care than any other industrialized country. Our spending on health care also is growing at a faster rate. In 1965, expenditures on health care consumed 6.0 percent of our GDP or just over $200 for every man, woman and child. By 1987, this share had grown to 11.2 percent and nearly $2,000 per person. Twenty cents out of every new dollar added to the economy is spent for health care. At the current rate, nearly 15 percent of our GDP will be devoted to health care by the turn of the century.

Despite the large amounts spent on health care, overall health in the United States is not measurably better than in other industrialized countries. Our Nation, for example, ranks twenty-second in infant mortality among developed nations. Life expectancy in the United

States is below the average of the seven nations with the next largest market economies. The situation portrayed by these statistics does not have to be permanent. Health care reform can ensure quality care for our Nation's citizens while freeing up valuable resources for investment in the future.



Each year, the Federal Government pays for a larger fraction of growing national spending for health care, largely through mandatory programs. Medicare pays for medical care for the elderly and disabled. The joint Federal/State Medicaid program pays the health care costs of low-income aged, disabled and blind individuals, and low-income pregnant women, infants, children and families. The Federal Employees Health Benefit program is the world's largest multi-choice health plan.

Between 1970 and 1995, the proportion of budget outlays devoted to mandatory health programs is estimated to triple. In 1970, spending on mandatory health programs totaled less than $9 billion and represented about 5 percent of all budget outlays. Mandatory health spending in 1995 is projected to total about $233 billion, more than 15 percent of all Federal outlays.

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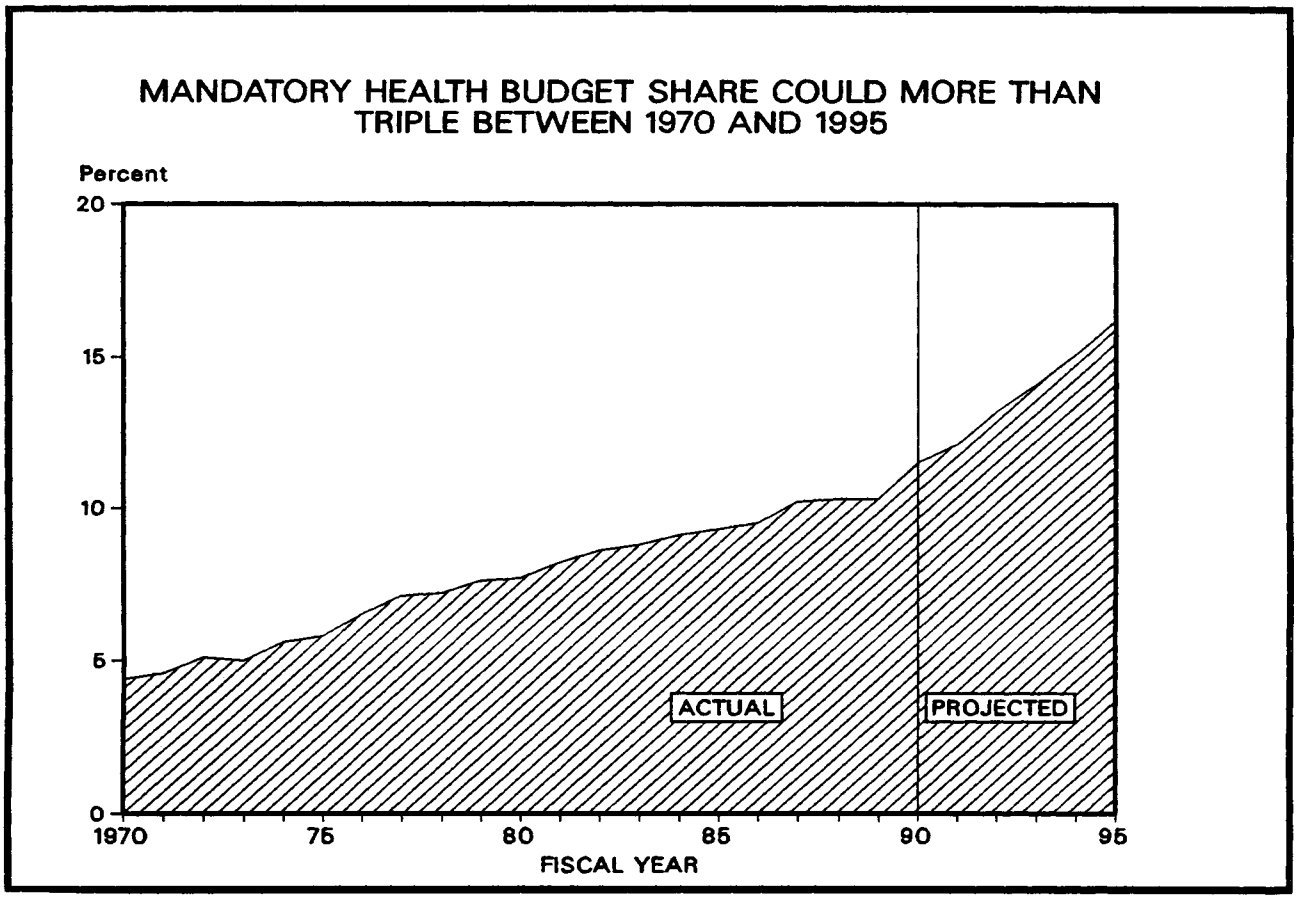
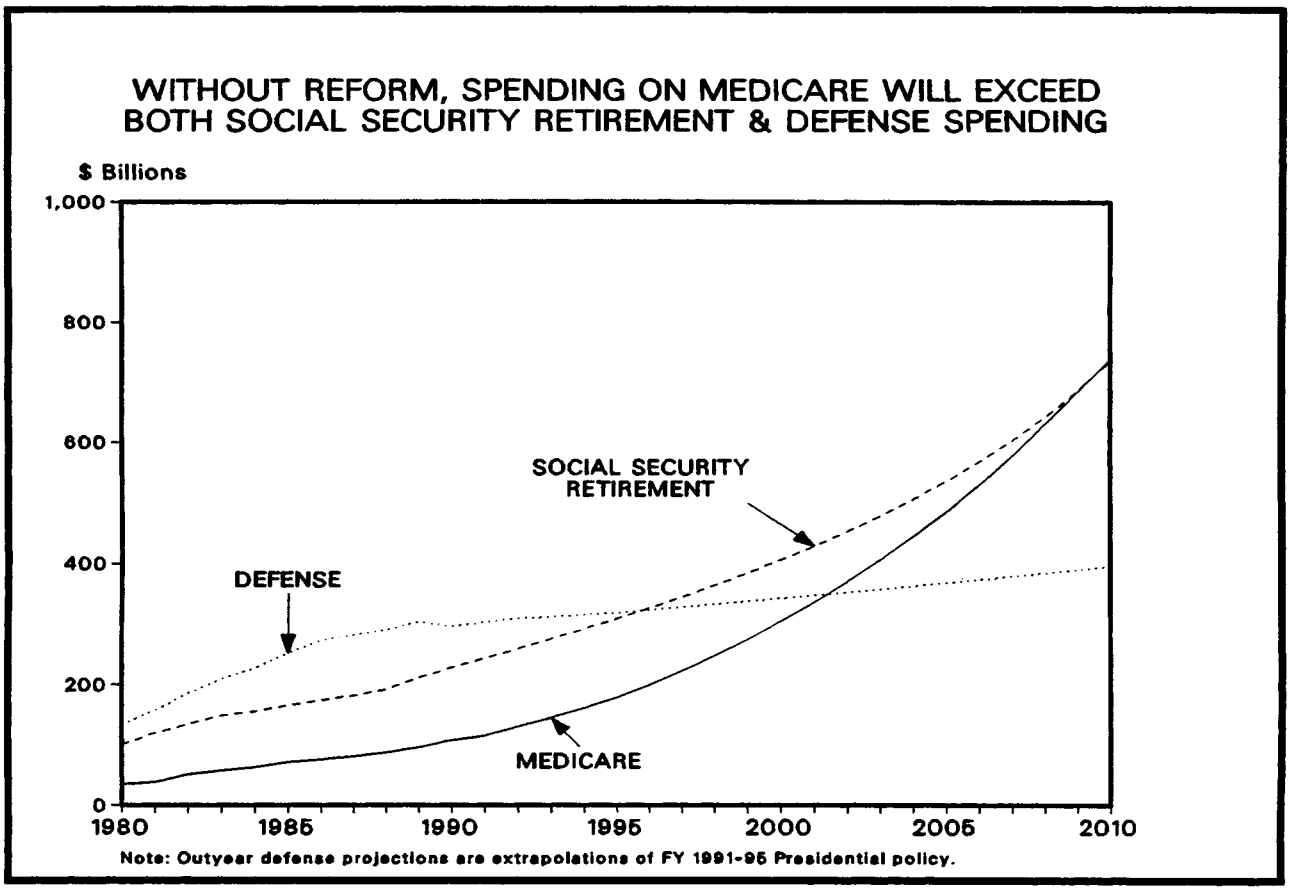


Medicare mandatory spending will total $94.2 billion in 1990—over two-thirds of mandatory Federal health outlays—and is growing at a particularly rapid pace, having doubled every 5 years since 1975. Unless policies are implemented to stem this growth, spending on Medicare will exceed spending on Social Security retirement and defense soon after the turn of the century.

These trends reflect a fundamental problem that confronts private and public sector purchasers of health care services: the structure of our nation's health care system and the way we pay for health services have failed to keep pace with the ongoing revolution in biomedical technology. With each passing year, scientific advances put a whole new range of complex tools into the doctor's black bag. These tools make it possible for physicians to help people in new and better ways, but they entail potential risk and unnecessary cost if not used appropriately. Furthermore, widespread and comprehensive health insurance coverage blunts consumer and provider sensitivity to cost. Consequently, there is very little pressure on the health care system to conserve and substantial pressure for it to expand and absorb resources unnecessarily.

Organization.—In large measure, our health care delivery system has remained unchanged since the end of World War II. Many physicians still practice as individual entrepreneurs, not as members of coherent delivery systems. With technological advances forcing an increasing level of complexity and specialization, continued reliance on this model results in diminished accountability and growing fragmentation of care. The "cottage industry" structure also does not lend itself to development of systems for coordinating complex care or for developing and improving practice patterns that can greatly benefit the patient.

Appropriateness of Care.—Increasingly, research is showing that more health care is not necessarily better health care. Studies on variations in use of medical and surgical proce-



dures strongly suggest that differences in use are often more related to "practice style" than to differences in patients' medical conditions. A recent study conducted jointly by the RAND Corporation and the University of California at Los Angeles found the percentage of certain surgical procedures done for inappropriate reasons to be as high as 32 percent. Other studies have found no difference in health outcomes for individuals enrolled in Health Maintenance Organizations (HMOs) and traditional fee-for-service plans, despite the fact that HMO members typically have significantly lower rates of hospitalization than fee-for-service plan enrollees.

Payment Methods.—Our private and public sector financing systems have failed to keep pace with the changing nature of medical care. Until very recently, the methods used to pay hospitals and physicians were similar to methods first developed in the immediate post-war era. Hospitals were paid on a cost basis and physicians on a fee-for-service basis, severely constraining incentives either had to conserve.

Use of cost- and charge-based payment contributed to price inflation, while use of "a la carte" fee-for-service payment encouraged physicians and hospitals to provide additional care even when that care was of marginal, doubtful or, in some cases, negative value.

New Directions

While there is much in our health care system that is rooted in the past, signs of change are numerous.

Organization.—Perhaps the most fundamental change is the reorganization of the health care delivery system itself. Growing dissatisfaction with the traditional system is leading to increasing emphasis on so-called "managed care" as an alternative to traditional fee-for-service care in the private sector. The hallmark of managed care is the coordinated delivery of medical services through an organiza-

tion that assumes responsibility for selecting providers and for assuring the quality and appropriateness of care. Managed care shifts the emphasis of incentives from more care to more appropriate care.

The preponderance of evidence now available indicates that managed care is at least as good or better than unbridled fee-for-service care and that it can effectively constrain medical care costs. Accordingly, managed care is increasingly prevalent in employer-provided health insurance plans.

Of the 150 million Americans with employment-based health insurance coverage, more than 30 percent receive care through managed care plans, including HMOs and preferred provider organizations (PPOs). HMOs provide comprehensive health services to members for a fixed per capita payment made in advance; this payment method eliminates the "do more-earn more" incentive of fee-for-service. In PPOs, physicians continue to be paid on a fee-for-service basis, but they are included in a provider network based on efficiency and quality of care and are subject to ongoing review. They provide care at reduced prices to plan members in return for a minimum number of patients and prompt payment.

Appropriateness of Care.—Last year, the Administration initiated a research program focused on evaluating the effectiveness of medical technologies. The 101st Congress responded to this lead and recently passed legislation establishing a new Agency for Health Care Policy and Research within the Public Health Service. The mission of the Agency is to conduct and support research on the outcomes of health care services and procedures to identify the manner in which adverse health conditions can most effectively be prevented, diagnosed, treated, and managed clinically.

Payment Methods.—Payment methods are changing as well. Prudent purchasing methods increasingly are used by public and private sector payers.

Newer methods can help to bring down the inflated prices that resulted from the weakness of market forces under the older cost- and charge-based systems. As a result, hospital and physician payment rates are being set at levels that reflect costs incurred by efficient providers.

In the private sector, prudent purchasing most frequently has been implemented through selective contracting, typically by HMOs and PPOs. In the Medicare program, a wide variety of prudent purchasing reforms have been implemented directly, starting with enactment of the prospective payment system for hospitals in 1983 and extending to physician, laboratory and other services subsequently.

The focus of the President's 1991 budget for mandatory health spending is to build upon these important developments in Federal health benefit programs by:

- Encouraging managed care in Medicare and Medicaid.
- Focusing on appropriateness of care through implementation of a new program to evaluate medical technologies and strengthen existing quality assurance programs.
- Restructuring physician payment in the Medicare program and extending use of "prudent purchasing" principles to secure the best value for Medicare beneficiaries and taxpayers alike.

Medicare

Encouraging Managed Care.—The budget contains two initiatives to encourage managed care as the best means of assuring quality and appropriateness of care.

A voluntary managed care option would be offered to Medicare beneficiaries through a new program to be called "Medicare Plus." Selected private health plans would combine a PPO with supplemental ("Medigap") insurance. The Medicare Plus benefit package would have standard elements, and plans would compete to attract Medicare beneficiaries based on the quality of their provider network and on price.

To encourage greater use of HMOs, the budget proposes to rebate to HMOs and their Medicare enrollees the savings that Medicare currently accrues. Under current law, the Federal cost of providing health coverage through

HMOs is 5 percent less than the expected cost of providing regular Medicare coverage (called the Adjusted Average Per Capita Cost or AAPCC). The proposal would reduce the Part B premium for Medicare beneficiaries enrolled in HMOs by 5 percent of the minimum AAPCC. HMOs, which currently receive 95 percent of the AAPCC, would instead receive 100 percent of the AAPCC less the amount of the premium rebate. The lower premium charged to Medicare beneficiaries should encourage more of them to enroll in HMOs, and the higher payments to HMOs should prompt more of them to serve Medicare beneficiaries.

Promoting Appropriate Care.—The President's budget emphasizes the importance of quality health care by increasing funding for the Agency for Health Care Policy and Research, maintaining support for the important activities of Peer Review Organizations, and implementing the new requirements of the Clinical Laboratory Improvement Act. Funding for these activities comes from a variety of sources, although it is largely mandatory spending from the Medicare trust funds. These initiatives are presented together to describe clearly the Administration's commitment in this important area.

The President's budget increases funding for the Agency for Health Care Policy and Research from comparable 1990 levels by $16 million, to $110 million. By strengthening the scientific foundations of medical practice, the Agency's effectiveness initiative is designed to improve quality while making health care more affordable. The Agency will focus its efforts on four objectives:

- To increase our understanding of how medicine is practiced and its effect on health, data systems will be developed to capture a wide array of data on clinical practice and patient outcomes on a continuing basis.
- To learn which treatments are effective or more effective than others, studies of specific medical treatments will be conducted.
- To assist physicians in making choices among a range of alternative treatment strategies, practice guidelines will be developed.
- To ensure that practicing physicians are up to date on scientific advancements, educational strategies will be developed and implemented.

At the same time, the budget continues current high levels of funding for Medicare's Peer Review Organization (PRO) program. Over $380 million will be spent in 1991 on review activities conducted by PROs; more than 2 million hospital records will be reviewed to identify potential quality of care problems. The scope of this effort is without parallel in any other health benefit program. During 1991, the Health Care Financing Administration will pursue a variety of initiatives to further improve this program. These include a series of demonstration projects to test new review systems, as well as development of a new medical data system for hospitals that for the first time will permit PRO reviewers (and eventually others) to target patient care reviews more effectively based on statistical data related to medical outcomes.

Funding for survey and certification activities under Medicare, Medicaid, and the Clinical Laboratory Improvement Amendments of 1988 (CLIA) would be increased by over 200 percent, from $165 million in 1990 to over $510 million in 1991. Funding would increase to over $1 billion in 1992. Under this program, the Federal Government has assumed a major role in ensuring that hospitals, nursing homes, clinical laboratories, and other facilities comply with basic standards of quality. Over 350,000 providers and suppliers will be subject to survey and certification review by 1991. To finance the CLIA program, Medicare and Medicaid clinical laboratories annually will be assessed fees to cover program and administrative costs. Legislation will be proposed in 1991 to extend the fee policy to hospitals and nursing homes.

Reforming Physician Payment.—The 101st Congress, with strong support from the Administration, passed significant reforms of the Medicare physician payment system in 1989. These reforms, which are first effective in 1992, will set aggregate targets on the amount physicians can be paid for providing care to Medicare beneficiaries, pay physicians based on a new fee schedule that reflects the relative cost of producing services, and cap the amount

physicians can charge patients over Medicare payment levels.

The aggregate target (known as the Medicare Volume Performance Standard or MVPS) will serve as the keystone for subsequent Administration efforts to develop new forms of managed care that provide incentives for physicians to provide high quality care in an efficient manner. Specifically, the legislation directs the Secretary of Health and Human Services to develop a proposal under which qualified physician groups can opt out of the general performance standard and have their fee updates based on their own performance rather than that of physicians generally. The study is due by July 1, 1990.

For 1991, the budget contains several proposals designed to facilitate transition to the new physician fee schedule:

- Consistent with the Administration's emphasis on encouraging primary care, physician services for primary care would receive a full Medicare economic index update. Payments for other physician services would be limited to 1990 levels with no update.
- Payment for certain overvalued services would be reduced in preparation for the 1992 implementation of the new resource cost-based fee schedule.

Other physician payment reforms included in the budget involve payment for surgical assistants and supervision of nurse anesthetists.

Extending Prudent Purchasing.—For prospective payment hospitals, the budget proposes to continue the strategy of using cost data to determine an appropriate annual update. Prospective Payment System (PPS) rates would increase by an average of 4.1 percent. The Administration expects to work closely with the Congress to develop suitable adjustments in the update to account for the varying situations of rural, inner city, and other hospitals.

In addition, the budget contains a proposal that would limit capital payments to urban hospitals to 75 percent of incurred costs, a reduction of 10 percentage points from the current level. (Capital payments for rural hospitals would remain at 85 percent of incurred costs.) With hospital occupancy rates averaging only 65 percent across the Nation, a 75 percent level for capital cost reimbursement is appropriate. Higher rates of Medicare capital reimbursement would pay for substantial excess capacity. The Administration continues to believe that prospective payment provides the most appropriate incentives in paying for capital-related costs; accordingly, the Administration intends to publish a proposed rule this year to implement prospective capital payment in 1992 as required by Congress. In the event that prospective capital payment is further delayed, the Administration would favor an alternative adjustment to capital payments to provide similar incentives, such as an occupancy rate adjustment.

The budget also reproposes reform of the indirect medical education adjustment (IME) for teaching hospitals. The IME is intended to compensate teaching hospitals for higher costs related to differences in severity of patient illness not reflected in the diagnosis related group (DRG) system and the higher cost of care related to training. Studies conducted by the Congressional Budget Office, the General Accounting Office, the Inspector General of the Department of Health and Human Services, and the Prospective Payment Assessment Commission consistently show that the IME adjustment has been set too high. The budget proposes to reduce the adjustment factor to 4.05 percent, a level sufficient to compensate teaching hospitals for their higher costs according to scientific analyses of the difference in costs between teaching and other hospitals.

A new proposal included in the budget would reform payments for direct medical education costs, which cover intern and resident salaries and associated overhead. The reform would encourage teaching hospitals to increase training in primary care and would correct current inequities in payment. Specifically, the budget proposes to limit per resident allowances based on national average resident salaries, with differentials designed to encourage training of primary care physicians.

The budget contains several other prudent purchasing reforms for nonphysician services provided under Part B of the Medicare program. Consistent with previous policy, the nationwide cap on payment for clinical laborato-

ry tests would be adjusted to better reflect the amounts needed to purchase laboratory tests from efficient providers. A similar nationwide cap would apply for durable medical equipment. To offset inflation resulting from continued application of cost reimbursement for hospital outpatient departments (OPD), the budget proposes to reduce OPD payments by 10 percent, with an additional 10 percent reduction on capital payments.

To assist States in developing effective strategies for sustaining rural hospitals, the budget requests $1 million in discretionary funding for expert technical assistance. Expert consultants will be available at State request on a matching, sliding-scale fee basis.

Consistent with previous Administration policy, the budget also proposes setting a permanent floor on Part B monthly premiums at 25 percent of program costs. This would extend the policy that has been in effect since 1984.

Additionally, the budget proposes to extend Medicare Hospital Insurance coverage to all State and local government employees beginning October 1, 1990. All such employees hired after March 1986 already are required to be covered by Medicare Hospital Insurance. More information about this proposal and its budget effects is provided in "Receipts, User Fees, and Other Collections."

If all Medicare reforms in the budget are adopted, the growth in Medicare payments between 1990 and 1991 would be reduced by about $5.5 billion. Still, mandatory expenditures on Medicare would grow by about $2.0 billion. Budget detail on Medicare reforms is included in a table at the end of this Part.

Medicaid

Expanding Managed Care.—To improve access to high quality health services for Medicaid enrollees, the budget encourages greater use of managed care systems. Low-income individuals too often rely on hospital emergency rooms for their primary care and suffer a lack of continuity in the services they receive. Enrollment in a managed care plan would ensure Medicaid beneficiaries access to an integrated network of health care providers, including a physician/case manager to serve as their primary source of care and coordinate any special services they need. Moreover, careful selection of providers and comprehensive quality review would result in better care.

The budget contains three proposals to facilitate more extensive use of managed care within the Medicaid program.

First, States would receive financial incentives to increase managed care enrollment. Beginning in 1991, States would receive a 3 percentage point bonus over their normal matching rate for expenditures associated with increased enrollment in managed care plans. Increased managed care expenditures would be measured against indexed 1989 expenditures. Beginning in 1993, application of the 3 percentage point bonus would also apply to the 1989 managed care base.

Beginning in 1993, the matching rate paid to States for expenditures under traditional fee-for-service delivery systems would be reduced slightly, to no more than offset the cost of the higher matching rates paid for managed care. The decrease could be no more than 1 percentage point in 1993, 2 percentage points in 1994, and 3 percentage points in 1995 and beyond. Exceptions would be made for rural and medically underserved areas and for individuals in nursing facilities.

Second, the budget proposes to make managed care a standard option for State Medicaid programs. Barriers to managed care date back to the mid-1960s, when virtually all medical care was provided through fee-for-service systems. Currently, States cannot require recipients to enroll in a managed care system unless they apply for waivers of legal requirements. The waiver application process is long and costly for States, and it must be repeated every 2 years. The Administration proposes to give managed care systems equal standing with fee-for-service care by allowing States to implement approved managed care systems without obtaining a waiver. As an integral part of this proposal, the Secretary would establish and enforce standards governing quality of, and access to, care.

Finally, the budget proposes to ease restrictions that unnecessarily impede HMO participation in Medicaid. Publicly operated HMOs and HMOs in medically underserved areas could be exempted from the requirement that

they must have a non-Medicare/Medicaid enrollment of at least 25 percent in order to enroll Medicaid beneficiaries. Exemptions would be granted if annual, independent quality reviews show that the HMOs provide high quality care. Existing State options to guarantee eligibility and restrict voluntary disenrollment of HMO plan members would be expanded. Recipients would still be able to disenroll with cause, and effective recipient grievance procedures would continue to be required.

Complementing Other Budget Initiatives.—Federal mandatory Medicaid expenditures under the President's budget would increase by $4.8 billion, to $45.0 billion, a 12 percent increase over the 1990 level. In addition to supporting the managed care initiative, Medicaid funding is an integral component of the Administration's infant mortality initiative.

Infant Mortality.—The 1991 increase in Medicaid spending will fund the recently enacted mandatory expansion of Medicaid to cover pregnant women, infants and young children from families with incomes up to 133 percent of the poverty level, which is consistent with last year's Administration proposal. The Administration continues to strongly encourage States to move toward coverage of pregnant women and infants with family incomes up to 185 percent of poverty by exercising existing Medicaid options. State adoption of other measures designed to increase program coverage of low-income pregnant women also is strongly encouraged.

To complement the expansion of Medicaid coverage of low-income pregnant women and infants, the budget advances a number of discretionary proposals to combat infant mortality. In HHS' Public Health Service (PHS), these proposals include $579 million for the Maternal and Child Health Block Grant, which includes new grants totalling $25 million to encourage the establishment of "one-stop shopping" for health and related social services for pregnant women and infants; an expanded case management initiative to reduce infant mortality totalling $36 million; tripling of funding, to $9 million, for demonstrations of innovative ways to provide social services to babies born with HIV infection or dependent on drugs; and increased funding of $10 million for Community and Migrant Health Centers (C/MHC), a primary source of services for low-income and minority pregnant women and infants. C/MHC funding would include a one-time increase of $2 million for the purchase of vans to transport pregnant women for prenatal care.

The budget also requests increased funding of $12 million for the Centers for Disease Control's infant mortality activities to enhance State surveillance capabilities to (1) document links between incidence of low birth weight and birth defects on the one hand, and infant deaths and key preventable parental risks, on the other and (2) assess the effectiveness of the maternal and child health and nutrition programs that are designed to prevent and treat these risks. The budget also contains increases for drug abuse research, treatment, prevention and education activities targeted at high risk groups including pregnant women and their infants. Additionally, the Indian Health Services would expand outreach and health education activities that focus on fetal alcohol syndrome and infant mortality. Total HHS funding aimed at reducing infant mortality will increase $588 million in 1991, to $5 billion.

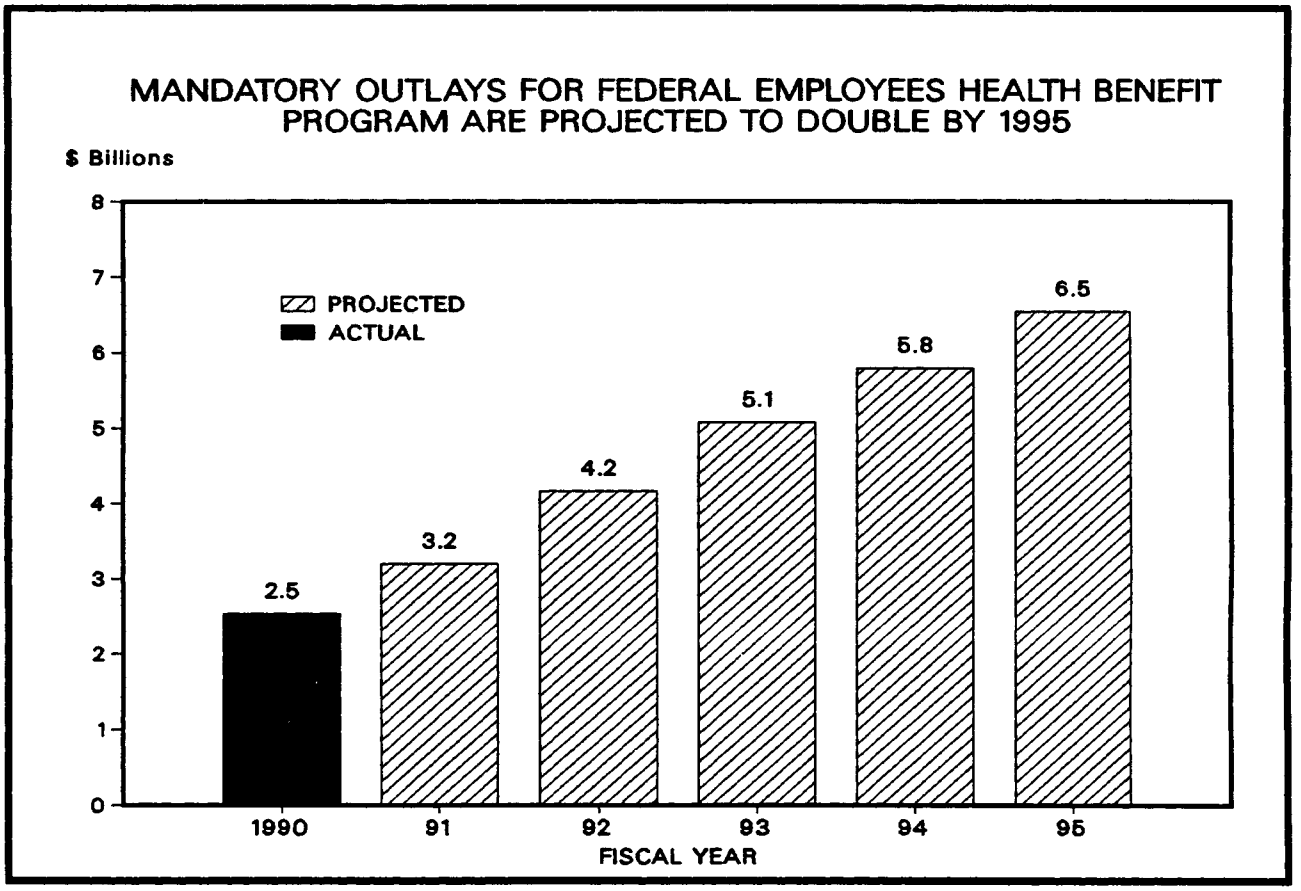
In addition to the PHS initiatives, the budget proposes $2.2 billion for the Department of Agriculture's Special Supplemental Food Program for Women, Infants, and Children (WIC). With continued efforts to expand competition among suppliers of infant formula, participation in WIC in 1991 would increase to 4.7 million, 62,000 above 1990 levels.

Federal Employees Health Benefits: Reforming the Program

The Federal Employees Health Benefit Program (FEHBP) is the largest multi-plan health program in the world. It offers Federal employees a choice among 20 fee-for-service health insurance plans and 300 health maintenance organizations and other prepaid managed care options. Administered by the Office of Personnel Management (OPM), FEHBP covers about 9 million people, including 2.5 million active employees, 1.5 million annuitants, and 5 million dependents.

By law, OPM must submit recommendations for reform of the FEHBP to Congress in February 1990. At present, the Administration is

working on a reform package that would address problems inherent in the current FEHBP system. These problems include, among others, adverse risk selection and duplicative administrative operation in carrier plans. In the absence of reform, mandatory outlays for FEHBP would more than double by 1995.



Independent of the broader FEHBP reform recommendations under development, the budget proposes to move the U.S. Postal Service toward self-sufficiency by having it assume responsibility for additional annuitant health benefit costs. Payments for health benefit costs of postal annuitants who retired after 1971 but before 1986 would be made by the Postal Service instead of OPM. Currently, the Postal Service contributes to the cost of health benefits for annuitants who have retired since 1986, but not for the cost of earlier retirees. Under this reform, the government of the District of Columbia also would assume costs for their annuitants.

MANDATORY SPENDING FOR INCOME SUPPORT AND OTHER SUBSIDIES

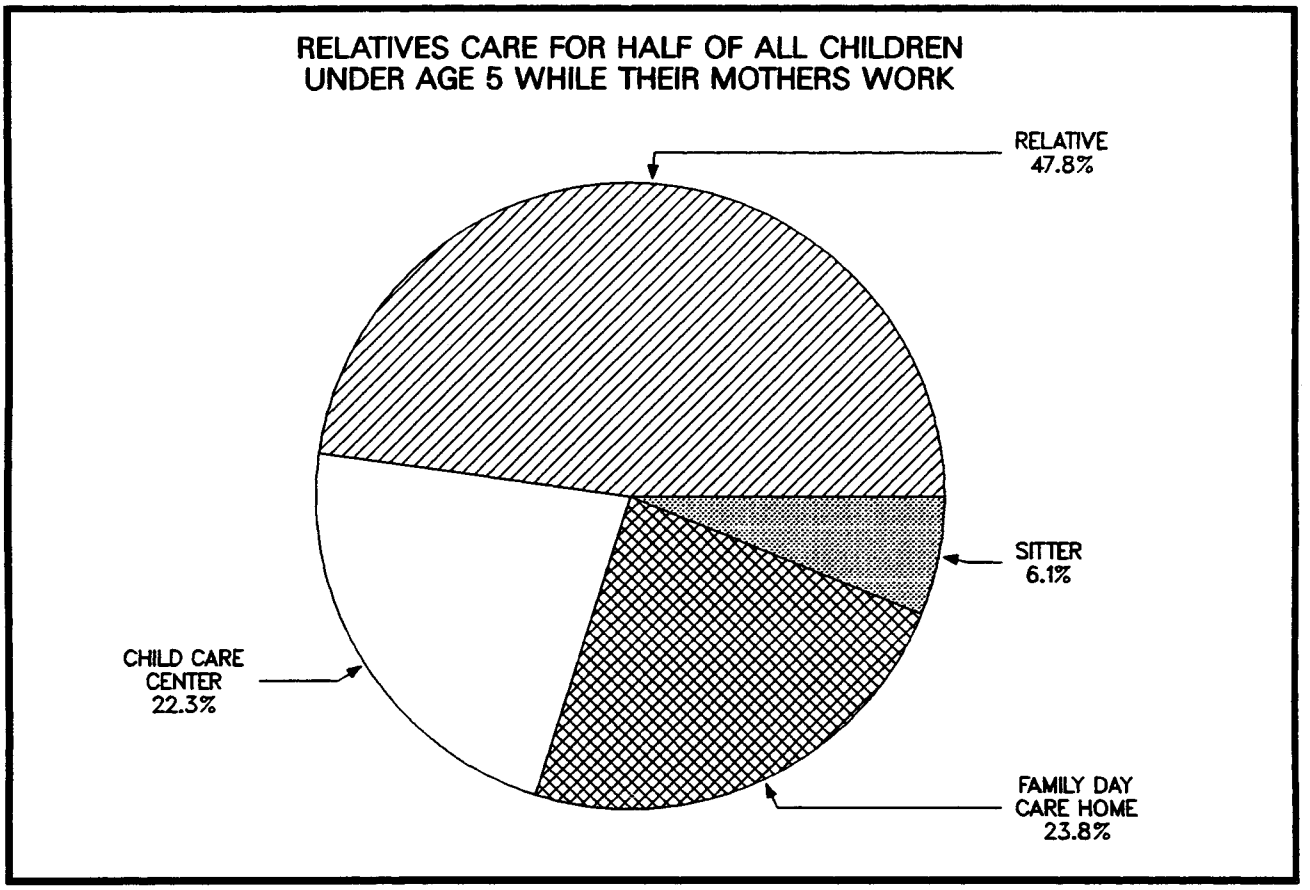
Spending on mandatory programs other than health will total $423 billion in 1990. The majority of these outlays, $383 billion or just under one-third of the budget, are for income maintenance programs, including Social Security, veterans Compensation and Pension, Federal retirement, unemployment compensation, and means-tested assistance programs. The rest subsidizes a wide range of activities, from Guaranteed Student Loans to farm income supports.

Modest changes are proposed in some programs; major reforms in others. Their net effect is to allow the Federal Government to better meet the needs these programs were

designed to serve while freeing up scarce resources to allow funding of new priorities, such as child care.

Enhancing Parental Choice in Child Care

Most care provided to children of working families is family care, not care provided outside the child's home in an institutional setting. In families with an employed parent, 43 percent of children younger than six currently are cared for by mothers who do not work outside the home.



When mothers do work outside the home, care by relatives is the predominant child-care arrangement for their children under age five. Other informal arrangements such as "family day care homes," which often involve friends or neighbors of the child's parents, also are widely used. Child care centers, including preschools, enroll only 22 percent of children under age five whose mothers are employed.

The same informal, family-based arrangements that constitute the majority of preschoolers' care also predominate for school-age children. Because many mothers' part-time and other work schedules accommodate their children's school hours, 75 percent of the school-age children whose mothers are employed are in school most of the time their mothers work. Fully 65 percent of those not in school while their mothers work are cared for by their fathers or other relatives.

When parents choose center care for their preschool or school-age children, the centers are often affiliated with religious organizations. Church-based care accounts for at least one-third of all the care provided in centers.

Informal, often unpaid, arrangements are prevalent for children with employed mothers at all family income levels. For example, in families with incomes of at least $30,000, fully

72 percent of the preschool children whose mothers are employed are cared for in their own or others' homes, a figure nearly identical to the 71 percent for families with incomes below $30,000. In short, the choice of informal care is a matter of preference, not a matter of family finances.

When families pay for child care, their cost averages $2,350 annually for all of the children in the family. Paid child care typically accounts for only a small fraction of such families' incomes, but it consumes an average of 22 percent of the incomes of poor working families.

Respecting the many ways that American families care for their children, the President has based his child care policy upon parental choice. The budget reproposes the two tax credit initiatives for child care that were advanced last year: (1) a new refundable Child Tax Credit for low-income working families of up to $1,000 for each child younger than age four, and (2) refundability of the current Child and Dependent Care Tax Credit. These initiatives are based on the following four principles, which the President has stated must be reflected in child care legislation:

Parents, who are best able to make decisions about their children's care, should have the discretion to make these decisions.—New Federal support for child care should go directly to parents. They, rather than bureaucracies or providers, should control the disposition of funds and decide what kind of care their children receive.

Federal policy should not discriminate against parents who work at home.—Federal policy now largely ignores the contributions and sacrifices in income made by two-parent families in which one spouse works at home to care for their children. Federal policy must correct this discrimination.

Federal policies should act to increase, not decrease, the range of child care choices available to parents.—There is no such thing as "one size fits all" child care. Some parents want child care provided in an atmosphere of religious values, while others seek the familiarity and informality of care by relatives, friends, and neighbors. Still others may prefer center-based care. Federal policy should expand the range of choices available to parents, not limit them by biasing Federal support toward one kind of care. The Federal Government should not mandate State standards or impose requirements for State standards, which would increase the cost and reduce the supply of care available to parents.

New Federal assistance should be targeted to families most in need.—Balancing the competing demands of work and family life is often hardest for low-income families with young children. In a period of fiscal constraint, scarce Federal resources must be provided to these families, who are most in need.

The President has indicated that he is firm in his commitment to these principles but flexible in how they are implemented. Accordingly, Administration officials have been, and will continue to be, willing to work with the Congress to pass legislation that helps low-income working families meet their child-care needs, consistent with the President's principles.

Child Nutrition: Targeting Spending Better

In 1990, the Federal Government will spend nearly $7.2 billion for mandatory and discretionary nutrition programs that serve children, including the National School Lunch Program, the School Breakfast Program, the Child Care Food Program, the Summer Food Service Program, the Special Supplemental Food Program for Women, Infants and Children (WIC), the Commodity Supplemental Food Program, and the Special Milk Program. The Food Stamp Program also provides for the nutritional needs of children, who made up about half of the 18.8 million recipients of $11.6 billion in Food Stamp benefits in 1989.

Although many of the beneficiaries of child nutrition programs have very low incomes, program rules provide some Federal subsidy to children with family incomes that are not low. For example, the National School Lunch Program provides 28 cents to participating schools for every lunch served, whatever the income of the children.

Additional Federal subsidies enable schools to provide free meals to children with household incomes below 130 percent of the poverty income guidelines, and subsidies of about 75

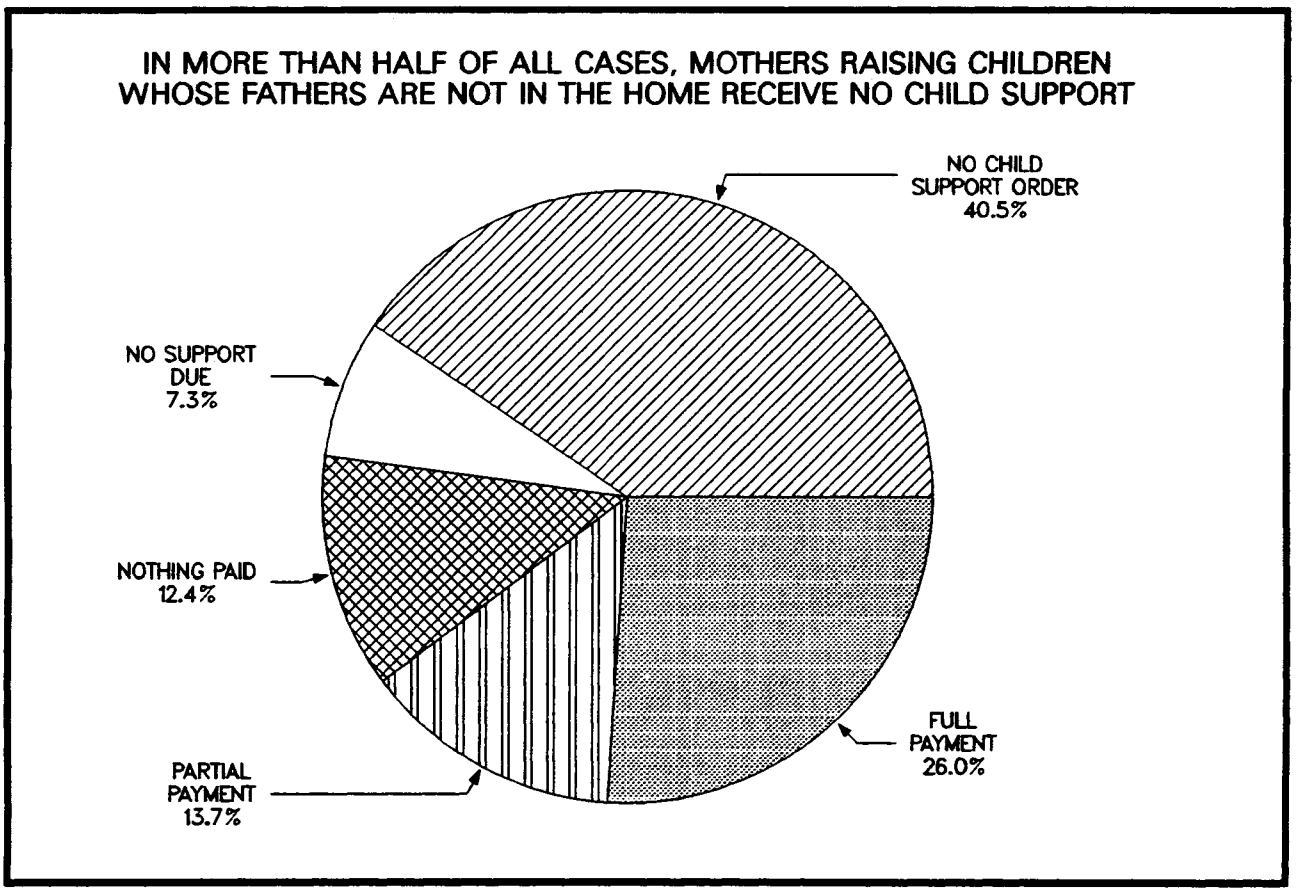
percent to children from households with incomes up to 185 percent. Nonetheless, half the lunches served, representing Federal subsidies of some $600 million in 1990, are for students with household incomes above 185 percent of poverty.

The budget proposes to improve the efficiency of school lunch and family day care meal subsidies, but in a manner different from previous proposals. For the School Lunch Program, children from households with incomes below 130 percent of the poverty line would continue to receive meals that are completely subsidized. More funds would be directed to subsidies for children from households with incomes between 130 percent and 185 percent of poverty; their subsidy would be increased by 20 cents per meal. The current level of subsidies for meals provided to children with household incomes between 185 percent and 350 percent of the poverty line would be unchanged. Subsidies for students with household incomes above 350 percent of the poverty line would be discontinued. Schools would continue to receive additional commodities as they are available from USDA for meals to children at all income levels.

Children in family day care homes receive subsidized meals, regardless of their income, through the Child Care Food Program. Over 70 percent of children getting free meals are from households with incomes above 185 percent of poverty. Their Federal subsidies amounted to about $315 million in 1990. The budget proposes to means test the program and provide lower subsidies for children from families with household incomes over 185 percent of poverty.

Child Support Enforcement: Extending Services and Requirements and Increasing Efficiency

Too often, women raising children whose fathers are not in the home receive no child support. About 40 percent have not obtained a court order for any support. Even among those who have such an order, about half receive no payments or only partial payments from delinquent fathers. Failure by absent parents to provide support often leaves their children to be served by programs such as Aid to Families with Dependent Children (AFDC), the Food Stamp Program, and Medicaid. While these programs provide for the necessities, they are not a substitute for the financial support children deserve from their parents.



The Family Support Act of 1988 is the most recent major step taken to improve the financial security of children by increasing the support provided by absent parents. This Act requires States to adopt guidelines for judges to follow in setting child support awards and to use immediate wage withholding as the standard method for ensuring that the support that is awarded actually gets paid. Under the Act, child support enforcement services, funded largely by the Federal Government, are available without cost to families applying for and receiving AFDC, Foster Care, or Medicaid. Thus child support enforcement resources are coordinated with the provisions in the Social Security Act that require applicants for AFDC, Foster Care, and Medicaid to cooperate with State efforts to establish paternity where it has not been established, to seek child support awards, and to obtain compliance with awards.

The budget proposes to provide free child support enforcement services to applicants for other means-tested benefits, such as Food Stamps and Supplemental Security Income, and to require them to cooperate in securing support for their children from absent parents. As a result, these families with children will have higher incomes and be less dependent upon public assistance. Legislation will be proposed authorizing the extension of child support services on a program-by-program basis. Programs outside the Department of Health and Human Services will be included based upon agreements between the head of the agency administering the assistance program and the Secretary of Health and Human Services.

Under current law, some States receive more Federal child support matching funds than they collect in child support for AFDC families. For 1991, the budget proposes to require States to collect at least one dollar on behalf of AFDC families for each dollar of Federal child support enforcement matching funds claimed. This very modest performance requirement would increase, in phases, until, by

1999, States would be required to collect $1.50 on behalf of AFDC families for each dollar of Federal matching funds claimed.

Under another proposal, States would develop fee schedules for child support services that include free services for families below 150 percent of the poverty line, reduced-rate services for families between 150 and 200 percent of the poverty line, and full rates for families above 200 percent of the poverty line. Payment of most fees would be contingent on how quickly a State provides services and how much child support it collects for the families.

Emergency Assistance to Needy Families: Assisting Families with Permanent Housing

Aid to Families with Dependent Children (AFDC) provides a monthly grant to cover the regular basic needs of recipient families. However, occasional unexpected expenses may arise. For this reason, the Social Security Act authorizes States to provide emergency assistance.

Over the last decade, some States and cities have made increasing use of this category of AFDC payments to deal with the temporary housing needs of families. An example much in the public eye has been "welfare hotels," in which AFDC families have been housed, often under extremely poor conditions, in hotels or motels at enormous monthly charges. Although the Social Security Act directs that emergency assistance should be, "furnished for a period not in excess of 30 days in any 12 month period," emergency assistance funds have been used to pay for stays of many months.

The States and cities in which emergency assistance has been used for such funding agree that the practice is not an appropriate way to deal with the housing needs of these families.

The budget assumes that the Department of Health and Human Services will publish regulations that will limit inappropriate uses of emergency assistance. Emergency assistance funds would remain available for measures to avoid the need for long-term stays in "welfare-hotels," such as preventing evictions by paying past-due rent or utility bills and assisting families to move into permanent housing by paying an initial month's rent or security deposit.

AFDC families experiencing a housing crisis also would benefit from transitional housing aid provided under the McKinney Act, which is discussed in Part III of this Section.

Nutrition Assistance for Puerto Rico: Consolidating Responsibility for Specialized Assistance in HHS

The budget proposes replacing the Nutrition Assistance for Puerto Rico component of the Food Stamp Act with a fiscal assistance program for Puerto Rico under the Social Security Act. This proposal would consolidate administration and policy oversight of the specialized programs of public assistance for Puerto Rico (including AFDC and Medicaid) in the Department of Health and Human Services. Under the proposed program, Puerto Rico would have broad authority to tailor assistance to low-income families and individuals. The authorization for the program would be $825 million. This level is $112 million less than the authorization for the prior program, reflecting the improvement in Puerto Rico's economic condition since that program was enacted.

Foster Care: Restraining the Growth of Administrative Expenses

Between 1981 and 1989, State claims for Federal reimbursement of administrative costs associated with implementing the Foster Care maintenance payments program have grown over 1,400 percent from $30 million to $474 million. This increase in State administrative costs has out-paced growth in both the number of children served over the period (48 percent increase) and the level of maintenance payments financing care of foster children (131 percent increase). The escalation in Federal reimbursement for administrative costs has not been correlated with improvements in the quality or quantity of services to children.

The 1991 budget proposes to limit each State's annual increase in administrative payments to no more than 10 percent to check the excessive growth in Federal reimbursements. Although the 10 percent limitation is more than double the current rate of inflation, it still would reduce the rate of growth in State administrative claims, which are projected to

jump by 34 percent between 1990 and 1991. The majority of funds appropriated for Foster Care should fund maintenance services for this vulnerable population of children rather than an ever-increasing percentage of State administrative overhead expenses.

Federal Employee Retirement Programs: Bringing Practices More into Line with Private Pension Programs and Social Security

In 1990, approximately 2.2 million civilian retirees and survivors will receive payments from the Civil Service Retirement System (CSRS) or the Federal Employees' Retirement System (FERS). Approximately 1.6 million retirees and survivors will receive military retirement payments.

Without reforms, between 1990 and 1995 outlays under these and several smaller Federal employee retirement programs are projected to increase from $52.5 billion to $70.0 billion. To control the rate of these increases, some Federal retirement program practices should be brought closer to private pension and Social Security practices.

Until several years ago, Federal retirees received their benefits in the same way most private pension beneficiaries do, in monthly payments. More recently, employees have had the option upon retirement of withdrawing in a lump sum all funds they contributed during employment and receiving an actuarially-reduced monthly benefit based upon the government's contribution. About 85 percent of all recent retirees have taken advantage of this generous option, which will provide lump sum payments averaging about $27,500 in 1991. Bringing retirement spending increases under control should begin by moving Federal retirement back into line with private pension practice and eliminating this lump sum option.

Three other retirement reforms are proposed. First, beginning in 1992, the budget proposes to apply to CSRS benefits the same inflation adjustment used to index FERS benefits—the Consumer Price Index (CPI) minus 1 percentage point. This would bring CSRS closer to private pension practice, where a full CPI adjustment each year is rare. A similar change will be proposed for military retirement. Second, the 1991 COLA would be frozen for civilian and military retirees, except for permanently disabled annuitants, who would receive a cost of living adjustment. Even with the 1-year freeze, the increases in Federal retirement benefits over the past several years would remain ahead of most private pension programs, few of which are fully indexed to the CPI.

Finally, legislation will be proposed to cap the Federal Government's potential liability for postal and District of Columbia retiree benefits. Retirement contributions for current employees of the Postal Service and the government of the District of Colmbia participating in CSRS would increase from 7 percent of basic salary costs to 11.67 percent in 1991 and 14 percent in 1994. This proposal would (1) reduce inappropriate Federal subsidies to the Postal Service and D.C. government for retirement COLA benefits, (2) curtail the growth in the retirement fund's unfunded liability, and (3) move the Postal Service closer to self-sufficiency.

Veterans Compensation: Avoiding the Inheritance of Large Estates by Remote Heirs of Incompetent Veterans

Compensation for veterans disabled in the service of their country dates from the days of the American Revolution. Under the current program, veterans who incurred or aggravated illnesses or injuries during military service, as well as survivors of veterans or service persons whose deaths occurred while on active duty or as a result of a service-connected illness or injury, may apply for cash benefits as compensation for lost earnings capacity. The budget proposes a full COLA increase for the 2.2 million veterans receiving compensation benefits.

As a rule, veterans who are mentally incompetent and therefore unable to manage their own affairs, and who have no dependents, are assisted by fiduciaries. In many cases these veterans have sizable estates that end up benefiting not the veteran or his family but remote heirs. The budget proposes legislation to reduce the likelihood that remote heirs of incompetent veterans without dependents continue to inherit large estates comprised of assets that were accumulated from Federal payments to those veterans. Proposed legislation would stop payments to those veterans

after their assets reach $25,000. Should the assets subsequently be reduced to $10,000, monthly payments would be resumed. In this way, funds would continue to be made available to these veterans to spend at the rate that they and their fiduciaries see fit, while minimizing vulnerability for abuse in inheritance.

Veterans Pensions

The Veterans Pension program provides means-tested payments to low-income, wartime-service veterans who are over 65 or who have permanent and total disabilities unconnected to their military service. In January 1991, the 550,000 veterans on the Pension rolls will receive a full COLA estimated to be 3.9 percent.

Less Restrictive Benefit Reduction Practices for Hospitalized Veterans.—Currently, when a veteran is furnished domiciliary care by the Department of Veterans Affairs (DVA), the veteran's pension is reduced to $90 monthly after the end of the second full calendar month of care. The pension of a veteran being furnished hospital treatment or nursing home care is reduced to that amount after three months. Full payment is resumed upon discharge. The veteran is not entitled to amounts withheld.

These reductions can make it difficult for the veteran to return to the community. In some instances, veterans have been unable to meet continuing obligations, such as mortgage, rent, or car payments, and may have lost their homes or personal possessions. This proposal would increase to 12 full months the period before a pension would be reduced. It would also allow up to $10,000 of withholdings to be returned to the veteran upon release from DVA care. Enactment of this proposal would increase outlays by $13.5 million in 1991.

Using IRS Data to Verify Eligibility.—Currently, the tax code authorizes disclosure of limited taxpayer information for certain specified purposes, such as improving the accuracy of benefit payments made under programs authorized by the Social Security and the Food Stamp Acts. To promote the integrity of the Pension program, the budget proposes to extend the Secretary of the Treasury's authority so that he can disclose to the DVA information needed to confirm veterans' eligibility.

Veterans Medical Care Reimbursement: Collecting from Insurers of Veterans with Service-Connected Disabilities for Treatment of Non-Service-Connected Conditions

When veterans without service-connected disabilities receive medical care from the DVA, costs of this care are recovered from the veterans' health insurers. The budget proposes to extend this authority to recover the costs of care for health conditions not related to service from the insurers of veterans who have service-connected disabilities. Under this proposal, insurers would pay their fair share for insured veterans who choose to use the DVA for their non-service-connected care.

Social Security

Extending Social Security Coverage to State and Local Employees Not Covered by Public Employee Retirement Programs.—States and local governments can decide whether or not their employees should be covered by Social Security. In some cases where these governments have not elected Social Security coverage, a part of their workforce does not participate in any public employee retirement plan. The budget proposes to make Social Security coverage mandatory for those State and local workers who are not participating in a public employee retirement system. As a result, these employees would begin earning protection against disability and credits for their retirement. Additional information on this proposal and its budget effects can be found in Section Two, "Receipts, User Fees, and Other Collections."

Covering Adopted Children of Surviving Spouses.—Current law is unnecessarily restrictive in granting Social Security entitlements to adopted children of surviving spouses. The budget proposes to provide benefits to adopted children if they had been living with, and receiving at least one-half of their support from, the worker before his or her death.

Offsetting Tax Refunds for Overpayments.—The budget proposes permanent authority to collect Social Security and Supplemental Security Income overpayments by withholding the amount due from Federal income tax refunds if recovery through a benefit adjustment or a direct payment by the overpaid individual has

not been successful. The proposal would apply only to amounts owed by former beneficiaries, not to amounts owed by current beneficiaries. It would provide the Social Security Administration with an inexpensive and effective overpayment collection alternative that is available to other Federal agencies. As a result, about 25 percent of Social Security overpayments that are not currently collectible would be recovered.

Improving Pre-Effectuation Review Requirement.—State Disability Determination Services, under contract to the Federal Government, made determinations on individuals' initial and continuing eligibility for Social Security disability benefits. Current law requires the Secretary of Health and Human Services to review 65 percent of these determinations. The budget proposes to reduce the percentage of disability allowances and continuances requiring review from 65 percent to 50 percent of all allowances and 25 percent of all continuances. The proposal would reduce incorrect benefit payments by allowing the Secretary to focus Departmental review efforts on error-prone cases.

Conform Rail Social Security with OASDI.—Under current law, certain groups, including divorced spouses of railroad workers, widow(er)s of railroad workers, and children of deceased railroad workers are not covered under Social Security. The President's budget proposes extending full Social Security coverage to these groups.

Railroad Retirement: Restoring Private Sector Control Over a Private Industry Pension

The Railroad Retirement Board pays benefits to 903,000 annuitants. Benefits are divided into two basic parts: Social Security equivalent benefits and rail pensions. Rail Social Security benefits are financed through a complex reinsurance process with the Social Security Administration. Rail pensions are financed on a pay-as-you-go basis through employer and employee payroll contributions, interest income, and general fund subsidies. The total estimated mandatory outlays in 1991 are $4.1 billion.

The Board's actuaries project that under mid-range assumptions about railroad employment, the rail pension fund will be bankrupt in 2013. According to normal private sector standards established under the Employee Retirement Income Security Act (ERISA), the rail pension fund has an unfunded liability of $14 billion.

The problem is not new. In 1946, 1951, 1974, 1981, 1983, and 1987, Congress enacted legislation to deal with funding shortfalls. Each act proved to be a short-term fix that provided additional Federal subsidies. Since 1983, Congress has given the rail pension fund a total of $3.3 billion in direct Federal subsidies. As of today, these subsidies have contributed over 50 percent of the rail pension fund reserves. Moreover, the general fund finances 100 percent of railroad retirement windfall benefits, ($354 million in 1991).

Rail employment drives the rail pension fund's balance. The rail sector has consistently overestimated employment projections, resulting in overly optimistic estimates of rail pension fund balances. These projections give the misleading impression of a system with no short-term cash flow problems, thus lessening the financial impact on the sector. Rather than initiating real reforms, railroad payroll taxes have been increased incrementally based on these faulty projections.

Rail labor and management need the freedom to independently negotiate retirement benefits and contribution rates as part of their wage and compensation package. As long as this private industry pension remains part of the Federal Government, the rail sector has little incentive to address the system's long-term financial insolvency.

Fundamental reform is needed, recognizing the basic incompatibility of a private industry pension within the Federal Government. Railroad retirees and their dependents would be better served by a retirement system that relied solely on private funds and was privately administered. Therefore, the budget proposes legislation that will (1) extend full Social Security coverage to all rail retirees, (2) cover new rail employees under an ERISA-based pension system administered by the rail sector, and (3) establish a financially stable pension system for current retirees that relies on rail sector support.

Trade Adjustment Assistance: Treating Dislocated Workers Equally

Legislation will be proposed for 1991 to consolidate the separate program of Trade Adjustment Assistance (TAA) with the Economic Dislocation and Worker Adjustment Assistance program that provides enhanced services for displaced workers under Title III of the Job Training Partnership Act. At present the two programs operate separately and provide different benefits to workers who face similar problems. The consolidated program would eliminate inequities among displaced workers.

Following the consolidation, displaced workers who have lost their jobs due to imports or other more general causes of dislocation will be served by a single program. All such workers will be eligible for the same job search assistance, training, and relocation assistance, regardless of the particular cause of their job loss.

The unification of the two programs would provide early access to services and thus speed the adjustment of workers and their return to productive employment. The single program, which would be simpler to administer than the two separate programs, would save administrative costs, and would permit the concentration of resources on adjustment benefits.

Workers collecting TAA benefits during the week including September 30, 1990 would continue to collect the balance of their TAA cash benefits.

Farm Supports: Increasing the Responsiveness of American Agriculture to Market Mechanisms

Over the past decade, Federal commodity price and farm income support programs have been less predictable and more costly than at anytime in the past. In the early to mid-1980s, the strong dollar, which greatly reduced U.S. export market shares, and legislated minimum domestic prices, which were higher than the world market price, combined to make the U.S. less competitive in world markets. Further, income support guarantees (established through target prices for various commodities) were above the cost of production, creating an incentive to increase production. Higher production combined with smaller export markets resulted in the default of large crop surpluses to the Federal Government. Even so, with rising costs of inputs and money, returns to farming actually declined, and farmers continued to leave the sector.

Current Strength of America's Farm Sector.—The Food Security Act of 1985 was designed (1) to restore U.S. competitiveness by reducing price support levels over time and establishing marketing loans, and (2) to expand exports by authorizing a number of export promotion programs, including Targeted Export Assistance, the Export Enhancement Program, and intermediate-term export credit guarantees.

Since the enactment of the 1985 farm bill, there have been major improvements in the U.S. farm economy. Today, net farm income is at an all-time high, reaching the record level of $48 billion in 1989. Land values are increasing once again, and exports have rebounded.

Cropland used in 1989 for crops is estimated at 330 million acres, about 12 million above the year before. Another increase is likely in crop year 1990, reflecting strong prices, lower stocks, and relaxed acreage reduction requirements in commodity programs.

The farm balance sheet continues to improve, as well. The debt-to-asset ratio, so crucial for a capital-intensive sector such as production agriculture, is expected to fall to 17 percent in 1989, continuing a decline that began in 1985. This means a financially stronger farm sector. With farmland prices generally on the rise, the sector's equity position reflects steady gains, too, reaching close to $650 billion this year. Total outstanding debt has declined 28 percent since 1983. The condition of agricultural lenders has improved substantially. The volume of delinquent loans has continued to shrink for all major lenders, including the Farm Credit System, the Farmers Home Administration, and commercial banks.

And exports have rebounded strongly. The combination of renewal in overseas demand and an aggressive export marketing effort has helped eliminate the large stocks that hung over commodity markets in 1985 and held prices down. Wheat and corn stocks have fallen to roughly one-third of their levels at season's end 4 years ago. The value of U.S.

agricultural exports in 1989 was up for the third year in a row, reaching the highest annual level since 1981.

In the context of the Uruguay Round of multilateral trade negotiations, U.S. trading partners have agreed that the stated objective of the negotiations is to achieve a substantial, progressive reduction in agricultural support and protection to correct and prevent distortions in world agricultural markets.

Reducing Reliance on Government Price Supports.—Unfortunately, the successes of the 1985 farm bill have come at great cost to the taxpayer—particularly in the form of increased direct payments to farmers to support income. In 1980, such payments amounted to roughly $3 billion. By 1986, price and income support payments to farmers carried out through the Commodity Credit Corporation (CCC) had reached $26 billion. Drought-driven reductions in supply and expanded demand have reduced support payments since then. Nevertheless, the total cost of the 1985 Act will be about $80 billion.

Further action is required to move toward a more market oriented system, consistent with stated U.S. posture in international negotiations. It is clear that, under the current system, a return to normal weather and good crop yields would translate into substantially higher levels of Federal price and income support outlays in the years ahead.

The completion of the Uruguay round of the GATT negotiations and the reauthorization of the farm bill are critical steps that will occur in 1990. The Administration will work closely with Congress to achieve greater market orientation in farm programs in the 1990 reauthorization bill, and to reduce the cost of farm programs, while keeping farm income high. At the same time, our representatives are committed to achieve agreement in the international arena to ensure that equitable subsidy reductions take place worldwide.

The budget proposes to achieve $1.5 billion in savings from the current level of Government price and income support payments. The Administration is prepared to work closely with the Congress, and the Agriculture Committees in particular, to develop market-oriented farm legislation that allows producers to decide what crops to grow, while also achieving the budget savings needed in the commodity programs. This will need to be done in a way that maintains a safety net for farmers to protect them from conditions beyond their control.

Options for Achieving Support Payment Savings.—The 1985 farm bill legislated a steady decline in target prices (income support) and loan rates (price supports). With the expiration of the 1985 Act in the 1991 crop and fiscal years, the budget projects baseline levels of target prices and loan rates unchanged from their 1990 levels. Substantial savings could be achieved if the declining schedule of target prices and loan rates set in the 1985 Act were to be continued or even accelerated. At the same time, the program should seek to eliminate incentives to produce one crop over another strictly because of the differential in Federal benefits being provided.

Savings also could be achieved by reducing the number of acres eligible for payments or targeting benefits to smaller farmers in greatest need. Farmers need more flexibility in deciding what crops to grow and to free production decisions from the Federal subsidy program. Currently, farmers who take acres out of production of program crops cannot substitute other program or non-program crops to boost their incomes. This should be changed. Farmers should be allowed to plant other crops or even the same program crop on nonsubsidized acres and bring those crops to the market. Planting flexibility could produce revenues to offset any loss resulting from lower direct Federal payments, thus allowing farmers to keep incomes strong even as Federal subsidies are reduced.

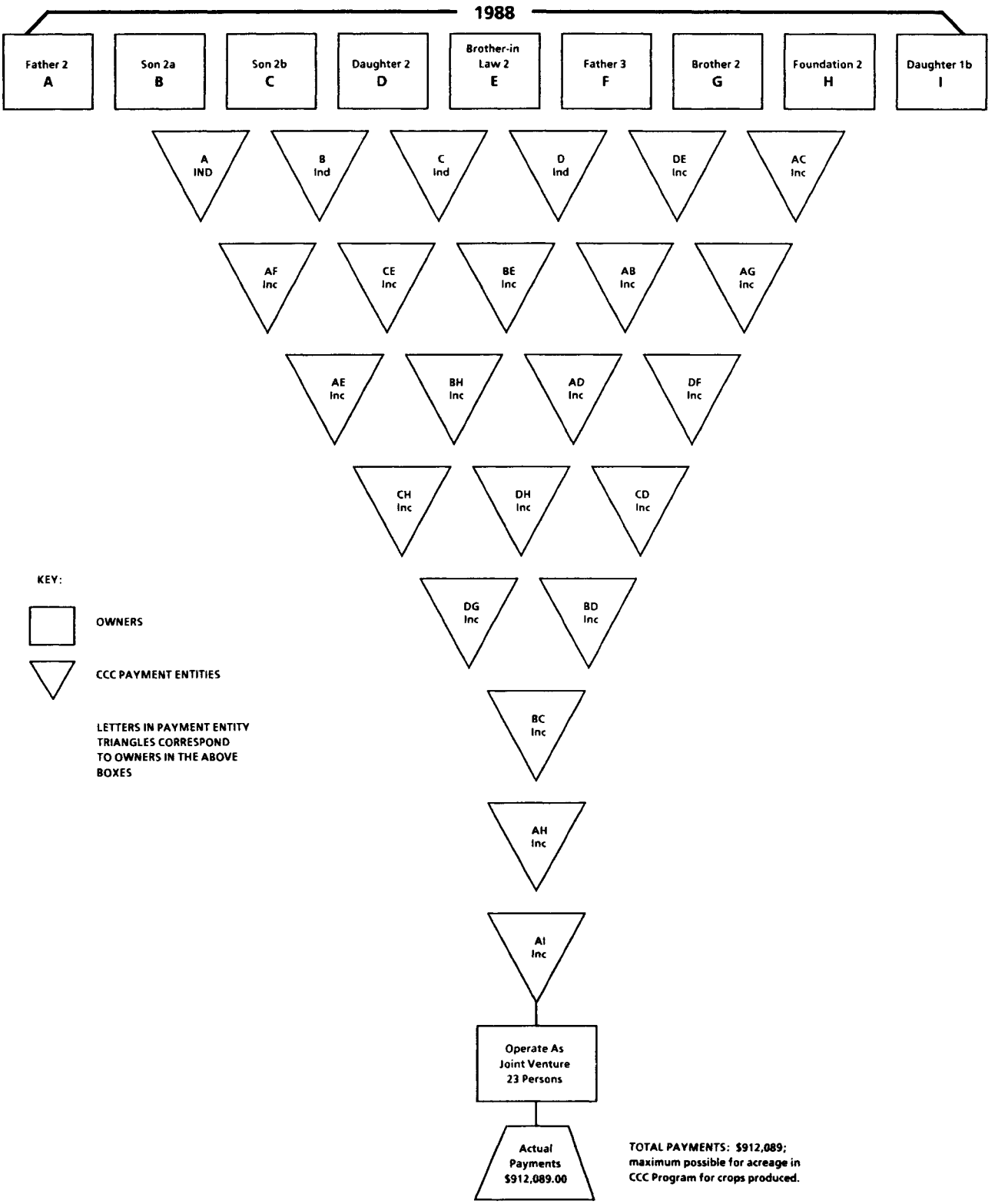
While reducing overall payments is essential to meeting budget goals, the Administration also is concerned about the distribution of those subsidy payments. The number of farms has dropped by 50 percent, and commercial farms today are much larger and more specialized than they were in the 1930s, when support payments were first introduced. A significant portion of benefits goes to larger, wealthy farmers. In an era of limited resources, this is hard to justify.

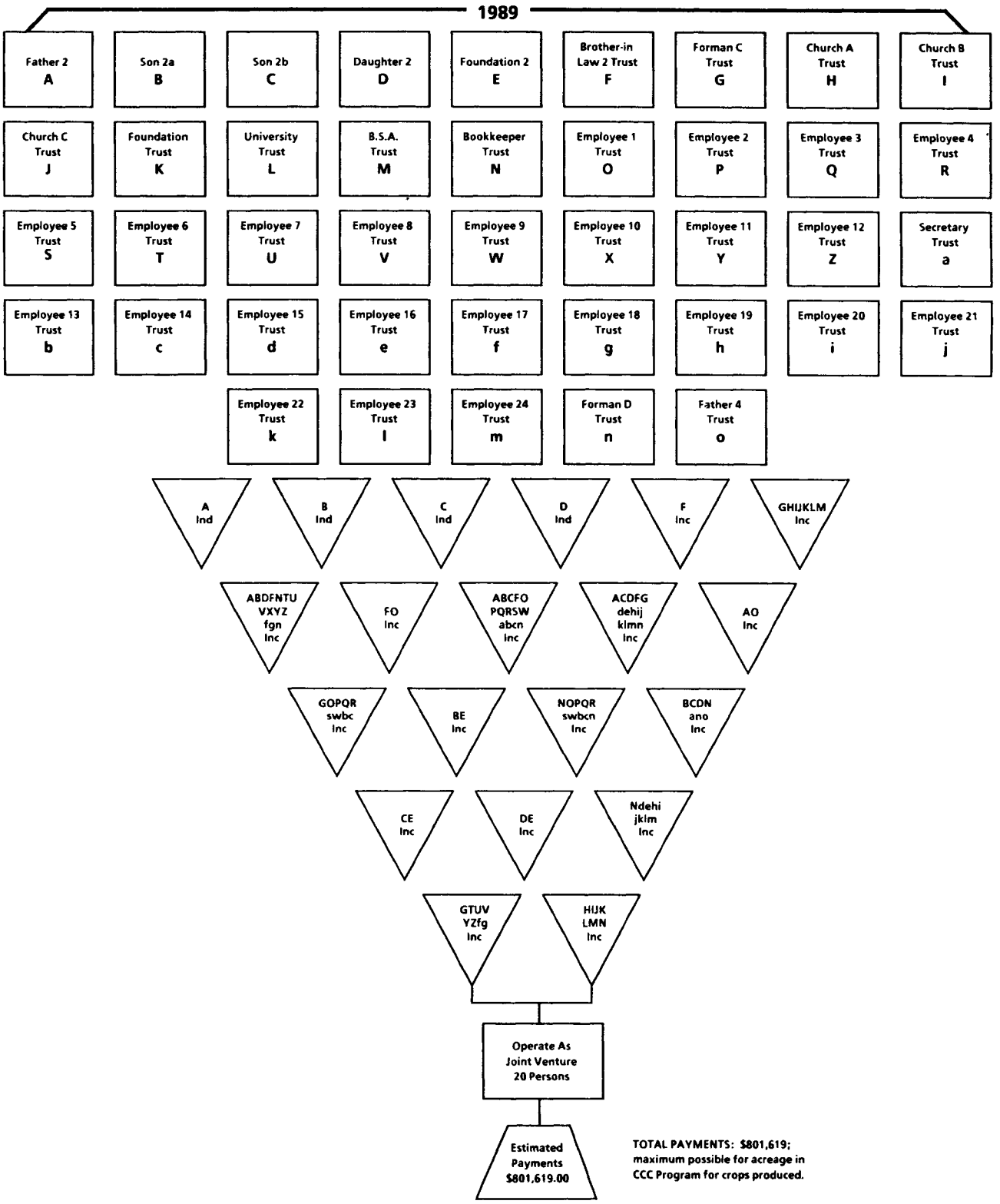
In 1987, for example, 30 percent of the $22.4 billion in commodity related subsidies paid to individuals went to the 4 percent of farm operators with average net total cash incomes of more than $100,000 per year, and with net worths of nearly $850,000. This should be changed. One option for achieving savings of approximately one-half billion dollars would be to eliminate direct payments to farm operators with adjusted gross incomes of over $100,000 per year. This income level, after all, represents three times the average for an American family of four. Up to a billion dollars could be saved by withholding direct payments to farm entities with gross sales of $500,000 per year or more. Clearly, some reductions in Federal payments can be achieved simply by eliminating payments to the wealthiest, least needy farmers.

Enforcing the Cap on Income Support Payments to a Given Individual.—Some farmers are also finding ways to evade limitations in the 1985 farm bill that are intended to prevent excessive Federal subsidy payments to any one individual. The Act limits the amount of income support payments to $50,000 per "person" and limits total Federal subsidy payments to $250,000 per "person" each year. Yet these generous ceilings have been routinely exceeded because a "person" is defined as an individual or a business entity, such as a corporation or a trust. The following charts show an example of a farm business structure used to receive an exceptionally high level of payments in 1988. After the law was changed to tighten payment eligibility, this farm reorganized, as shown, in 1989, to again assure it would receive close to a million dollars in direct payments. These types of practices need to be reformed.

The Administration will work closely with Congress to develop regulations under current law and any necessary legislation as part of the 1990 farm bill to close these loopholes and to eliminate excessive payments to wealthy farmers. Failure to do so will result in a loss of public confidence and support for the farm program. The taxpayers rightly expect these abuses to be curbed.

EVADING THE $50,000 PAYMENT LIMITATION: ORGANIZATION OF A LARGE FAMILY FARMING OPERATION





Power Marketing Administrations: Requiring Sound Business Practices in Repayment of Debts

The Federal Government's ownership of five power marketing administrations (PMAs) can be traced from Federal policies aimed at settling the Western United States and from the days of the New Deal. Currently, PMAs sell about 6 percent of the Nation's electric power (50 percent of its hydroelectric power), generated at 123 Federal dams, mostly in the West and South.

PMAs are able to sell power at prices which are among the lowest in the United States, in part because the public utility districts that are their principal customers receive millions of dollars of hidden subsidies in the form of generous interest rates and long delays in repayment of Federal debt. These subsidies directly discourage energy conservation. For example, Bonneville Power, the largest PMA, supplies about half the electric power used in the Northwest. The region enjoys the lowest power rates in the nation, and, as a consequence, average monthly retail usage is about 42 percent above the national average.

The budget proposes to reform debt repayment practices at four of the five Power Marketing Administrations (PMAs) managed by the Department of Energy, to ensure that the billions of dollars invested in the PMAs is repaid in a timely manner.

The Federal Government has invested over $16 billion in the PMAs to build the dams, powerhouses, transmission lines, etc. used to generate and distribute electric power. In principle, PMAs are required to operate in a business-like manner. For example, they must recover all of their operating costs and capital investment. But in practice the PMAs have not paid back most of the taxpayer's investments and the interest rates on their debt are well below current market levels. For example, about 80 percent of this investment remains unpaid due to the ability of the PMAs to defer repayment of principal. Interest rates on project debt are typically 2 to 3 percent, even though the Treasury's cost of money may be much higher.

Federal law requires PMAs to operate on sound business principles. In addition, statutes authorizing PMA funding require, "the amortization of the capital investment over a reasonable period of years." Accordingly, the budget proposes to enforce a payment schedule in which an equal amount of a PMA's outstanding debt is paid each year—so-called "straight line" amortization. Such a schedule would achieve full repayment within the required period.

In addition to requiring regular principal payments by adopting fixed straight-line amortization schedules, the budget would also require PMA's to pay current market interest rates on their debt. Adoption of these repayment and interest rate reforms would produce $966 million in additional Treasury collections in 1991.

In addition, the budget proposes to modify the accounting practice whereby Bonneville Power books funds borrowed from the Treasury to finance customer conservation as an asset instead of as an operating expense. Few, if any, other utilities in the country make it a common practice to record conservation expenditures as a capitalized asset. By following this practice Bonneville understates the subsidy it is receiving from the Federal government each year and overstates the value of the capital assets it controls.

The budget also proposes to transfer the assets of two of the PMAs, the Alaska Power Administration and the Georgia-Alabama portion of the Southeastern Power Administration, to local customer groups on terms that will protect the interests of both the current customers and the Federal taxpayers. Such customer groups have already expressed an interest in the purchase of these assets. The sales of these assets is estimated to result in receipts to the Treasury of $1.3 billion in 1991. The sales would recoup much of the Federal investment in these PMA's.

Finally, the Administration proposes to offer non-Federal ownership in a major upgrade to an existing transmission line running from South Central Oregon to Northern California. The line would be owned and operated by a consortium of Pacific Northwest non-Federal utilities and local utility districts as well as the Bonneville Power Administration.

PROPOSED MANDATORY PROGRAM SPENDING

(Outlays in billions of dollars)

	1990	1991	1992	1993	1994	1995
Agriculture:						
Federal crop insurance corporation fund	1.0	0.3	—	—	—	—
Commodity Credit Corporation	8.4	10.4	11.2	10.0	8.5	7.4
Other	2.7	2.5	2.6	1.7	1.3	0.9
Commerce and Housing Credit:						
Deposit insurance	10.9	8.9	3.7	3.7	1.8	0.8
Mortgage credit	4.7	3.9	3.3	3.4	3.7	3.7
Other	2.6	2.0	0.9	0.4	0.1	−0.1
Education, Training, Employment and Social Services:						
Guaranteed student loans	3.8	3.2	2.8	2.6	2.4	2.3
Social services block grant	2.8	2.8	2.8	2.8	2.8	2.8
Foster care and adoption	1.4	2.3	2.1	2.4	2.7	3.0
Other	2.5	2.9	4.3	4.3	4.3	4.4
Medicare and Health:						
Medicare	94.2	96.2	107.7	119.5	132.5	146.6
Medicaid	40.2	45.0	49.8	54.7	59.8	65.1
Other	2.8	2.8	3.8	4.6	5.3	6.0
Social Security and Income Security:						
Social security	246.0	262.2	278.3	295.0	311.8	328.7
Family support payments—AFDC and child support enforcement	12.1	12.6	13.1	13.5	13.8	14.3
Job opportunities and basic skills training	0.3	0.9	1.0	1.0	1.1	1.3
Supplemental security income	11.4	13.2	13.9	14.6	16.5	16.4
Child nutrition	5.0	4.8	5.1	5.4	5.8	6.1
Food stamp program	15.3	15.4	16.0	16.7	17.6	18.5
Other nutrition assistance	0.5	0.4	0.4	0.4	0.4	0.4
Federal employee retirement	52.5	53.8	55.1	57.9	60.8	63.6
Other retirement and disability	4.8	5.1	5.3	5.4	5.4	5.5
Unemployment compensation	16.4	16.6	17.2	17.8	18.5	19.3
Other	4.7	5.5	5.6	5.6	5.7	5.8
Social Security Integrity and Debt Reduction Fund	—	—	—	14.1	53.6	101.8
Veterans Benefits and Services:						
Compensation	10.6	11.5	11.7	13.2	12.1	10.8
Pensions	3.5	3.7	3.6	3.8	3.6	3.5
Other	1.7	1.2	1.1	1.1	1.1	1.1
Other Mandatory Spending	−0.2	−0.6	−0.3	−0.8	−1.5	−1.3
Total Mandatory Outlays	562.5	589.7	622.1	674.7	751.9	838.8

Notes: Negative entries result from offsetting collections.

MANDATORY PROGRAM REFORMS: CHANGE FROM BASELINE

(Outlays in millions of dollars)

	1991	1992	1993	1994	1995
Agriculture:					
Federal Crop Insurance Corporation fund	−251	−507	−539	−558	−576
Commodity Credit Corporation	−1,523	−3,133	−4,441	−4,849	−5,457
Other	−7	−7	−4	−4	−4
Child Care:					
Child tax credit (refunded portion)	128	1,286	1,436	1,568	1,742
Refundable DCTC (refunded portion)	29	554	553	538	505
Child Nutrition:					
Increased school lunch subsidy for children 130–185 percent of poverty	48	55	55	56	56
Reduced school lunch subsidy for children above 350 percent of poverty	−220	−244	−259	−270	−283
Means-test day care center meal subsidies	−242	−310	−353	−392	−433
Family Support Payments:					
Child support enforcement:					
Increased paternity establishment and child support enforcement	30	30	30	30	30
Partial recovery of costs from cases middle and upper income cases	−30	−35	−40	−45	−50
Reimbursements capped at level of AFDC collections	−10	−15	−20	−25	−30
AFDC:					
Concurrent collection of quality control penalties	−23	−23	−17	−5	1
Federal Employees Health Benefit Program:					
Postal Service annuitants	−726	−803	−881	−975	−1,046
Other reforms	−850	−901	−955	−1,012	−1,073
Federal Employee Retirement:					
Civilian retirement lump sum reform	−1,489	−1,981	−1,973	−1,961	−1,946
Civilian and military retirement COLA freeze and CPI–1 percent	−1,449	−2,345	−3,008	−3,724	−4,490
Other	−13	−6	−9	−13	−16
Federal Housing Administration	−307	−626	−430	−405	−318
Food Stamp Program:					
Reauthorization	15,281	16,083	16,803	17,682	18,556
Effects of increased child support enforcement	−50	−70	−70	−70	−70
Employment and training	−18	−21	−21	−22	−22
Foster Care:					
Limit growth of administative costs	−121	−290	−478	−659	−807
Prior year claims	544	—	—	—	—
Guaranteed Student Loans:					
Guarantee agency reinsurance at 90 percent	−1	−4	−19	−53	−96
Reinsurance fee at 0.5 percent	−18	−25	−26	−27	−26
Delay disbursements to first-time student borrowers	−16	−64	−80	−74	−73
No commissioned sales people	—	−1	−4	−7	−8

MANDATORY PROGRAM REFORMS: CHANGE FROM BASELINE—Continued

(Outlays in millions of dollars)

	1991	1992	1993	1994	1995
Credit checks on borrowers age 21 and older	−4	−11	−23	−38	−44
Graduated repayment options	—	—	−1	−6	−12
Allow States to garnish defaulter wages	—	−2	−6	−10	−14
Restrict "ability to benefit" eligibility	−1	−7	−20	−33	−37
Medicaid:					
Expand managed care	25	95	25	0	0
Effect of floor on SMI premium	0	65	150	255	380
Medicare:					
Increase HMO payments to 100 percent of AAPC	180	255	275	300	325
Reform Direct Medical Education payments	−205	−215	−240	−250	−270
Hospital Insurance (HI):					
Set rural hospital capital reimbursements at 85 percent	−170	−210	−230	−250	−270
Set urban hospital capital reimbursements at 85 percent	−1,360	−1,720	−1 880	−2,050	−2,220
PPS update at 4.1 percent	−640	−820	−890	−920	−1,020
Set indirect Medical Education factor at 4.05 percent	−1,030	−1,300	−1,420	−1,540	−1,680
Limit payments for intern/resident-to-bed ration	−10	−10	−10	−10	−10
Eliminate return on equity payments to skilled nursing facilities	−70	−80	−80	−80	−90
HI premium	2	2	3	3	3
Supplementary Medical Insurance (SMI):					
Extend prior authorization authority to carriers	−64	−66	−68	−70	−71
Physicians:					
Reduce payments for overpriced procedures	−110	−180	−210	−240	−260
Update primary care services only	−450	−800	−1,050	−1,175	−1,300
Reduce payments for overpriced localities	−50	−80	−100	−110	−120
Cap payments for technical component of diagnostic tests	−20	−30	−30	−40	−50
Extend and make permanent payment limits on new physicians	−50	−80	−100	−110	−120
Eliminate duplicate payments for physician assistants	−5	−10	−10	−10	−10
Limit radiology fee schedule to 90 percent of national average	−110	−205	−235	−265	−295
Limit payments for technical radiology component	−40	−70	−70	−80	−90
Limit anesthesia payments to 90 percent of national average	−50	−100	−110	−120	−140
Limit payments for supervised anesthesia	−70	−120	−130	−150	−170
Reform payments for assistants-at-surgery	−120	−160	−180	−200	−220
Limit payments for surgical global fees	−50	−90	−100	−110	−120

MANDATORY PROGRAM REFORMS: CHANGE FROM BASELINE—Continued

(Outlays in millions of dollars)

	1991	1992	1993	1994	1995
Outpatient Departments:					
Set outpatient reimbursement rate at 80 percent	−100	−130	−150	−170	−200
Reduce outpatient payments by 10 percent	−570	−770	−900	−1,050	−1,210
Durable Medical Equipment:					
Establish enteral-parental fee schedules	−10	−15	−20	−20	−20
Update for fee schedules below caps only	−20	−30	−30	−40	−40
Limit oxygen payments to 95 percent of fee schedule	−20	−30	−40	−40	−40
Pay rental items at 120 percent of allowed charges	−90	−140	−160	−170	−190
Set national payment limit at 100 percent of median	−110	−200	−220	−250	−270
Lower national limit on lab payments/update for labs below caps only	−60	−110	−130	−150	−170
Extend ESRD Medicare secondary payer	−30	−40	−40	−50	−50
Set floor on SMI premium at 25 percent of program costs	—	−673	−1,751	−3,129	−4,808
Subtotal, Medicare	−5,468	−8,227	−10,306	−12,546	−15,196
PMA—debt repayment reforms	−966	−942	−942	−899	−867
Public Health Service Commissioned Officers					
Accrual to the commissioned corps retirement fund	183	190	198	205	211
Railroad Retirement:					
Return pension program to private sector	—	—	—	—	—
COLA proposal	−37	−70	−95	−121	−145
Finance 25 percent of windfall benefits from rail pension fund	80	78	75	71	68
Rural Housing Insurance Fund	−5	−107	−213	−335	−467
Social Security:					
Tax refund offset	−79	−97	−27	−18	−18
Eliminate advance tax transfers	—	—	—	—	—
Pre-effectuation review requirements	−2	−5	−5	−6	−8
Coverage of adopted children	—	1	1	2	2
Conform Railroad SSEB with OASDI	62	64	66	68	69
Social Security Integrity and Debt Reduction Fund	—	—	14,100	53,600	101,800
Special Assistance to Puerto Rico:					
Reauthorization	937	937	937	937	937
Reform	−114	−112	−112	−112	−112
SSI—fee for Federal administration of State supplement	−55	−110	−165	−165	−165
Trade Adjustment Assistance:					
Cash benefits	−119	−163	−163	−162	−166
Training	−21	−58	−74	−75	−76
Veterans:					
Limit inheritance of benefits by remote heirs	−157	−175	−180	−184	−187

MANDATORY PROGRAM REFORMS: CHANGE FROM BASELINE—Continued

(Outlays in millions of dollars)

	1991	1992	1993	1994	1995
Pensions for hospitalized veterans	14	14	14	15	15
Eligibility verification	−61	−149	−207	−215	−215
Third party medical reimbursement	−392	−537	−676	−764	−775
Require housing downpayment	—	−6	−22	−32	−44
Include housing resale losses in net-value	−81	−46	−74	−123	−122
Eliminate Manufactured Home Loan. Program	—	−2	−4	−6	−8
File MHLP claims upon receipt of resale price	−5	−4	−3	−2	−1
Other Mandatory Changes	−74	−74	−37	−79	−122
Total changes from baseline*	2,287	−2,881	7,432	43,905	88,709
Adjustments for:					
Food Stamps and Assistance to Puerto Rico	−16,218	−17,020	−17,740	−18,619	−19,493
Social Security Integrity and Debt Reduction Fund	—	—	−14,100	−53,600	−101,800
Total mandatory program savings	−13,901	−19,901	−24,408	−28,314	−32,584

* Does not include the following amounts for the Postal Service fund, which are not included in the baseline (in millions of dollars): 1991, $1,721; 1992, $692; 1993, $126; 1994, $−92; 1995, $−376.

VI. ACKNOWLEDGING INHERITED CLAIMS

VI.A. ACCOUNTING FOR DEBT AND UNFUNDED ANNUITIES

Federal policies in the past have produced liabilities for the present, and Federal policies in the present are producing liabilities for the future. This is not unnatural. A healthy government extends beyond generations—as do both its liabilities and the returns on its investment. It is important, however, to assess the pattern of overall liabilities with a view toward ensuring that the burdens left to the future are reasonable.

Debt is the most explicit and legally binding obligation of the Federal Government. The Government owes $2.2 trillion of principal to the people who have loaned it the money to pay for past deficits. This year it will pay an estimated $176 billion of net interest. The present deficit is continuing to increase the amount of debt, although less rapidly than several years ago.

Annuity programs have also created large and growing obligations on future taxpayers. The Government spent $382 billion in 1989 for social security, medicare, and Federal employee retirement programs, and the budget estimates it will spend $433 billion in 1991. Although these obligations may be changed by law, and some modest changes are proposed for some of them in this budget, they are substantially a moral obligation to the people who are counting on them for future support. These programs are projected to become much larger relative to the economy in future decades than they are now. This section of the budget assesses these inherited claims.

DEBT

Debt has expanded vastly since World War II as households, businesses, and governments have borrowed to finance the accumulation of assets and other expenditures. As depicted in the following chart, total credit market debt (public and private) grew at about the same rate as GNP from around 1950 through 1981. The share of Federal debt fell sharply, while the shares of household and business debt rose considerably, but the overall total maintained a stable proportion of GNP.

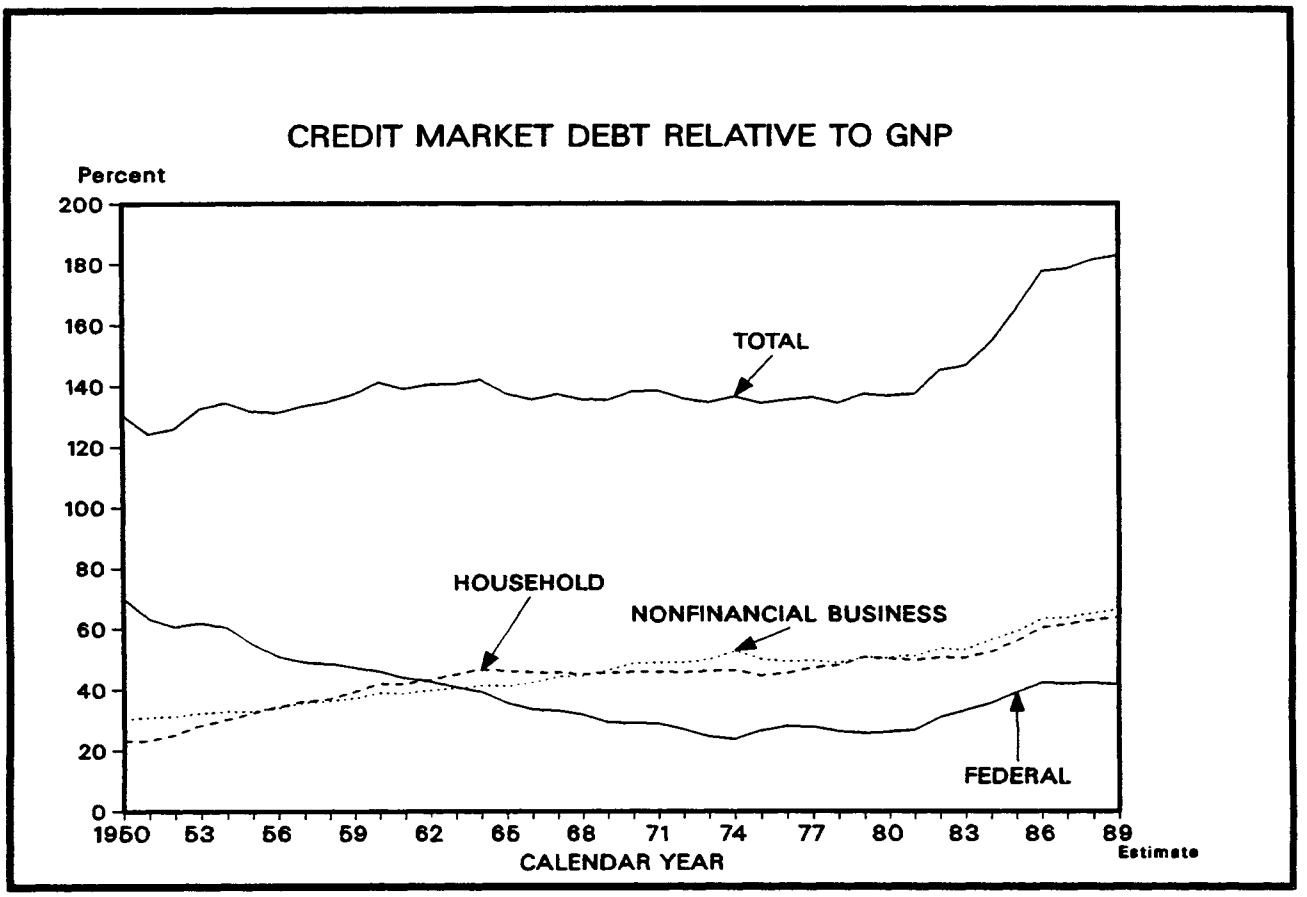
During the past few years, however, total debt increased as a percentage of GNP every year. Federal debt as a percentage of GNP rose most markedly, returning to the levels of the early 1960s, before starting to decline recently. But household and nonfinancial business debt also increased faster relative to GNP than in the postwar period as a whole. The following discussion describes the build-up of household, business, and Federal debt and evaluates its significance. It also documents the decline in the relative size of the Federal debt estimated to occur under the policies that are proposed in this budget.

HOUSEHOLD DEBT

The household sector is the second largest borrower in the economy, with an estimated total debt of $3.4 trillion by the end of 1989. Over two-thirds of household debt is home mortgages; over one-fifth is installment credit.

Total household debt has grown faster than disposable personal income, especially in the 1980s. The ratio of debt to income is estimated to reach a high of 88 percent in 1989, up from 73 percent a decade earlier. This ratio has been on an upward trend for decades, setting new highs in 27 of the past 40 years. Increased reliance on credit cards as a substitute for currency and checks, and the lengthening maturities on automobile and other loans, have raised the ratio but have not increased the burden of the debt in the same proportion.

Whether the consumer is overextended depends not only on income flows, but also on the assets that can be drawn upon to meet monthly payments. Households' extensive holdings of homes, land, and consumer dura-



bles make them the largest owners of physical capital in the country. Indirectly, households own almost all of the Nation's physical capital through their holdings of financial assets. For every dollar of tangible assets owned by the household sector, it also holds $1.90 of financial assets. The fastest growing financial assets in this decade have been stocks, pension funds, life insurance reserves, and the debt of other sectors. In total, households hold $21 trillion of assets, more than five times larger than their total liabilities.

NONFINANCIAL BUSINESS DEBT

The debt of nonfinancial businesses has been growing at about the same rate as that of households. By the end of 1989, it reached $3.5 trillion, of which $2.1 trillion was owed by corporations. Noncorporate nonfarm businesses had $1.3 trillion of debt, with the remainder accounted for by farms.

The debt of the noncorporate nonfarm sector is dominated by the debt of real estate partnerships. Almost all of the increase in the debt of this sector is due to the value of mortgages, which account for three-quarters of the sector's debt. Debt has been increasing twice as fast as total assets, implying a substantial increase in leveraging. In contrast, the farm sector has had an absolute decline in debt since 1983, although at the same time there has been a large drop in land prices and net worth. Nevertheless, the ratio of total farm liabilities to net worth has been declining since the mid-1980s and is now close to its level in the early part of the decade.

Among corporations, debt growth has been stimulated by the increasing acceptance of below-investment-grade bonds. These have greatly expanded the ability of corporations to substitute debt for equity, fueling a boom in merger and acquisition activity. Since the end of 1982, $567 billion of equities have been retired, while corporations have added $1,114 billion of debt. On a book value basis, the ratio of debt to equity is now near a record high. How-

ever despite the net retirement of shares, the more-than-tripling of stock prices since 1982 has raised the market value of outstanding equity by almost as much as the increase in debt. As a result, the debt/equity ratio measured at market value is at a level substantially below its peak in the 1970s.

The rapid rise in corporate debt has raised concerns that the sector has become more vulnerable to high interest rates or recession, which would make it more difficult for debt-laden firms to avoid bankruptcy or default. The interest coverage ratio, which measures the weight of interest payments on corporate cash flow, is now 19 percent; that is abnormally high for this point in an economic expansion. In previous cycles, the ratio fell until a cyclical peak was reached, and rose only when earnings had declined. The burden of interest payments is now as heavy on firms as it ever was at the trough of previous recessions.

This might suggest that debt-laden firms have left themselves highly exposed if the economic environment becomes less favorable. However, this conclusion needs to be tempered by the fact that mergers and acquisitions, as well as leveraged buyouts, have tended to occur in relatively less cyclical industries. These industries typically have smaller-than-average declines in production and cash flow during recessions.

FEDERAL DEBT

Federal debt held by the public has tripled since 1980, reaching $2,189 billion at the end of 1989. Its growth was particularly rapid through 1986, increasing at an annual rate of 16 percent. The rate of increase was cut in half from 1986 to 1989, and further deceleration is projected for the next several years.

At the end of World War II, Federal debt equalled more than 100 percent of GNP. From then until the 1970s, Federal debt grew gradually, but, due to inflation, it declined significantly in real terms. Because of an expanding economy as well as the inflation, Federal debt decreased almost every year as a percentage of GNP. With households and businesses both borrowing heavily, Federal debt also decreased as a percentage of total credit market debt.

During the 1970s, large budget deficits emerged as the economy was disrupted by oil shocks and recessions. The nominal value of Federal debt more than doubled and, despite high inflation, the real value of Federal debt increased by about a fifth. The debt to GNP ratio stopped declining by the middle of the decade.

The growth of Federal debt accelerated during the 1980s. Budget deficits were high. With inflation successfully reduced, the growth in nominal debt meant a growth in real debt as well. The ratio of Federal debt to GNP rose from 27 percent in 1980 to a peak of 43 percent in 1988 before starting to decline in 1989, though the 43 percent peak was still well below the ratio that existed from 1945 to 1960. The ratio of Federal debt to total credit market debt also increased up to 1986, though to a lesser degree, before starting to decline.

Under the policies proposed in this budget, the total Government budget would be balanced in 1993, and debt would begin to be retired. By 1995, the Federal debt would be virtually the same in nominal terms as in 1989. In real terms, it would be a fifth less. Federal debt as a percentage of GNP would have declined from a peak of 43 percent to 29 percent—its 1970 level. And net interest would be a much smaller drain on the budget, accounting for only 9.2 percent of total outlays.

The net effect of Federal borrowing depends partly on how the Government uses the borrowed funds. To the extent that borrowing finances additional investment with a high rate of return, the combination of more debt and more capital is productive. It is impossible to definitely attribute specific outlays to the borrowing. The funds from borrowing and general taxes are mixed together.

However, the data do not reveal that any upsurge in Federal investment accompanied the upsurge in Federal borrowing. Investment rose in absolute terms but was about the same proportion of total Federal outlays at the end of the 1980s as at the beginning; and investment outlays, while significant, were a modest proportion of total outlays.

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TRENDS IN FEDERAL DEBT

(Dollar amounts in billions)

	Debt held by the public [1]		Debt held by the public as a percent of:		Net interest as a percent of total outlays
	Current dollars	Constant 1982 dollars [2]	GNP	Credit market debt [3]	
1950	219.0	921.0	82.1	54.3	11.3
1955	226.6	839.0	58.6	43.1	7.1
1960	236.8	761.3	46.7	33.5	7.5
1965	260.8	772.4	38.8	26.9	7.3
1970	283.2	682.7	28.6	20.8	7.4
1975	394.7	686.2	25.9	18.4	7.0
1980	709.3	837.0	26.6	18.7	8.9
1981	784.8	841.9	26.3	18.8	10.1
1982	919.2	919.2	29.3	20.2	11.4
1983	1,131.0	1,085.1	34.0	22.5	11.1
1984	1,300.0	1,201.5	35.3	22.7	13.0
1985	1,499.4	1,344.4	37.9	23.2	13.7
1986	1,736.2	1,516.2	41.5	23.6	13.7
1987	1,888.1	1,600.1	42.6	23.3	13.8
1988	2,050.2	1,686.1	42.8	23.1	14.3
1989	2,188.9	1,727.7	42.5	22.8	14.8
1990 estimate	2,298.7	1,744.2	41.9	—	14.7
1991 estimate	2,357.3	1,716.5	40.0	—	14.0
1992 estimate	2,383.0	1,668.5	37.7	—	12.9
1993 estimate	2,365.2	1,596.9	34.9	—	11.9
1994 estimate	2,300.4	1,502.1	31.9	—	10.6
1995 estimate	2,188.7	1,386.2	28.6	—	9.2

[1] The relationship of Federal debt held by the public to gross Federal debt and debt subject to limit, which include the debt held by trust funds and other Government accounts, is explained in Section Two, Part IV-F, "Technical Perspectives on Expenditures, Off-Budget Activities, Capital Outlays, and Borrowing."

[2] Debt in current dollars deflated by the GNP deflator for the fiscal year with FY 1982 = 100.

[3] Source: Federal Reserve Board flow-of-funds accounts, modified to be consistent with budget concepts for the measurement of Federal debt.

FOREIGN CAPITAL INFLOW

Some of the debt owed by Americans is held by foreigners, but this debt is only part of the claims of foreigners on the United States. Debt instruments such as Treasury and corporate bonds comprise about one-third of all foreign assets in the United States. The indirect holding of debt through bank deposits accounts for another third. The remaining third consists of direct investment in physical capital and corporate equity.

Both foreign assets in the United States and U.S. assets abroad have increased steadily in the postwar years. However, as discussed in Part III-A, there was a surge of foreign capital into the United States during the 1980s. This was a necessary consequence of the shortfall of domestic saving compared to domestic investment. Before 1985, U.S. assets abroad exceeded foreign assets in the United States. The official statistics show that foreign assets have been larger since that time, and the excess of foreign assets has increased steadily. By the end of 1988, the book value of foreign assets in the

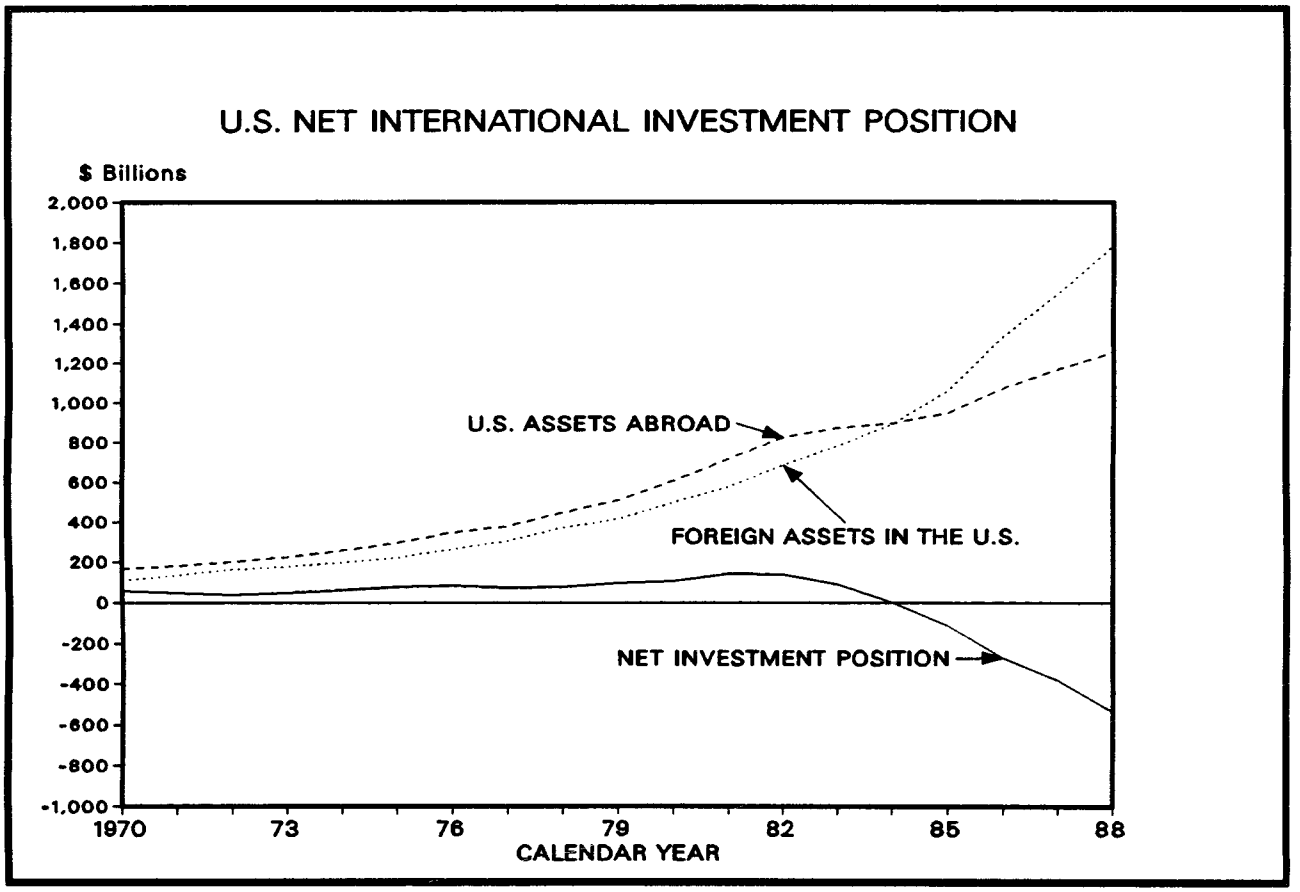
United States exceeded U.S. assets abroad by $533 billion.

Measurement problems probably exaggerate the difference between U.S. assets abroad and foreign assets in the United States. The most serious problem is that direct investment assets (real estate, plant, and equipment) are recorded at book rather than market value. Book value is much closer to market value for foreign direct investment in the United States than it is for U.S. investment abroad because the foreign investment is more recent. Unreported capital inflows to the United States, on the other hand, lead to an understatement of the assets held by foreigners. On balance, the U.S. net international investment position appears understated. However, there is no doubt that the trend has been downward in recent years.

OVERALL EFFECTS

Borrowing may be thought most appropriate when it finances additional capital investment. If that investment has a rate of return as high or higher than the interest rate, the burden of servicing the debt is matched over time by the benefits from the investment. As a result, the borrower can service the debt without being burdened. This not only makes the debt more secure, but it also ensures that the borrower's future well-being is improved or at least not depressed by having borrowed in order to pay for the spending.

Part III-A discussed the recent trend of investment. The accelerating growth of debt in the United States has not been matched by accelerating investment. The growth of capital services has remained in line with its postwar trend. Federal investment has at best been roughly stable as a share of total Federal outlays. Thus for the economy as a whole the above-normal growth in debt does not seem to have financed additional capital investment beyond what might have been expected. This has led to some concern that the future output and living standards of the Nation may be



reduced. Although there is reason for this concern, sound policies now can increase saving and productivity, while making future debt service manageable.

UNFUNDED ANNUITIES

The Federal Government has established a number of programs for the elderly, which consume a high and rising share of the budget. The budget estimates that the Government will spend $433 billion in 1991 for social security, medicare, and Federal employee retirement. This is 35.1 percent of total outlays and 7.3 percent of GNP. Reforms to mandatory programs are discussed in Part V.

Federal responsibilities will grow over the next 20 years, but probably not much faster than the economy. As the baby boom generation retires in the following 20 years, however, from 2010 to 2030, the growth of outlays for these programs will accelerate in relation to the past, to total Federal outlays, and to GNP. Under present projections, the claim of these programs on the Nation's resources will then rise to a permanently higher level.

Estimates of the size of these claims differ substantially depending on demographic and economic assumptions and on the time horizon and method of estimation. Estimates made a few years from now will undoubtedly differ from those today. Based on intermediate assumptions, the social security actuaries have estimated that the present value of retirement and disability benefits over the next 75 years is $16.5 trillion, and the present value of hospital insurance is $1.8 trillion. Based on different assumptions and methods, the present value of civil service and military retirement benefits is estimated at $1.0 trillion.

Actuarial Deficiency of Annuity Programs

Some provisions have already been made to pay for these liabilities, but they differ both in their basic nature and in their degree of adequacy. Every year, the Department of the Treasury reports on the actuarial deficiency for each of these programs. Many of the estimates are made on the basis used by private pension plans to assess their actuarial liability. This method calculates the present value of future benefits for current employees, and subtracts from it the present value of assets and future contributions on behalf of or from current employees only.

Calculated this way, the actuarial deficiency for social security in September 1989 was $6.1 trillion. But this calculation is not useful for social security. A private firm can go out of business, but the Federal Government is on-going and so is the social security program. The continuing contributions by future employees and their employers finance the benefits for current employees when they retire.

With an on-going program, future social security payroll taxes, the income tax receipts on social security benefits, and the interest on the Treasury securities held by the trust funds will cover most of the cost of future benefits. From the perspective of the trust funds, the present value of their income over the next 75 years is $15.6 trillion, leaving an actuarial deficiency of $850 billion in September 1989.

It is, of course, very difficult to foresee economic and demographic conditions 75 years ahead. Other reasonable assumptions would yield different estimates; based on the range of assumptions now used by the actuaries, the deficiency ranges from an actuarial surplus of $2.3 trillion to an actuarial deficit of $3.7 trillion. Indeed, if the conditions of the last 75 years, including the inflation and slow productivity growth of the 1970s, were to be repeated in the years ahead, the deficiency would probably be even larger. Clearly, strong economic growth and low inflation are crucial to social security—especially given the size of the program relative to the economy and the budget.

If future economic and demographic conditions are exactly as assumed by the actuaries in their intermediate assumptions, the actuarial gap of $850 billion over the next 75 years would seem to be a problem of manageable size in relation to the size of the economy over that extended period.

For medicare, the Treasury shows an actuarial deficiency based on intermediate assump-

tions of $252 billion in 1988, almost a third as much as social security despite the much smaller current size of hospital insurance compared with social security. In this program, the aging of the population is augmented by the rapid increase in health costs to increase the actuarial gap.

The estimates of actuarial deficiency that Treasury reports for Federal employee retirement programs incorporate only the benefits that have actually been earned to date and the contributions that have actually been made by agencies and employees into the civil service and military retirement funds. For 1987, the latest year with data, the deficiency of the civil service retirement and disability fund was $369 billion; for 1988, the deficiency of the military retirement fund was $389 billion.

Together, they appear almost as large as the deficiency for social security. But the appearance is very misleading. Deficiency estimates are also made for these funds on essentially the same basis as the method which sets social security's deficiency at $6.1 trillion; that is, they assume that future contributions will be made and future benefits will be earned by present Federal employees. On this basis, the estimates of actuarial deficiency are $486 billion for civil service and $498 billion for military retirement.

Most basically, these Federal employee pensions are mature systems. Unlike social security, the ratio of beneficiaries to workers in Federal employee retirement systems is steady or even declining. There should be no problem paying these benefits as they come due, though these annuities are, in the accounting sense, underfunded.

Costs of An Aging Nation

The United States is an aging Nation. The median age is at an all-time high, yet if the current Census projections prove to be correct, it will never again be as low as it is now. Life expectancy has risen dramatically in this century and is continuing to rise. As recently as 1930, life expectancy at birth was 60 years; by 1970 it was 71 years, and by 1988 it was 75 years. In 1930 only 5.4 percent of the population was 65 years or older; by 1970 it was 9.8 percent, and by 1988 it was 12.4 percent.

Between now and 2010 the number of people over 65 will rise at only half the postwar pace as the small prewar depression generation retires. However, as the postwar baby boom generation reaches 65 between 2010 and 2030, the number over 65 will increase by two-thirds, from 39 million to 66 million. Assuming the Census intermediate projections, they will comprise about 22 percent of the population.

The cost of retirement has been increasing as the Nation ages. Its duration has been stretched not only because people are living longer after age 65 but also because a growing proportion has been retiring before age 65. At age 65, men could look forward to 13 additional years of life in 1970, 15 years now, and 17 years in 2030, according to the middle Census mortality figures. For women, the years after age 65 increased from 17 to 19 to 22. At the same time, the proportion of men who retire before 65 has risen from 17 percent in 1970 to 33 percent in 1989; this increases the number collecting benefits and reduces the number paying taxes.

The cost of medical care is rising at an even faster rate, in part because of the advances in technology that have helped extend life. The elderly are the most intensive users of medical services. Those over 65 use over a third of all medical care, 3 times their proportion of the population. People over 85 are still more intensive users; these elderly people are projected to rise from 1.2 percent of the population now to 2.7 percent in 2030.

The burden of the annuity and medical care programs will therefore become significantly greater starting around 2010. The number of social security beneficiaries per 100 covered workers, an indicator of the burden, will increase from 30 now to an estimated 51 in 40 years. One of the greatest economic and social challenges our Nation will face is how well we prepare for the forthcoming increase in the cost of the elderly population.

Options

The options for dealing with this demographic shift are limited. One alternative would be to meet the claims of the annuity programs by levying the taxes each year that are needed to pay that year's promised benefits. Such pay-as-

you-go finance was approximately the way social security operated until a few years ago. This method, however, would eventually force large increases in Federal taxes relative to workers' incomes. It could create a major conflict in the future between a large generation of retirees expecting to receive the benefits and a relatively small generation of workers who are producing the output and paying the taxes to provide the benefits.

A second alternative would be to reduce the benefits, to include a larger proportion of benefits in taxable income, or to raise the normal retirement age in line with life expectancy, while continuing to permit early retirement with reduced benefits. Under current law, the normal age of eligibility for social security benefits is already scheduled to increase from 65 to 67 between 2000 and 2027. Health may improve along with longevity, and the demand for experienced workers may be strong as growth in the labor force slows.

A third—and preferred—alternative is to expand investment and thereby economic growth so that in the future the Nation can meet inherited claims with moderate tax rates. Ways to increase economic growth over the rates that would otherwise prevail are discussed in Part III. The following section discusses the benefits of funding annuities and using the social security surplus to promote a higher rate of capital formation.

FUNDING ANNUITIES

Funding is the act of setting aside resources to pay future pension claims. Current funding on an accrual basis requires setting aside adequate resources to finance the increase in the present value of future claims earned during the same period. If a private pension plan is being funded, the employer and sometimes the employee save out of income each year in order to build up pension fund assets. These assets are invested, earn income, and can be drawn upon to pay future claims. Such funding adds to national saving, although a part is offset to the extent that there are decreases in other personal saving for retirement. The resulting increase in the rate of capital accumulation increases economic growth and helps to provide the resources to support retirement benefits without overburdening future workers.

For a Federal program, in contrast, "funding" may have two quite different meanings—accounting and economic. In an accounting sense, it means that a program is accumulating funds in an account earmarked for the payment of future benefits. As explained below, such funding does not mean that the program's accumulation of assets adds to national saving and investment. Funding in an economic sense only occurs if the balance for the budget as a whole is improved by the "funding"; the Federal deficit must be reduced or a surplus increased so as to provide additional national saving.

Some examples will illustrate the implications of funding in the accounting sense and in the economic sense.

First, take the case of a Federal employee retirement program which is not funded in either sense, such as military retirement before 1985 (or the Public Health Service commissioned officers currently). While employees worked and accumulated rights to retirement benefits, nothing was recorded in the budget. When they retired, each year's benefits were financed from the general fund.

Second, take the case of a Federal employee retirement program which is fully funded in the accounting sense, such as the new Federal employee retirement system (FERS). While employees work, employer and employee payments made to the civil service retirement and disability fund are adequate (along with future interest earnings) to cover the future benefits earned by the employee during the same period. Agency outlays would be higher than under the first case, reflecting the full cost of the agency's workforce. These payments would not show up as an increase in outlays for the budget as a whole, however; they would be offset by a deduction for the amount collected by the retirement fund. The budget as a whole would appear the same as under the first case; only benefit payments from the fund to current retirees would show up as outlays.

What are the implications of funding in the accounting sense? Acknowledging the full cost of its workforce provides the agency with the information and incentives to select the most

efficient combination of labor and other resources to get the job done. It also provides the President and the Congress with the appropriate cost information and incentive to allocate budget resources among programs. But there is no reason to suppose that it has any more effect on the Federal deficit than the first case.

Finally, there is social security. The social security trust funds currently receive earmarked taxes from the public that exceed outlays. If the social security surplus reduces the total budget deficit, it reduces Federal dissaving, adding to national saving and investment.

This will not happen as long as the social security surpluses simply finance additional Federal spending. Without a mechanism to prevent this, the social security surplus in effect reduces the need for other taxes or allows higher levels of other expenditure, so that Federal dissaving or saving is unchanged. There is a large reserve in the social security trust fund but national saving and investment are unchanged, the capital stock is not raised, and productivity is not improved. No funding occurs in an economic sense; no provision is made in the present to ensure that future taxpayers can pay for inherited claims.

SOCIAL SECURITY

Social security consists of two trust funds—the old-age and survivors insurance (OASI) trust fund and the disability insurance (DI) trust fund—which together are estimated to spend $265 billion in 1991 in providing income to retirees, disabled workers, their dependents, and survivors.

When the OASI trust fund neared insolvency in 1983, Congress enacted sweeping changes in financing and benefits. These reforms, recommended by a bipartisan commission and supported by President Reagan, were designed to ensure the solvency of the social security program over the long-run as well as through the 1980s.

The Social Security Amendments of 1983 were successful. A deficit of $8 billion in 1982 was converted to a surplus that rose to $52 billion by 1989. In 1991, social security income (primarily payroll tax receipts) is estimated to exceed social security outgo (primarily benefits) by $80 billion, and the trust funds are estimated to hold $299 billion in reserves by the end of the year.

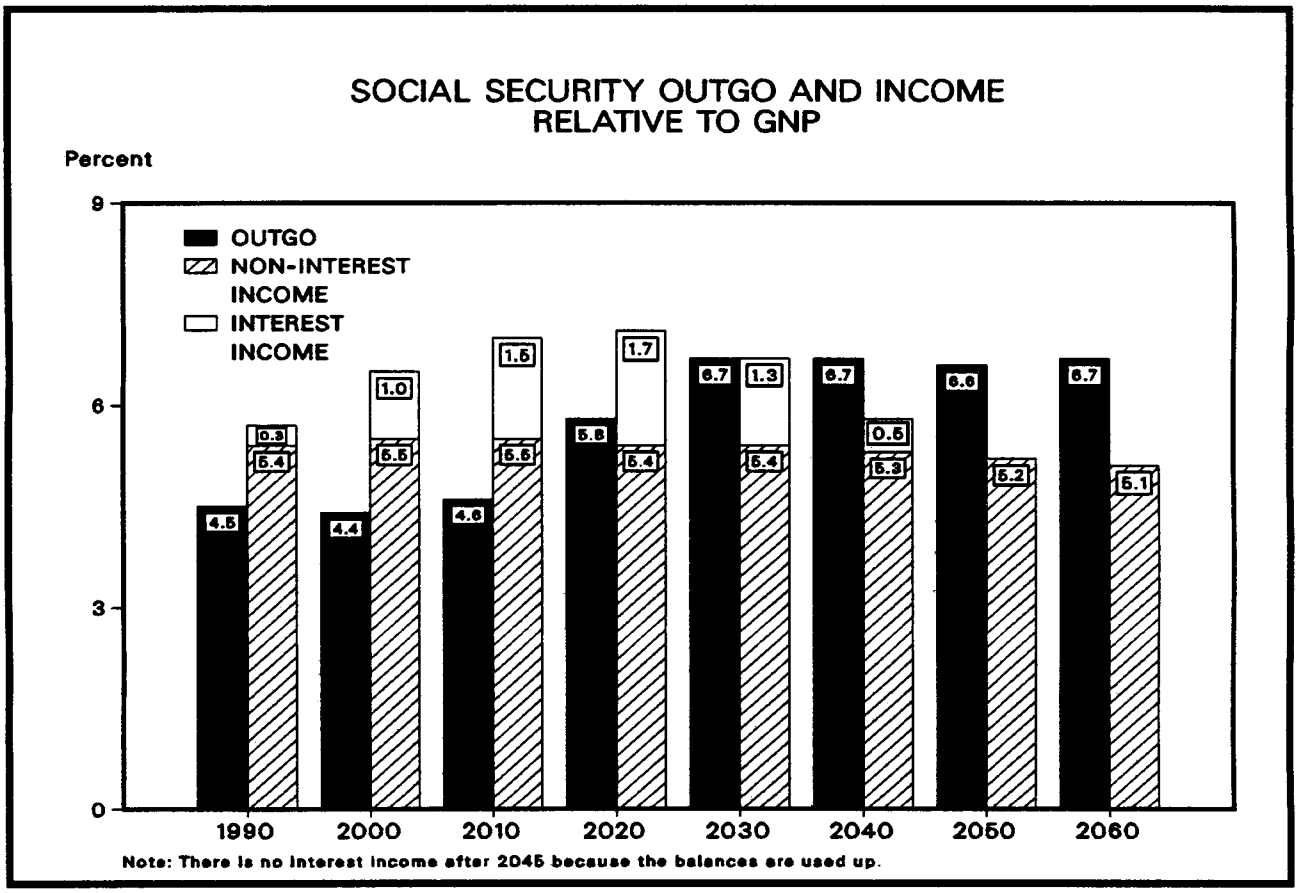
In earlier times, when social security was financed on a pay-as-you-go basis, a reserve of this size would have been more than adequate. It would protect the trust funds against short-term adverse events, like a recession. But one effect of the 1983 reforms is that social security financing was moved away from the traditional pay-as-you-go approach and toward a form of "accrual funding."

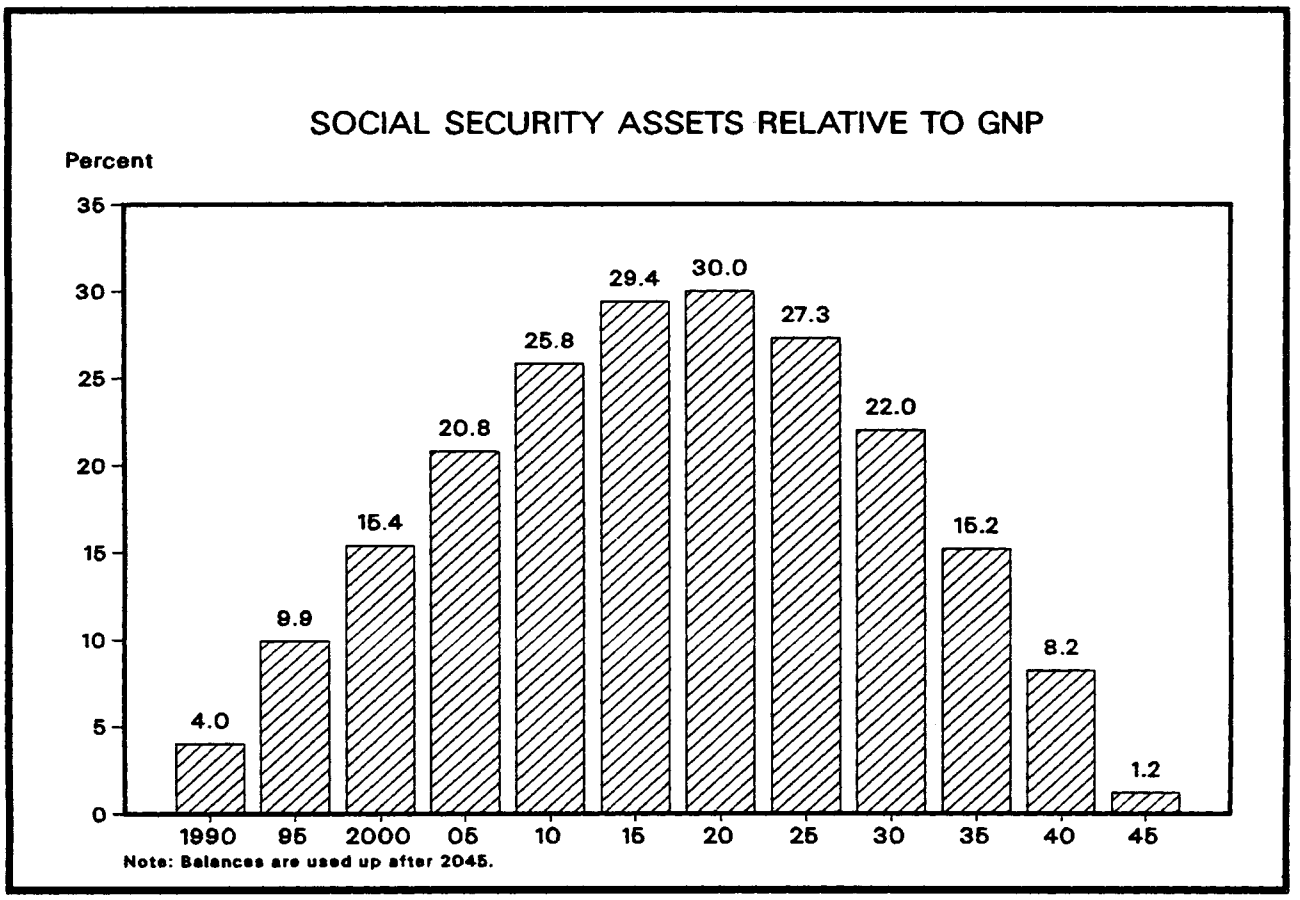
The new approach to social security financing is driven primarily by the demographic trends discussed above. The large number of people born in the two decades after World War II, the baby boomers, are now entering their prime working years. For the next 20 years, while they work and pay social security taxes on their wages, the trust funds should grow dramatically. Current income will not only pay for current social security benefits but will also provide a huge surplus. The budget estimates a social security surplus of $137 billion in 1995; the latest trustees' report, using intermediate economic and demographic assumptions, projects an annual surplus averaging just above 2 percent of GNP from the late 1990s until 2015.

But while the baby boomers are providing surpluses to build up trust fund reserves today, they are also earning social security retirement credits. And when they begin leaving the workforce around 2010, they will claim the benefits that are being promised to them today. The reserve that is currently building is needed to pay retirement benefits in the succeeding decades.

The influence of these demographic trends on social security is evident in the trust fund income, outgo, and balances projected by the actuaries for the latest trustees' report. As depicted in the first of the two accompanying charts, under intermediate assumptions the trust fund income excluding interest will exceed outgo every year until 2018. After 2018, as more and more baby boomers reach retirement age, outgo exceeds non-interest income by increasing amounts and by 2030 exceeds all income. The trust fund balances continue to rise so long as total income exceeds outgo. They reach a peak relative to GNP of 30 per-

cent in 2020, and peak in dollar amount a decade later, but then decline as outgo exceeds the total of all income. The decline is rapid, and the trust funds are projected to become depleted in 2046. The demographic changes are permanent, under the actuaries' projection of a stable fertility rate, and the elderly continue to increase slowly relative to the working age population. As a result, the social security deficit continues to grow larger and larger as a proportion of GNP to the end of the projection period in 2065.





More pessimistic or optimistic assumptions would alter the projected income and outgo streams, but the basic trends remain. Under more optimistic assumptions (such as faster economic growth and higher birth rates), the actuaries estimate that the trust funds would remain solvent throughout the 75-year projection period, but outgo would exceed non-interest income during the peak years of retirement. Under more pessimistic assumptions, the trust funds would still build a huge reserve but the ultimate size would be much smaller, the pace of depletion would be accelerated, and the trust funds would run out of reserves in 2025.

A PROPOSAL FOR ECONOMIC FUNDING

In view of the need for real resources to pay the future claims for annuities—and health care—for the elderly, and particularly in view of the sharp increase in the burden of these payments on the working population between 2010 and 2030, the President proposes to phase in the funding of social security in the economic sense. Fiscal policy would follow the Gramm-Rudman-Hollings deficit reduction path to 1992. Thereafter:

- The social security trust funds would continue to build up reserves exactly as at present. But, in addition a new Social Security Integrity and Debt Reduction Fund would be created and used to reduce Federal debt held by the public, thereby increasing saving and investment and assuring the future capacity to pay social security obligations.
- In 1993, $14.1 billion—an amount equal to 15 percent of the currently expected social security surplus, including interest earnings—would be paid into this fund from the general fund. The payment would be counted as an outlay for purposes of the budget and the G-R-H deficit calculation.
- In 1994, the amount paid into the fund would be $53.6 billion, equal to 50 percent

of the currently expected social security surplus. In 1995, $101.8 billion, equal to 85 percent, and in 1996 and thereafter, an amount equal to all of the currently expected social security surplus, would be paid into the new fund and used for debt retirement.

- G-R-H targets would be set to balance the budget as newly defined from 1993 on. If the targets were met, the entire currently expected social security surplus (or the phased-in portion) would be added to Federal saving, through retirement of Federal debt held by the public.
- The surpluses used to calculate the amount paid into the fund were those projected under intermediate II-B assumptions for the OASI and DI trust funds in the 1989 annual report of the Social Security Board of Trustees. The projections would be updated by the annual report in the year 2000 and every 5 years thereafter.

This proposal would truly preserve the trust fund buildup for its intended purpose—the payment of benefits to the baby boom generation. It would be more effective than proposals to exclude social security from the G-R-H deficit calculation. Those proposals would create a temptation to raid social security by increasing benefits, decreasing receipts, or using the surplus for other purposes. Raiding social security would not increase the G-R-H deficit, so G-R-H would not be a constraint and the future capacity to meet social security obligations would be eroded. Further advantages of this proposal are explained in Part VII-A, "Reforming the Budget Process."

This proposal would use the current surpluses of the social security trust funds for Federal debt reduction, raising capital formation, as discussed in Part III-A. Estimates based on economic growth accounting suggest that the capital stock could be increased by 20 percent and real GNP could be 5 to 10 percent higher by 2030. To the extent GNP and incomes are higher, the burden on future workers is lower.

MEDICARE

Medicare consists of two trust funds—the hospital insurance trust fund (HI) and the supplementary medical insurance trust fund (SMI)—that pay for the acute care costs of the aged and disabled. In 1990, about 30 million aged and 3.3 million disabled will be covered.

Hospital Insurance

HI is estimated to spend $63 billion in 1991 for the hospital and related care of most individuals age 65 or older and of the permanently disabled. HI spending grew 11 percent annually in the 1980s and is projected to grow from 8 to 10 percent annually in the 1990s. It is financed primarily through social security payroll tax contributions paid by employers, employees, and the self-employed. HI has had a surplus for many years, and in 1991 its income is estimated to exceed outlays by $26 billion.

The balance in the HI trust fund is estimated to be $127 billion at the end of 1991 and to increase to $239 billion by 1995. These balances are much more than the minimum recommended by the HI trustees, which is 50 percent of estimated annual outlays. However, the most recent long-range published projections by the HI actuaries indicate that the present annual surpluses of the trust fund are temporary. Under intermediate assumptions, HI outlays are projected to exceed income by the late 1990s, and the trust fund will be depleted shortly after the turn of the century. Subsequently, as the postwar baby boom generation begins to retire, the deficit will grow even larger. By around 2050 the financing scheduled under current law will cover less than half the projected cost.

These projections demonstrate that the HI program is paying benefits that cannot be sustained over time at existing tax rates. The payment of benefits at such high levels is made possible only by the temporary presence of the baby boom generation in the taxpaying work force. Part V, Reforming Mandatory Programs, discusses several proposed reforms that would reduce the growth of spending.

Supplementary Medical Insurance

SMI is estimated to spend $47 billion in 1991 for physician services and other medical expenses of the aged and disabled. Unlike the HI program, SMI financing is established annually. Actuarial soundness depends only on whether assets are sufficient to cover liabilities

expected to be incurred by the end of the year. However, program costs are growing rapidly, and the Federal share is high.

The annual growth rate in spending was 16 percent in the 1980s, and it is expected to remain high. Spending has doubled from 0.4 percent of GNP in 1980 to an estimated 0.8 percent in 1990. Even if current growth rates moderate somewhat, SMI spending is projected to grow to 3.9 percent of GNP by the middle of the next century.

Congress initially established that the financing would be divided evenly between premiums paid by the beneficiaries and payments from general revenue. However, the general revenue subsidy increased from 50 percent of program cost in 1973 to about 75 percent in 1983, at which time Congress set a floor on the premiums equal to 25 percent of cost. The increase in the general revenue share to 75 percent cost $10 billion in 1989. Unless Congress extends the floor or makes it permanent, as proposed in this budget, the general revenue share of SMI spending will grow to about 88 percent by the year 2000.

FEDERAL EMPLOYEE RETIREMENT AND RELATED PROGRAMS

The Federal Government is much the largest employer in the country. It operates several systems of retirement, disability, and medical care for its former employees. The largest are the civil service and military retirement and disability funds; next largest are the payment of health benefits for annuitants and the Defense Department medical care program for retired military personnel and their dependents.

The major Federal retirement and medical care programs are more mature than social security and medicare. The ratios of beneficiaries to workers are already near their expected peaks, so these programs are not facing the upsurge of demographic pressure that will increase social security and medicare outlays relative to the economy 20 years from now. Even so, they represent major claims on future resources. This budget proposes reforms to reduce the growth rate of Federal civilian and military pensions, both in 1991 and later, which are described in Part V.

Civil Service Retirement and Disability

The Civil Service Retirement and Disability Fund covers about 90 percent of all Federal civilian employees, including civilian employees of the Department of Defense. Total outlays in 1991 are estimated to be $32 billion.

The fund operates two distinct civilian pension systems. The old Civil Service Retirement System (CSRS) includes civilian employees who were hired before 1984 and chose not to transfer to the new Federal Employees Retirement System (FERS). The new system covers employees hired since 1984, plus any previous hires who chose to transfer. The old system will gradually phase out of existence, but the phase-out may take a century to complete. The income, outlays, and assets of both systems are commingled, so that the one retirement fund constitutes a single pool of financial resources for the two systems.

Employees covered by the old system do not pay social security taxes or earn social security credits. Their pension is designed to provide the equivalent of social security plus an employee pension. In contrast, employees under the new system are covered by both social security and the new pension system. Their civil service pensions will be significantly lower, because the pensions will only supplement their social security benefits and because they can receive partial employer matching of tax deferred contributions to a thrift savings plan.

The fund as a whole is relatively mature, i.e., benefit payments are stable compared to the payroll base. The most recent actuarial report projects a ratio of benefit outlays to covered payroll equal to 36.1 percent in 1990. Assuming constant employment, it is 36.9 percent in 2010, 34.7 percent in 2020, and gradually declines in subsequent decades as retirees under the old system are displaced by retirees under the new system.

The old CSRS requires that the agency and the employee each pay an amount equal to 7 percent of the employee's salary toward the accruing cost of future retirement benefits; currently these contributions finance less than two-thirds of the total cost. The new FERS charges the full accrual cost, not just part, and the agency contribution is reflected in agency budgets.

Military Retirement and Disability

Military service pensions were financed before 1985 from annual general fund appropriations. Starting in 1985, the Military Retirement and Disability Trust Fund was created and took over responsibility for the pensions and disability payments of career military retirees, their survivors, and their dependents. Estimated outlays in 1991 are $22 billion.

The fund has three major sources of income: (1) The Board of Actuaries of the fund determines what percentage of basic pay is necessary to fund fully all future benefits incurred in the current period. This percentage is charged to the payroll of the Defense Department (or other employing agency) and paid to the fund. (2) The general fund makes an annual payment to the fund of an amount adequate to gradually pay off the unfunded liabilities for pension rights earned before the fund was created. (3) All balances in excess of current cash requirements are invested in Treasury securities, which earn interest.

This income greatly exceeds current disbursements. In 1989, the surplus was $14 billion. By charging the employing agency for the current accruals rather than the cash pension benefits, the fund improved internal cost accounting and trade-offs between military personnel and other types of expenditure; it also created incentives that induced the Congress to reform military pensions.

The military pension system, like the civil service pension system, is relatively mature. The most recent actuarial report projects that the accrual cost of military pensions in 1990 will equal 43.9 percent of basic pay for active duty personnel and 13.4 percent for reserve personnel. This percentage will gradually decrease as more and more military personnel are subject to the reformed system enacted in 1986.

Other Pension Plans

Well over 90 percent of all Federal civil and military career personnel are members of one of the major pension plans discussed above. In addition, the Government operates a number of other pension plans for specialized groups, such as the foreign service, Federal judges, and Coast Guard military personnel.

The budget proposes that the Public Health Service Commissioned Officers Retirement Fund be converted to an accrual-based system. This funds retirement benefits to officers, their dependents, and survivors; it also funds medical benefits to dependents, identical to those provided to other uniformed services. The proposed change will increase budget authority for Commissioned Corps retirement, but will not affect outlays or benefits.

Medical Care for Retirees

Most Federal civilian retirees, as well as employees, purchase medical care insurance through the civil service employees health benefits program. The Government and the insured individual both pay a share of the premiums. The Office of Personnel Management pays the Government share for retirees, except that the Postal Service makes separate payments for its retirees. Agencies are not charged the accruing liability before the employees retire. Estimated outlays for annuitants in 1991 are $3.1 billion.

The medical system for military personnel also cares for retired military and their dependents. Virtually all Federal military and civilian personnel are now required to pay medicare (hospital insurance) premiums, and Federal employees and retirees are covered in the same way as all other participants.

VI.B. RECOGNIZING FEDERAL UNDERWRITING RISKS

The Federal Government is the Nation's largest source of credit and underwriter of risk. The credit and insurance commitments made in the past have produced claims on today's budget, and the loans and insurance in this year's budget are potential claims on future budgets.

Too little attention was paid in the past to the scope and scale of these commitments, and often the Government's potential exposure was understated or ignored. Events of the past few years, including insolvency of the Federal Savings and Loan Insurance Corporation and many insured thrifts, the bailout of the Farm Credit System, and mounting losses in mortgage insurance programs, provide hard evidence of the magnitude of the threat. This budget reexamines and begins to restructure Federal credit and insurance programs.

Scale of Commitments

At the end of 1989, the face amount of federally assisted credit and insurance outstanding was $5.8 trillion. This is 2½ times the value of the Federal debt held by the public. In contrast to Federal debt, which is a direct liability of the Government, assisted credit (except for direct loans) and insurance are contingent liabilities; they generate Government expenditures only if the assisted parties default or become insolvent. The face value far exceeds the actual risk of loss, and does not even bear a constant relationship to it over time or from program to program.

Most loan guarantees will not default, and, to the extent that they do, the Government holds some collateral. Most insured banks and thrifts will not fail, and, to the extent that they do, the Government's loss will be limited by the assets that they own. Most other events insured against will not occur. Government-sponsored enterprise (GSE) bailouts may not be necessary and, if they do occur, the Government outlays will be much less than the GSE debt because of the GSEs' assets.

Unfortunately, however, defaults and insolvencies are happening with growing frequency. In 1989, loan defaults and write-offs were $14.4 billion, and insurance losses were $67.2 billion, of which 96 percent was spent to cover losses at over 400 insolvent banks and savings institutions. By way of comparison, only 7 years earlier in 1982, loan defaults and writeoffs were $3.7 billion, and insurance losses $4.6 billion.

FEDERAL CREDIT AND INSURANCE OUTSTANDING

(Dollar amounts in billions)

Program	1970	1975	1980	1985	1988	1989	Percent increase 1970–89
Direct Loans	51	74	164	257	222	207	306
Loan Guarantees	125	189	299	410	550	588	370
GSE Loans	24	49	151	370	666	763	3,096
Deposit Insurance	445	837	1,465	2,227	2,819	2,927	558
Other Insurance	216	187	831	1,021	1,259	1,286	495
Total	861	1,337	2,909	4,285	5,516	5,771	570

Outstanding federally assisted credit and insurance have grown faster in the past quarter century than the budget as a whole. This rapid growth—combined with rising losses—suggests the need to pay closer attention to the risks of these commitments.

The fastest growing category of Federal credit assistance has been provided by Government-sponsored enterprises. The GSEs are privately owned, but because they are federally established, they are perceived by financial markets to be quasi-governmental. The largest GSEs support housing credit; others channel capital to agriculture and education. Some GSEs are thinly capitalized, and these pose a bailout risk for the Government.

By far the Government's largest commitment is to Federal deposit insurance. After the GSEs it has been the most rapidly growing. The Government also insures $963 billion of private pensions against insolvency. A variety of smaller programs insure against crop loss, flood damage, and other hazards.

Federal loan guarantees have also grown rapidly. The largest amounts are for home mortgages insured by the Federal Housing Administration or guaranteed by the Department of Veterans Affairs. Increasing amounts of student loans are guaranteed by the Department of Education, and smaller guarantee programs are scattered throughout the Government. Direct loans outstanding have declined in recent years as credit programs have shifted toward using loan guarantees.

Assessing the Risks

The General Accounting Office expressed concern about the potential costs posed by these contingent liabilities in a recent report, *Federal Credit and Insurance: Programs May Require Increased Federal Assistance in the Future.* Without making specific recommendations, the report discussed the need for strong financial management systems and observed that fees and premiums often do not offset program costs.

But controlling the risks in Federal lending and insurance depends chiefly on credit policies—not just good management. The financial environment is changing rapidly. Unfavorable trends are apparent in several sectors assisted by Federal programs. The programs themselves encourage private risk-taking. Policies must cope with these issues.

Until recently, financial services were provided by insulated sub-industries (commercial banks, thrift institutions, securities firms), partly protected from competition by Federal and State regulation. Only the largest, most creditworthy customers dealt with capital markets. Other borrowers dealt with financial intermediaries, which had a relative advantage in assessing credit risk and handling workouts. These barriers buffered banks and thrifts from change and helped to maintain profits.

Federal credit programs and Government-sponsored enterprises originally were created partly to overcome credit barriers and expand some groups' access to credit and partly to subsidize that credit. They were designed to tap national capital markets and funnel additional, cheaper funds primarily into housing, agriculture, and education.

Rapid Change.—But the financial service industries are rapidly restructuring. New information technologies and financial innovation shifted relative advantages and led inevitably to deregulation. Previously distinct product lines were blurred, and many geographic barriers were eliminated. Sharp swings in inflation, interest rates, and exchange rates accelerated the changes. Many depository institutions failed to adapt, affecting the deposit insurance funds for years to come.

The GSEs and credit programs accelerated this transformation of financial services, especially during the past decade. This is clearest in housing, where the GSEs were innovators. They developed multi-class mortgage-backed securities to tap global capital markets. Broadening the range of mortgage investors reduced the cost of mortgage credit to the borrower. But lower mortgage rates also squeezed the profit margins of traditional mortgage lenders, adding to the difficulties already faced by savings and loans.

Unfavorable Trends.—Moreover, the cost of fulfilling Federal housing and agriculture credit commitments is likely to increase in the near term. In the case of housing, fewer people will be entering their home buying years in the next two decades. Reduced demand may

slow the increase in housing prices. Mortgage default rates tend to increase when appreciation slows, increasing Federal mortgage insurance losses. In agriculture, where nearly one-third of farm income is derived from Government programs, further consolidation of farms is likely. This, in turn, could increase losses on Federal farm loans.

Moral Hazard.—Finally, a major issue is raised by the incentive that Government insurance provides for additional risk-taking. For example, deposit insurance allowed insolvent thrifts to keep their deposit base and even increase it. Many thrifts used the opportunity to follow a rapid growth, high-risk strategy, which greatly added to the cost of resolving the thrift crisis. Such "moral hazard" increases the long-term cost of these programs and reduces their net benefit to society.

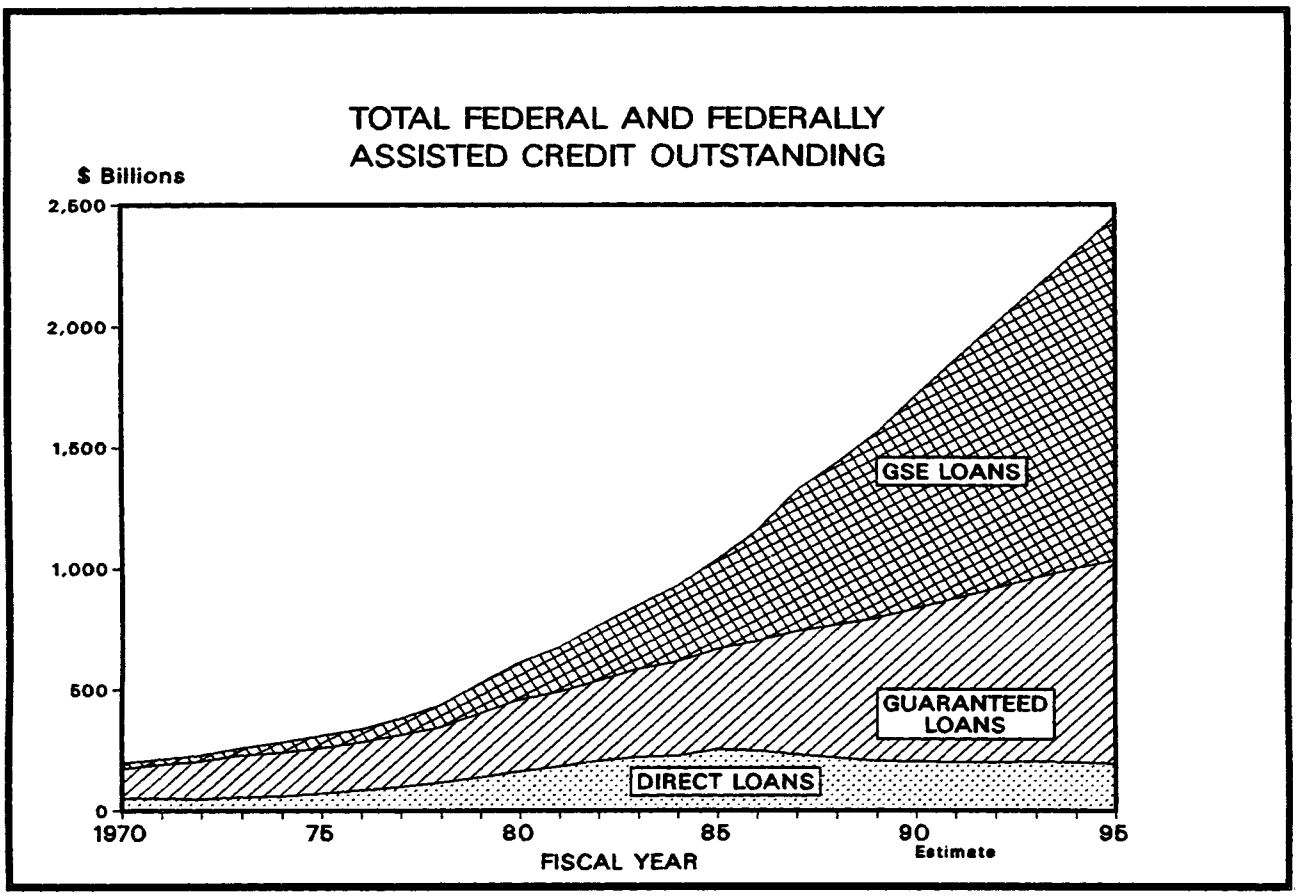
FEDERAL CREDIT AND GOVERNMENT-SPONSORED ENTERPRISES

The Federal Government's credit subsidies shift credit and other resources toward certain favored economic sectors—especially housing, agriculture, and education. Federal credit subsidies are both direct and indirect. Direct subsidies include below-market interest rates and easier terms on direct loans and guarantees of private loans than the private market would offer. Indirect subsidies include Federal backing for Government-sponsored enterprises, which lowers their cost of funds. By pricing credit below private alternatives, the Government subsidizes borrowers and risks absorbing some of the eventual losses. It also expands the scope of credit beyond what the private market would provide.

The Government has assisted and assumed some risk on an enormous volume of credit. By the end of 1989:

- In housing, $1,097 billion or 41 percent of outstanding home mortgages have been guaranteed by Federal agencies or securitized by GSEs. Another $1,247 billion or 47 percent (not including securitized loans) is held by banks and thrifts with deposit insurance; thrifts also receive massive advances from the Federal Home Loan Banks, a GSE. Of all housing mortgages, 88 percent have explicit or implicit Federal support.
- In agriculture, the Farmers Home Administration accounted for $20 billion or 15 percent of all farm debt outstanding. The Farm Credit System financed another $35 billion or 26 percent, and commercial banks financed 32 percent, backed by deposit insurance and soon by Farmer Mac, a GSE that will begin to guarantee securities in 1990. In total, 73 percent of all farm debt had Federal support.
- In education, nearly all student loans are federally guaranteed. Furthermore, Sallie Mae, a GSE, financed $22 billion, or 43 percent, of the guaranteed student loans outstanding.
- Business was also assisted by $72 billion of Government credit. The Federal role is focused on financing exports, rural utilities, and small and minority businesses.

In 1989, the Federal Government participated in $129 billion or 17.8 percent of all funds loaned. Federal subsidies, taking into account expected future defaults, are estimated to be $1.8 billion for direct loan obligations in 1991 and $9.5 billion for the much larger guaranteed loan commitments.



SUMMARY OF FEDERAL DIRECT LOANS AND GUARANTEED LOANS

(In billions of dollars)

	Actual		Estimated					
	1988	1989	1990	1991	1992	1993	1994	1995
Direct Loans:								
Obligations	27.2	16.2	18.4	13.4	13.0	12.4	12.1	11.7
Loan disbursements	33.7	26.0	26.7	22.1	19.6	17.5	16.9	16.2
Change in outstandings	−13.4	−14.6	−2.3	−2.3	−0.3	2.5	−3.5	−4.3
Outstandings	221.8	207.2	204.9	202.6	202.3	204.8	210.3	197.0
Guaranteed Loans:								
Commitments	100.7	105.4	118.6	129.8	122.2	122.7	124.2	125.7
New guaranteed loans	96.4	96.3	99.8	104.6	105.4	107.0	109.6	112.3
Change in outstandings	40.3	41.7	43.1	42.6	43.0	38.6	41.3	41.4
Outstandings	546.0	587.7	630.8	673.4	716.4	755.0	796.3	837.7

Federal backing of credit allows loans to be made with less regard to risk. GSEs have much less capital than purely private institutions would need. Originators and servicers for Federal mortgage insurance programs may operate with very limited capital; loans that they make with partial Federal guarantees can become fully guaranteed de facto if they fail. On the other side, borrowers obtain Federal credit with much less equity of their own at stake than would be required to get a private loan. These features increase the risk of default. Defaults imperil not only taxpayers, but also others. Waves of foreclosures in housing and agriculture in the early and mid-1980s harmed many related businesses and other nondefaulted borrowers.

Structural reforms and better incentives for evaluating credit risk can preserve the benefits of Federal credit programs while avoiding excessive Federal risk. The budget contains a number of reforms for specific programs. In some cases, borrowers will be required to invest more equity in order to give them greater incentive not to default in the face of adverse economic conditions. In others, the degree of Federal guarantee is limited, shifting some risk to the credit originators or primary insurers so that they will underwrite loans more carefully. In still other cases, the budget replaces direct lending by private loans with partial guarantees. Finally, in some cases, Federal credit fees are increased to reflect more fully the riskiness of loans and to eliminate unintended subsidies. The buyer's equity, the lender's stake, and GSE capital all protect the taxpayer from large losses and bailouts. Having private money at risk changes the incentives, encouraging participants to avoid excessive risk and default.

HOUSING

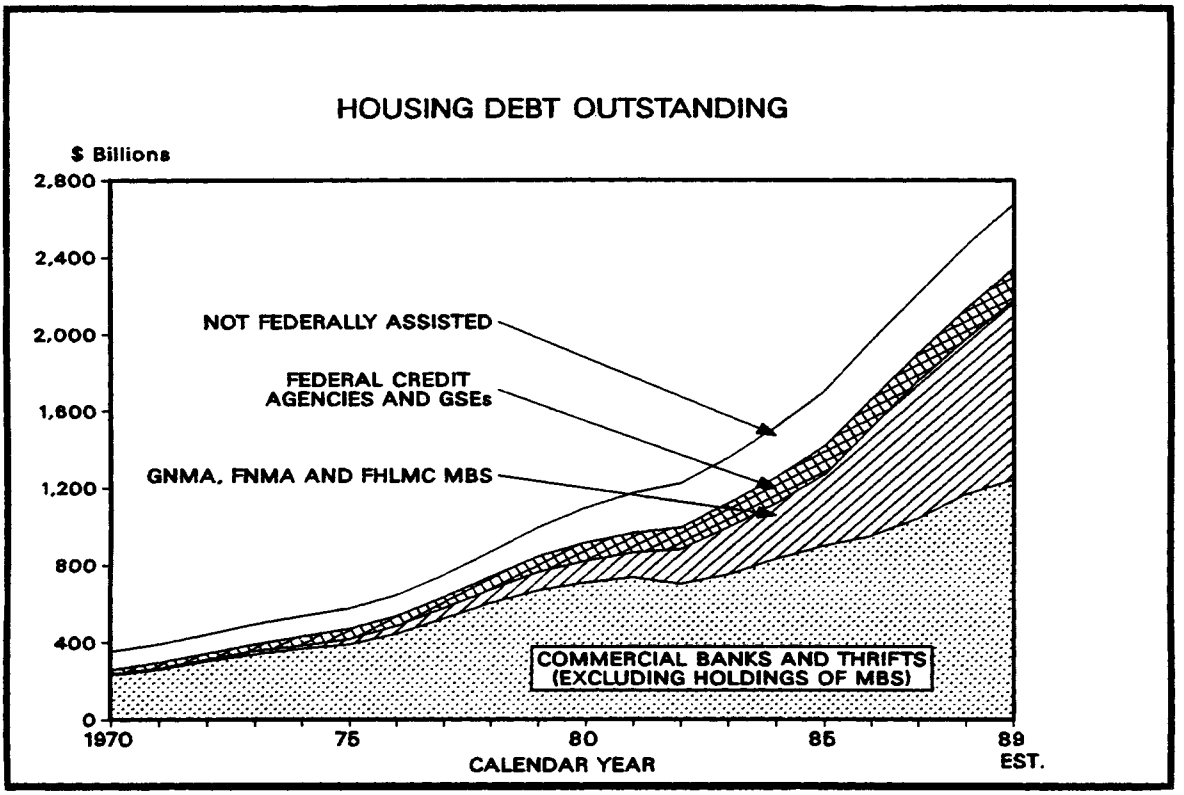
The Federal Government supports two systems of housing finance. One is based on the mortgage insurance programs of the Federal Housing Administration (FHA) and Department of Veterans Affairs (VA). A secondary market for these and other mortgages has developed under Government sponsorship. Private firms package FHA and VA mortgages as securities guaranteed by the Government National Mortgage Association (Ginnie Mae), which is part of the Department of Housing and Urban Development (HUD). Two GSEs—the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac)—provide a similar secondary market for conventional and some FHA and VA mortgages.

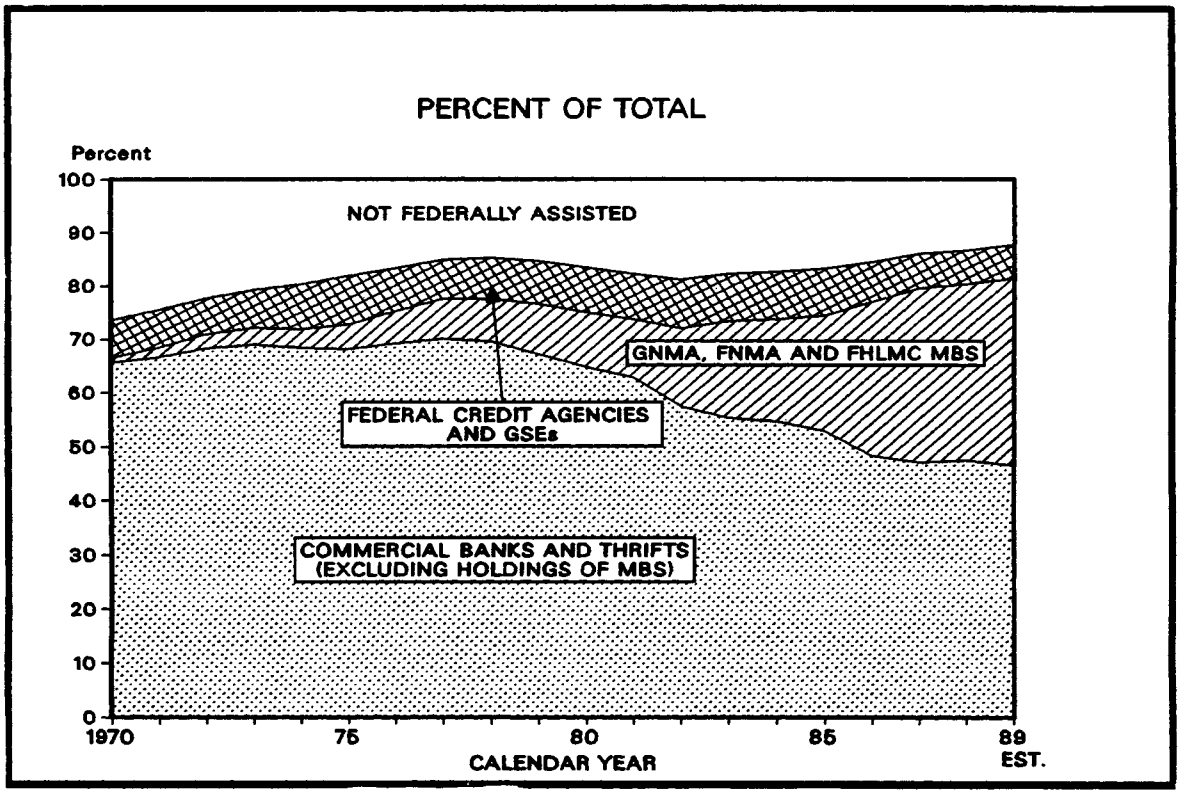
The second system of Government support is provided through Federal insurance of deposits in banks and particularly in thrift institutions, which specialize in mortgage lending. The Federal Home Loan Bank system, another GSE, provides additional support by making loans to member thrift institutions.

The Government also provides direct loans for rural housing through the Farmers Home Administration (FmHA) and for housing for the elderly and handicapped through a program operated by HUD.

Combining all forms of Federal support, the Government's role is pervasive. The proportion of all housing credit with explicit or implicit Federal backing increased from 74 percent in 1970 to 88 percent in 1989, primarily due to expansion by Freddie Mac and Fannie Mae.

HOUSING CREDIT





Growth and Transformation of Housing Finance

Federal sponsorship helped to expand and restructure housing credit markets so that they became fully integrated with broader credit markets. Fannie Mae and Freddie Mac securitized a large and growing share of mortgages for national and international capital markets. Periodic shortages of mortgage financing, which were once frequent because of regulatory ceilings on deposit interest rates, no longer occur now that these regulations have been repealed. Access to credit is rarely a problem for creditworthy buyers who can meet minimum downpayment requirements, and mortgage rates are no longer much higher than capital market rates.

From the taxpayer's point of view, these are troubled times for housing finance. The thrift industry's deposit insurance fund went bankrupt and was bailed out by the Federal Government. Now the Federal Housing Administration (FHA) has begun losing money for the first time in its 50-year history. GAO recently reported that FHA's three component funds lost $4.2 billion in 1988. Losses appear to have continued in 1989. Unless structural reforms are implemented, the largest FHA fund may soon be bankrupt.

In the 1980s, VA default losses also increased. VA eventually tried to control its costs by acquiring fewer foreclosed properties. This exposed its servicers to losses, and when they, in turn, defaulted, exposed Ginnie Mae to losses on VA mortgages in pools that it had guaranteed. Two years ago, Ginnie Mae had virtually no loan portfolio or property inventory. Today, it manages a $12 billion portfolio. FmHA has avoided taking large default losses but only by restructuring loans and offering deep interest subsidies.

The budget threat posed by mortgage credit programs and secondary market enterprises comes primarily from default losses. FHA and VA recently have experienced between 12 and 15 defaults each year per 1,000 mortgages outstanding. In 1989, Fannie Mae averaged 11 defaults per 1,000 mortgages in its portfolio, and 3 defaults per 1,000 on its mortgage-backed securities. Freddie Mac averaged just 2 defaults per 1,000 mortgages that it securitized. In recent years, FHA losses on defaulted loans have averaged about 40 percent of the original amount of the mortgages; VA losses have averaged about 35 percent. Default losses have been high for several reasons.

Higher Loan-to-Value Ratios.—The downpayment required for an FHA or VA loan is smaller than for a non-Government mortgage. VA, in fact, requires no downpayment. In recent years, FHA and VA buyers have been permitted to finance their mortgage insurance premium payments as part of the loan, which further reduces the buyer's cash investment as a proportion of the loan. This is critical, because the less money people have invested in a home, the more likely they are to default later. When personal financial problems arise or home values fall in a local market, FHA and VA buyers have a much weaker financial incentive than other buyers to hold onto their homes. This is one reason why default rates on Government mortgages are several times those on other mortgages.

Reduced Appreciation of Homes.—For most of the last 40 years, steadily rising home prices largely offset the default risk implicit in low downpayment requirements. New homebuyers quickly saw the value of their houses rise and with it their stake in the property. In the 1980s, however, nationwide housing prices rose, on average, at a slower rate than other prices. In some regions, prices actually fell. This reduced the incentive of buyers to hold onto their homes.

Providing Full Guarantees.—Government credit guarantees shield lenders from the costs of default. FHA covers losses up to the full amount of the loan. VA will pay up to 40 percent of the loan amount, with a maximum of $36,000 on loans up to $144,000. For loans that exceed $144,000, VA will pay 25 percent of the loan amount up to $46,000. Such protection is far greater than that provided by private mortgage insurers. This reduces a lender's incentive to underwrite carefully.

Even where programs offer only partial guarantees, inadequately capitalized lenders and servicers can turn these into full guarantees *de facto*. FHA's multi-family coinsurance program covers 85 percent of the default loss, leaving 15 percent for the lender. The lenders often securitize these loans and obtain a

Ginnie Mae guarantee for the full face amount of the new security. Many lenders are thinly capitalized and thus vulnerable to default. If a lender defaults, all losses are fully absorbed by the Government. Thus, an 85 percent Government co-insured mortgage is converted to a 100 percent guarantee.

Expansion of Federal Commitments.—The Federal Government has been enlarging its role in housing credit in locations where others have cut back. Private insurers and secondary market guarantors, such as Fannie Mae and Freddie Mac, tended to pull back from depressed regional markets such as Texas in the mid-1980s. As it became more difficult to obtain private mortgage insurance, business in high-risk areas shifted to FHA, VA, and FmHA.

Fannie Mae and Freddie Mac

Fannie Mae and Freddie Mac expanded rapidly during the 1980s. However, any budget threat that they pose is remote. They are partly protected from the risk of defaults by private mortgage insurance, FHA and VA guarantees, and other sources. The law also limits their purchase of higher loan-to-value ratio loans. When defaults occur, their losses average no more than 20 percent of the mortgage amount. Still, it is important to note that the Government does have some potential long-run risk.

Both Fannie and Freddie are highly leveraged. At the end of 1988, each held capital equal to less than 1.5 percent of assets including mortgage-backed securities. Their ties to the Government provide an implicit Federal guarantee which allows them to operate with less capital than a fully private corporation would need. With such a small margin, the taxpayers are more at risk.

Although the Government is not legally liable for Fannie and Freddie, it is widely believed that Government assistance would be provided if either were unable to support its debt. Failure to do that could disrupt mortgage markets and trigger the failure of mortgage lenders. Both the Federal deposit insurance funds and Ginnie Mae would be threatened.

Potential Future Costs

Slower household formation over the next two decades may reduce housing appreciation and may increase the number of mortgage defaults. This, in turn, could increase the cost of the Government's mortgage credit programs.

Given the initial ratio of loan amounts to the market value of the underlying collateral, future default losses can be projected based on projections of future economic conditions, especially housing appreciation and mortgage interest rates. Such projections show that, under current policies, the FHA and VA programs could generate large budget outlays over the next 20 years even with moderate inflation, no recession, and lower, stable interest rates.

- FHA as now operated could lose tens of billions of dollars over the next two decades. More than half of this loss would be the result of commitments outstanding at the end of 1990.
- VA and the Farmers Home Administration could each sustain additional losses totalling several billion dollars.
- Under the same economic conditions, Freddie Mac and Fannie Mae would operate profitably.

A protracted, but plausible, slump in the housing market would deepen losses. Cumulative FHA losses over a decade could be $10 billion higher compared with the more optimistic scenario.

In a severe housing slump, it is unlikely that Fannie and Freddie would maintain their current policies; they could act to contain losses. FHA and VA, on the other hand, would be under pressure to provide additional credit in markets where other sources contracted. Thus, additional risk would be shifted to the public programs, including Ginnie Mae as guarantor of securities backed by FHA and VA. This could result in larger losses in those programs. Banks and thrifts also might pick up some portion of this risk, exposing the deposit insurance funds to additional losses.

Reducing Potential Losses

Federal housing credit programs worked well in the environment of rising house prices

and low interest rates that characterized much of the post-World War II period. Since 1980, market conditions have not been as favorable to guarantors of mortgage credit. This trend will probably continue. The programs can serve the same public purpose, but only if they are designed and operated to protect the Government from potentially great losses. The options available to reduce excessive Federal risk include:

Limiting the Guarantee.—The Government could limit its losses by reducing the guarantee to less than 100 percent of the loan, provided safeguards ensure that the Government will not assume the whole risk again if a private co-guarantor fails. By so doing, the Government directly caps its costs. Even more importantly, a partial guarantee exposes mortgage lenders to default losses, which makes them more careful in their underwriting.

Increasing Equity.—For borrowers, increasing the downpayment would significantly reduce the likelihood of default by requiring that home owners have enough at stake to make default costly. For institutions, higher capital reduces the risk of insolvency in times of economic stress, thereby protecting the Government from potential bailouts.

Increasing Premiums.—Another way Government can limit its costs is by increasing premiums or fees to the levels needed to cover expected default losses. Prior to the 1980s, FHA's premium was set at what then appeared to be an actuarially sound level. In retrospect, it is clear that the low claims rates of those years resulted mainly from very favorable housing market conditions. If FHA is to operate effectively in the future as an insurance program as opposed to an explicit subsidy program, the FHA premium would have to be set at an actuarially sound level.

The Administration's Proposals

The President will propose additional reforms to the FHA single-family mortgage insurance program to restore it to actuarial soundness, while maintaining its benefits for first-time homebuyers. These new reform proposals will complement those proposed by the Administration and enacted in 1989. The proposals will be developed folllowing an independent actuarial study of the program, to be completed by March 1990, and a careful review of the potential impacts of the kinds of reforms described above.

The budget proposes minor changes to improve the VA home loan mortgage program. To ensure that it can meet the housing needs of veterans well into the next decade, the budget proposes to strengthen the financial condition of the VA program by: (1) requiring veterans to make a small downpayment of 4 percent on the amount of the loan above $25,000; (2) charging a 1.75 percent loan fee, which may be financed, to all veterans except those with service-connected disabilities above 30 percent; and (3) increasing risk-sharing with lenders to reduce VA property acquisitions and encourage sound lending. The VA will sell loans made to finance the sale of foreclosed properties with partial recourse to the Government. The amount of the guarantee will be calculated so as to make claims unlikely. Under a law enacted last year, VA will also release from indebtedness veterans who have defaulted and lost their homes.

The budget proposes to increase the variety of housing assistance available to rural families through the FmHA. The proposal breaks a pattern of expensive direct loans by adding loan guarantees and housing vouchers to the program. With these new authorities, FmHA can better match Federal assistance to recipients' needs and regional housing markets.

Changing FmHA programs will improve the financial position of the rural housing programs and lessen the costs borne by the taxpayer by: using private lenders for credit screening, loan origination, and servicing of guaranteed loans; shifting a portion of rental assistance from subsidized credit for developers to housing vouchers that families can use to pay part of the rent for a unit they find in the private market; providing an average 5 percent interest rate reduction for one-half of all homeownership guarantees to help low- to moderate-income borrowers afford private credit; improving servicing of existing loans by adding staff in States with exceptional work backlogs; and charging a one percent fee to homebuyers for new loan guarantees, which will be used to offset future default losses.

The budget also proposes to increase the fee paid by issuers of Ginnie Mae's mortgage-backed securities. The proceeds would increase Ginnie Mae's reserves to offset future costs. The budget also proposes a fee on new debt and securities issued by Fannie Mae and Freddie Mac. The fees would reimburse the Government for the borrowing advantages these enterprises enjoy as a result of their special relationship with the Government and would reimburse the taxpayer for a portion of the risk that might inhere in this special relationship. Further reforms will depend on the results of the ongoing study of Ginnie Mae under a HUD contract and a Treasury Department study of GSEs mandated by Congress.

AGRICULTURE

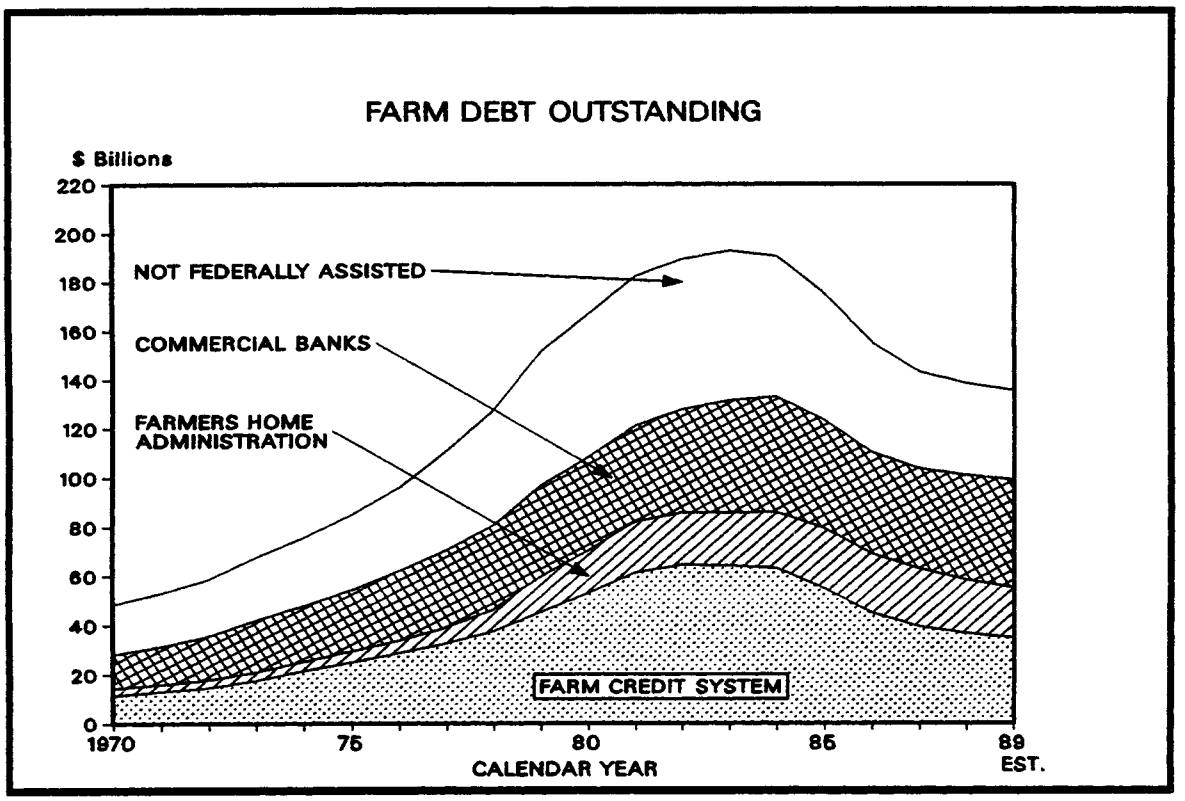
The experience of the 1980s, when farm income plummeted and once-manageable debt became burdensome, is a case study of how Federal credit subsidies can go wrong. When the agricultural boom of the 1970s ended in the bust of the 1980s, the Federal Government had to bail out the Farm Credit System, create two new GSEs to assist agricultural lending, write off billions in loans of the Farmers Home Administration, and cover the cost of closing insolvent commercial banks heavily involved in agricultural lending.

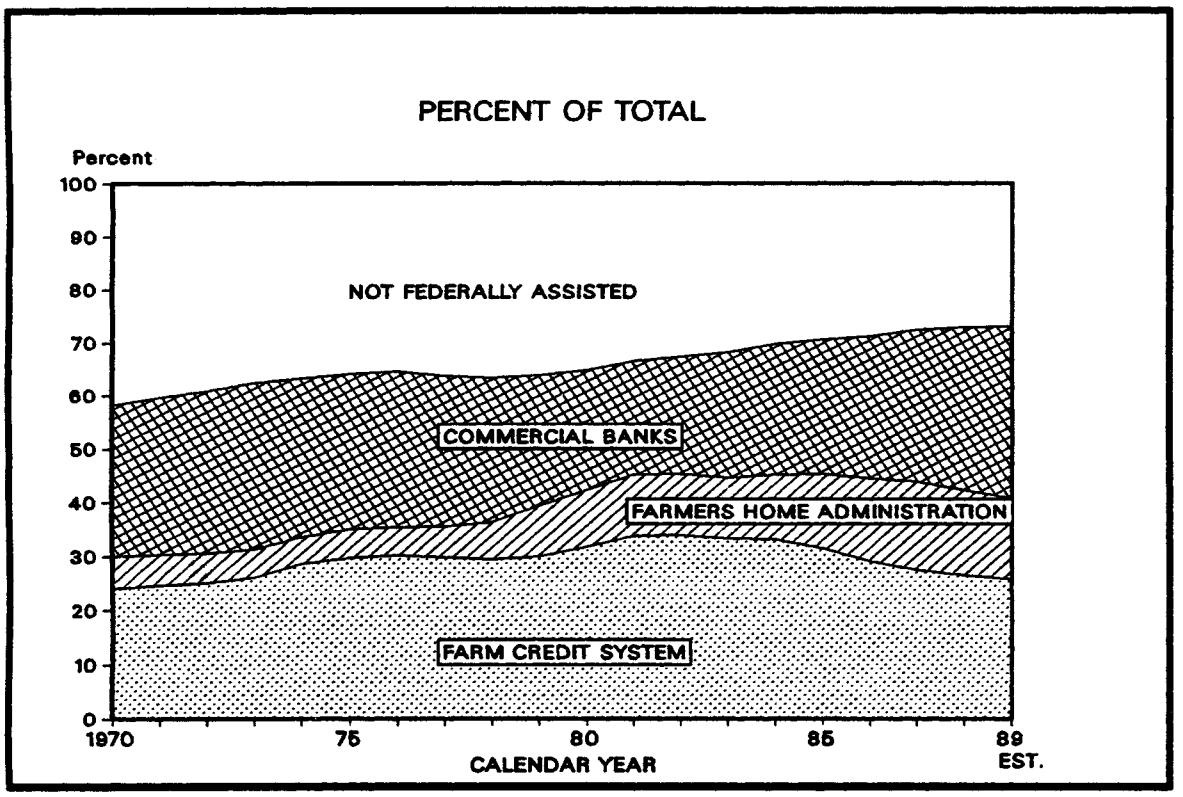
The Federal Government continues to play a dominant role in farm credit. Of the $136 billion in outstanding farm debt at the end of 1989, the insured commercial banks had loaned 32 percent of the total; the Farm Credit System, 26 percent; individuals and others, 20 percent; the Farmers Home Administration, 15 percent; and insurance companies, 7 percent. The Federal Government, therefore, is involved in nearly three-fourths of all farm loans.

Subsidized agricultural credit is provided through the Farmers Home Administration (FmHA) and three GSEs. FmHA is the "lender of last resort" to farmers. It makes subsidized direct loans and 90 percent guarantees of private bank loans to family-sized farmers. One GSE, the Farm Credit System (FCS), is a nationwide system of borrower-owned agricultural bank cooperatives that lends to agricultural producers and cooperatives that serve them. Its debt is widely perceived to be backed by the Federal Government. A second GSE, Farmer Mac, was created in 1987 to guarantee securities backed by pools of agriculture real estate loans. Farmer Mac has a $1.5 billion line of credit at the Treasury, and is also viewed as being implicitly guaranteed by the Federal Government. In addition, commercial banks with Federal deposit insurance hold substantial amounts of farm loans.

In the mid-1980s, farmers and their lenders faced the most serious financial crisis since the 1930s. Losses mounted at FmHA, the FCS, and among banks that lend heavily to farmers. Since then, farm income and land values have recovered, loan delinquency rates and charge-offs have fallen, and the balance sheets of farm lenders have improved. The FCS has returned to profitability. There has been a sharp drop in the number of agricultural bank failures and a reduction in FmHA losses. Outstanding farm debt has declined 30 percent since 1983, largely due to debt write-downs and write-offs from foreclosure, but also because most farmers now are more conservative about borrowing. The debt to equity ratio of the agricultural sector has declined from a high of 31 percent in 1985 to an estimated 22 percent at present.

FARM CREDIT





Farmers Home Administration (FmHA)

As lender of last resort, FmHA takes on risks the private market would avoid. Write-offs of $7 to $9 billion are expected in FmHA's farm direct loan portfolio over the next 3 years. In addition, guaranteed loan claims have averaged $100 million for the last 3 years. The FmHA agricultural credit revolving fund has an estimated negative net worth of $28 billion.

The 1985 farm act directed that $500 million per year be shifted from direct to guaranteed loan authority. FmHA's loan guarantees outstanding are currently estimated to be $5.2 billion. Under proposed budget policy, $2.8 billion in guarantees would be made annually.

FmHA direct and guaranteed loans typically equal the full value of the collateral backing them. Borrowers therefore have no equity in the asset being financed, which raises the risk of default. This risk is compounded by a statutory requirement that FmHA subordinate its lien position to facilitate extension of private loans to borrowers.

The budget proposes to continue the shift from direct to guaranteed loans in 1991, and to return FmHA to its traditional role as a temporary source of credit; farm operating direct loans will be extended for a maximum of 7 years. FmHA was not intended to indefinitely sustain farm operators who are not commercially viable.

To help smooth the transition to private financing, $400 million in FmHA guarantees will be accompanied by interest rate buydowns averaging three percent. Guarantee origination fees will not be increased in 1991. However, FmHA will no longer guarantee 90 percent of the face value of most loans. Instead, the program will employ a risk-adjusted scale. Higher-risk borrowers will get higher guarantee percentages to offset lender exposure; guarantees will vary between 70 and 90 percent.

Farm Credit System (FCS)

The FCS crisis of the 1980s shows how the Federal Government's implicit guarantee of a GSE can become explicit and require direct taxpayer assistance. Under the FCS's cooperative structure, bank shareholders and boards of directors are also its customers for loans, which encourages lax loan standards. During the agriculture downturn of the mid-1980s, many FCS banks gave priority to making low-cost loans to agriculture and helping borrowers at the expense of their own long-term profitability.

The Agricultural Credit Act of 1987 provided the infusion of capital and equity that certain FCS banks needed to remain operating. The FCS Financial Assistance Corporation (FAC) was established to buy preferred stock in financially troubled FCS banks. It can finance these purchases by issuing up to $4 billion of federally guaranteed bonds, with the Federal Government paying some or all of the interest on the bonds for the first 10 years after their issuance. FAC authority to issue debt ends in September 1992. Until then the solvency of the FCS is essentially guaranteed.

The 1987 Act also created the FCS Insurance Corporation, a Federal agency, which was intended to preclude future taxpayer bailouts of the FCS. Beginning in 1990, FCS institutions will pay annual premiums to the Insurance Corporation, based on the volume and risk of their outstanding loans. This will create a loss-reserve against default on FCS bonds.

The capital structure of the FCS was also bolstered by the 1987 Act. It requires FCS to build up a genuine capital surplus from earnings, with permanent capital standards based on portfolio risk, like commercial lenders. By 1993 the FCS institutions are required to have minimum permanent risk capital equal to seven percent of loan assets; without it, they cannot pay dividends or retire borrower stock.

The combination of federally guaranteed FAC debt, the new minimum capital requirements, and the FCS Insurance Corporation should ensure the FCS's continuing viability. However, the FCS remains a clear example of the potential costs of the implicit Federal backing of Government-sponsored enterprises. The FCS mandate to make only agriculture loans still leaves it vulnerable to the fortunes of the agriculture sector.

Federal Agricultural Mortgage Corporation (Farmer Mac)

Farmer Mac was created to provide a secondary market for long-term agricultural real

estate loans in order to increase credit availability and decrease the interest rate. Farmer Mac will guarantee timely payment of interest and principal on securities representing pools of farm real estate loans. Commercial banks have been reluctant to make long-term, fixed rate farm ownership loans due to the risk of varying interest rates and their experience with the collapse of farm real estate values in the 1980s. Farmer Mac will provide banks a ready market for these loans, thus reducing their exposure and capital requirements. The FCS may also pool its loans.

Like the FCS, Farmer Mac is a private corporation, and its obligations are not explicitly guaranteed by the Federal Government, but its operations create a Federal contingent liability. If the Corporation's reserves were ever exhausted, its Treasury line of credit could be tapped to honor claims on guarantees; and if this were insufficient, further Government support would be expected. The Government's risk is reduced by the requirements that the poolers retain at least a ten percent subordinated interest in loans sold and the liability for the first losses upon default. In addition, poolers will pay origination and annual fees to Farmer Mac, which will capitalize a reserve fund against guarantee claims.

Farmer Mac underwriting standards are one key to controlling Federal exposure. The law requires a maximum loan-to-value ratio of 75 percent for any loan pooled. This margin of borrower's initial equity will provide a strong incentive not to default. Given this ratio and the required risk participation by private poolers, Farmer Mac will incur no principal loss as long as the collateral value upon liquidation is 65 percent or more of original value.

The first Farmer Mac guaranteed securities are expected to be issued in the first quarter of calendar 1990. About $1 to $2 billion a year of commercial bank and FCS loans might be pooled into Farmer Mac securities. Farmer Mac securities will attract more national and international capital into U.S. agriculture. The more competitive environment will reduce income margins for all agricultural lenders, while the best borrowers will have many credit sources to choose from.

EDUCATION

The Federal Government helps students and their parents meet the costs of postsecondary education by creating an extensive private market for student loans. Guaranteed student loans (GSLs) now provide more student aid than all other Education Department aid put together.

The GSL program operates primarily by providing about 13,000 participating private lenders with a 100 percent guarantee against the risk of default. In contrast to most other areas of Federal credit activity, it is unlikely that any significant market for student loans would exist in the absence of the Federal guarantee, because of the lack of collateral for such loans.

The GSL program also differs from other Federal guaranteed loan programs in that it operates through an intermediary set of State and non-profit private entities termed guarantee agencies. Guarantee agencies insure lenders against default loss; the Government then reinsures the agencies. Guarantee agencies may charge borrowers a one-time insurance fee of up to 3 percent to cover their insurance costs. The agencies also operate as debt collectors, retaining a percentage of collections to defray their costs and returning the remainder to the Government. The Government provides general operating support to the agencies through an administrative cost allowance equal to one percent of insured loan volume.

The GSL program has grown rapidly, roughly doubling in annual loan volume since 1982 and quadrupling since 1979. Cumulative loan commitments since the beginning of the program exceeded $100 billion by the end of 1989; loans outstanding at the end of 1989 were $49 billion.

The gross cumulative default rate was 14 percent in 1989. Default rates have been fairly constant, so the increase in loan volume has led to a corresponding increase in the amount of defaults. Gross default costs, which were a few hundred million dollars in the early 1980s, soared to $1.9 billion in 1989 and are expected to top $2 billion in 1990 and beyond.

Default rates vary depending on the backgrounds of students and the kinds of schools they attend. A central goal of the student loan

program in the 1980s was to make loans available to lower-income students. At the same time, it is well documented that students from lower-income families default more frequently than the average student. In addition, a GAO study concluded that average default rates are much higher, regardless of the students' incomes, at vocational schools than at colleges and universities. High defaults at such schools suggest a number of possible problems with the preparation of students for school, school recruitment practices, and the quality of education. The Education Department is actively addressing these issues.

The dramatic increase in default losses has led to a variety of legislative and regulatory initiatives. Notable among these are: deducting the amount of delinquent debt from Federal income tax refunds; imposing due diligence default collection requirements on lenders and guarantee agencies; garnishing wages of Federal employees who are in default; referring defaulted loans to the Department of Justice for litigation; and requiring schools with high institutional default rates to reduce these rates, with the possibility of program termination if rates are not reduced.

An additional part of this effort is increased risk-sharing with guarantee agencies. Currently, these agencies are reinsured at 100, 90, or 80 percent depending on their default rates. However, the average reinsurance rate is 97 percent, so guarantee agencies bear only about 3 percent of default risk. The budget proposes to increase this to 10 percent, replacing the current 100/90/80 rate structure with a single 90 percent reinsurance rate. This should make the guarantee agencies more careful monitors of loan origination and servicing. The budget also proposes to replace the current experience-rated reinsurance fee with a single 0.5 percent fee.

Other budget proposals that would reduce Federal subsidies and taxpayer costs in the GSL program include: (1) delaying disbursement of all loans to first-time borrowers for 30 days from the student's first day of classes, in order to reduce the high rate of default by students who withdraw in the first few weeks of class; and (2) checking the credit histories of GSL applicants who are age 21 or older, requiring a co-signer for borrowers found to have negative credit records.

Student lending is supported by extensive secondary market activities, most notably by the Student Loan Marketing Association (Sallie Mae), a GSE. This federally established, stockholder-owned, for-profit corporation was chartered in 1972 and now plays a dominant role in GSL financing. At the end of 1989, Sallie Mae owned 43 percent of all outstanding GSLs, and its annual purchases plus collateralized advances to lenders represent about 50 percent of annual GSL lending.

The Federal Government bears most of the risk associated with GSL defaults directly rather than through Sallie Mae. Sallie Mae's transactions in GSL loans have little or no bearing on the likelihood of default, and its own debt is backed by its ownership of 100 percent guaranteed GSL loans. As long as Sallie Mae focuses on GSL financing and maintains a good match between the duration of its assets and liabilities, it poses little financial risk to the Government.

LOANS TO BUSINESS

In contrast with its dominant credit role in housing, agriculture, and education, the Federal Government has a relatively small role in providing credit for business. Federal credit is focused on export financing, rural utilities, and small and minority businesses; it amounts to only 0.2 percent of business liabilities. Bank loans outstanding (other than mortgages) supported by Federal deposit insurance are another 15.9 percent of business liabilities.

The Export-Import Bank provides direct loans, loan guarantees, and export credit insurance to foreign borrowers who purchase U.S. exports. The objective is to offset foreign official subsidized credit, so that U.S. exporters can compete strictly on the basis of the quality and price of the goods and services they offer. Interest rates on Eximbank's direct loans are the lowest permitted under the Arrangement on Export Credits of the Organization for Economic Cooperation and Development.

Total program activity declined from $12.6 billion in 1980 to $6.3 billion in 1989. Direct loans, which accounted for 36 percent in 1980,

only account for 12 percent now. Total Eximbank program activities assist 2 percent of U.S. merchandise exports and 4 percent of U.S. capital goods exports.

Eximbank has sustained large losses over the past decade, and these losses will continue through the next decade. In the late 1970s, a subsidy war among the developed countries' export credit agencies resulted in Eximbank lending at well below Treasury borrowing rates; this resulted in operating losses of $2.3 billion between 1981 and 1988. In addition, of the $9.9 billion in loans outstanding at the end of 1988, $2.7 billion was delinquent. Total outstanding rescheduled loans at the end of 1988 were $1.8 billion. Since 1985, GAO has called on the Bank to establish a loan loss reserve; it estimates that the Bank had a cumulative deficit of between $3.8 billion and $6.3 billion by the end of 1988. For the first time, the 1991 budget will display a loan loss reserve in ExImBank's financial statements: $4.8 billion against ExImBank's $12.2 billion of loans and potential claim recoveries.

The Rural Electrification Administration (REA) provides subsidized direct and guaranteed loans to electricity and telephone suppliers serving rural areas. Currently, about $39 billion in REA loans are outstanding. REA's original mission to bring service to rural areas is essentially complete: 99 percent of all rural households have electric service and 96 percent have phone service.

Almost all of REA borrowers can afford private credit. Many have excellent bond ratings, and many are subsidiaries of major utility companies. Because of the strong financial position of REA borrowers, defaults have been relatively few. However, in the last several years, REA has had to advance over $1 billion to lenders for guarantee claims on behalf of defaulting power supply borrowers. These defaults are not expected to decline in the near future.

By statute, REA borrowers must eventually meet their credit needs from their own resources or non-Federal lenders. To help achieve this goal, the budget proposes that most REA direct loan borrowers shift to private financing aided by partial REA guarantees. Power supply borrowers will be eligible for 90 percent guarantees; electric distribution and telephone borrowers will be eligible for 70 percent guarantees. A one percent guarantee fee will be charged to offset potential default costs and administration. Direct loans will still be available for those few borrowers unable to afford private credit.

The Small Business Administration provides direct loans, loan guarantees, and guaranteed surety bonds to small businesses, and disaster loans to businesses and homeowners. About $16 billion of SBA-backed credit is outstanding. Approximately one-half consists of direct loans or guaranteed loans assumed by SBA when the borrower defaulted and the primary lender claimed reimbursement.

SBA direct lending (including disaster assistance) has declined dramatically in the 1980s, from over $3 billion in 1980 to less than $230 million in 1989. SBA's guaranteed business loan approvals and guaranteed surety bonds have remained fairly stable at approximately $3 billion and $1 billion a year, respectively.

The average maturity of SBA guaranteed loans is 11 years at interest rates slightly above the prime rate. Absent these guarantees, many lenders are unwilling to make small business loans with terms beyond 3 years. As a result, SBA assists about one-third of all long-term credit for small business.

On average, SBA guarantees cover 81 percent of the credit extended. However, recent statutory changes will increase this coverage, reducing the incentive for lenders to be careful and thus adding to the future cost of the program. SBA loses about 12 cents for every dollar loaned. In 1991, the Administration proposes to convert most SBA direct business lending to guaranteed loans. Losses tend to be higher for direct loans than for loan guarantees. In addition, higher fees are proposed to help cover the cost of guarantee programs.

CREDIT REFORM

Federal credit programs have a dual nature. They are partly like commercial credit. Direct loans are expected to be repaid, with interest; loan guarantees require the borrower to pay a fee. However, they are unlike commercial credit in one fundamental respect. The Government lends and guarantees credit for social

reasons, not in order to make a profit or even to cover its costs. Direct loans are made at below-market interest rates; loan guarantees are made without charging a fee high enough to cover expected defaults. Federal credit programs generally provide borrowers more favorable terms than they would otherwise obtain in the private market.

This results in a financial loss to the Government and a subsidy to the borrower. A credit subsidy is a method for the Government to achieve its policy objectives, just like the purchase of goods and services, transfer payments, and grants of other Federal programs. The present budget treatment of credit obscures the subsidy. Direct loans result in outlays when they are disbursed and offsets to outlays when interest is received and principal repaid; loan guarantees result in offsets to outlays when fees are collected and outlays in the case of default. Recorded budget outlays are very different in both amount and timing from the value of the subsidy. Budget accounting therefore gives policymakers the wrong information about the true cost of credit programs and the wrong incentives for credit decisions.

The Administration proposes to remedy this by measuring credit activity on an expenditure basis equivalent to other Federal spending. The budget would separately show the credit subsidies, defined as the discounted or present value of the additional payments that the federally assisted borrower would have to make for a purely private loan. The subsidy would be included in the outlays of the program, the agency, and the function that conduct the credit program. The remaining cash flows would be reported only in a separate budget function created for this purpose alone. To the extent feasible, the credit subsidies would require annual appropriations. Agencies would continue to operate credit programs in the same way as they do now. This proposal for credit reform is the same as in the last two budgets; however, the budget accounts in this budget do not show the reform and will not do so until it is enacted.

The Congressional Budget Office and the General Accounting Office have both endorsed the basic concept of credit reform. (See *Credit Reform: Comparable Budget Costs for Cash and Credit,* Congressional Budget Office, December 1989.) Different approaches to credit reform are possible. The Administration would use private financial market equivalents in order to estimate the subsidy, both because they are comparatively objective and because the subsidy defined in this way is the best estimate of the effect of the credit program on resource allocation. The Administration's proposal would not affect the definition of the budget deficit, unlike variants that would exclude the non-subsidy cash flows. Such variants have conceptual merit but require strong safeguards to prevent a portion of the subsidy from also being excluded from the budget. Experience with credit reform as proposed by the Administration would help to establish such safeguards.

The accompanying tables show the estimated subsidies for most credit programs in 1991. Subsidies add up to $1.8 billion for direct loan obligations and $9.5 billion for guaranteed loan commitments. The degree of the subsidy differs widely from program to program, ranging from virtually nothing up to 36.9 percent of the face value for loan guarantees (with one small exception) and up to 72.7 percent for direct loans. On average, it is 4.5 percent for loan guarantees and 31.8 percent for direct loans. The wide variation adds emphasis to the need for the budget to measure the subsidy rather than the cash flow in accounting for program expenditure.

ESTIMATED SUBSIDY COSTS FOR 1991 DIRECT LOAN OBLIGATIONS

Agency and Program	Present Value of the Subsidy	
	Percent of direct loan obligations	Millions of dollars
Funds Appropriated to the President:		
Overseas Private Investment Corporation	12.6	2.9
Agriculture:		
Agricultural credit insurance fund	20.7	137.2
Rural development insurance fund	19.9	68.9
Rural development loan fund	51.3	15.4
Rural housing insurance fund	50.6	729.2
Public Law 480 export credits	72.7	540.0
Rural Electrification Administration:		
Electric and telephone revolving fund	29.9	60.3
Rural Telephone Bank	8.0	10.0
Education:		
College housing and academic facilities	33.1	1.7
Housing and Urban Development:		
Federal Housing Administration	3.1	4.7
Housing for the elderly and handicapped	20.0	56.5
Nonprofit sponsor assistance	22.0	0.1
Interior:		
Bureau of Reclamation	43.0	2.1
Bureau of Indian Affairs	20.0	2.1
State Department:		
Emergencies in the diplomatic service	38.3	0.3
Veterans Affairs:		
Loan guaranty revolving fund	11.0	80.6
Guaranty and indemnity fund	11.0	0.8
Specially adapted housing loans	11.0	[1] —
Education loan fund	9.1	*
Vocational rehabilitation	9.7	0.1
Small Business Administration:		
Business loans	42.6	2.1
Disaster loans	27.8	79.2
National Credit Union Administration:		
Central liquidity facility	3.0	7.5
Share insurance fund	50.0	7.5
Export-Import Bank	7.8	30.0
Tennessee Valley Authority:		
Power program	0.6	0.4
Total, direct loan subsidies	31.8[2]	1,839.5

[1] Proposal to merge obligations with loan guaranty revolving fund.
[2] Weighted average.

ESTIMATED SUBSIDY COSTS FOR 1991 GUARANTEED LOAN COMMITMENTS

Agency and Program	Present Value of the Subsidy	
	Percent of direct loan obligations	Millions of dollars
Funds Appropriated to the President:		
AID private sector loans	0.7	0.9
AID housing and other credit	30.7	30.7
Overseas Private Investment Corporation	12.2	22.6
Agriculture:		
Agricultural credit insurance fund	3.8	104.5
Commodity Credit Corporation: Export credits	14.0	749.0
Rural development insurance fund	4.8	7.7
Rural housing insurance fund	25.7	152.4
Rural Electrification Administration	11.7	128.6
Rural Telephone Bank	5.6	11.2
Education:		
Guaranteed student loans, Stafford	36.9	3,735.3
Guaranteed student loans, PLUS/SLS	7.2	189.0
Health and Human Services:		
Health professions graduate student	21.0	38.9
Housing and Urban Development:		
Federal Housing Administration	1.2	900.0
GNMA secondary mortgage guarantees	1.9	1,520.0
Interior:		
Indian loan guaranty and insurance fund	21.0	9.4
Veterans Affairs:		
Loan guaranty revolving fund	6.6	34.7
Guaranty and indemnity fund	8.3	1,257.7
Small Business Administration:		
Business loans	10.2	450.2
Export-Import Bank	1.4	151.3
National Credit Union Administration:		
Share insurance fund	100.0	0.5
Total, guaranteed loan subsidies	[1] 4.5	9,494.5

[1] Weighted average.

INSURANCE

The Federal Government insures individuals and firms against certain hazards not covered by private insurance. Government insurance programs have been developed in part because some risks are both hard to predict and catastrophic in size. It is difficult or impossible for private firms to develop actuarially sound premium structures and reserves that would permit them to insure such risks. The Federal Government is uniquely suited for this insurance role by its size, sovereign powers, and ultimate responsibility for the general welfare.

The largest Federal insurance commitment, by far, is the protection of deposits against losses resulting from the failure of banks and

other depository institutions. The next largest program insures payment of private pension benefits when their sponsoring firms fail. The scale and range of Federal insurance commitments are summarized below. The table shows the face value of the insurance, which is far larger than any reasonable estimate of the probable loss to the Government. The probable loss as a percentage of face value is likely to differ widely from program to program.

Apart from these formal insurance programs, the Federal Government frequently provides ad hoc disaster or bailout assistance.

Recent Losses

The largest Federal insurance programs all have experienced substantial losses in recent years. The Federal Savings and Loan Insurance Corporation had net outlays of $23.5 billion during the past 5 years, and its liabilities exceeded its assets by about $80 billion when it was replaced with a new insurance structure in August 1989. The Federal Deposit Insurance Corporation's reserves declined in 1988, for the first time in its history, and again in 1989. By the end of 1988, the Pension Benefit Guarantee Corporation had assumed responsibility for plans with assets that were about $1.5 billion less than the present value of liabilities for future benefits and expenses. The Federal Crop Insurance Corporation paid about $2 billion more in claims than it collected in premiums from 1981 through 1988.

Some of these costs were unavoidable given the nature of the hazards, but other costs reflect remediable flaws in the way the programs were designed and managed. In many cases, premiums charged to an insured group have borne little relationship to probable future losses.

Outstanding Issues

Given the huge scale of the Government's insurance commitments and the potential budget threat they pose, the Federal Government's role as an insurer must be under continual review. Outstanding issues that have received only limited consideration include the proper scope of Federal insurance programs, how the costs of these programs should be shared, and how best to manage and control the Government's potential liability for losses.

What to Insure.—A fundamental issue is what risks the Government should insure. The Government insures against certain hazards, but has no program for other, superficially similar, hazards. For example, Federal flood insurance protects against some of the losses from storms such as Hurricane Hugo, but there is no Federal insurance against losses from other disasters, such as the Loma Prieta Earthquake.

FACE VALUE OF MAJOR FEDERAL INSURANCE PROGRAMS

(In billions of dollars)

Program	1970	1975	1980	1985	1987	1988	1989
Deposit insurance	444.5	837.3	1,464.6	2,226.8	2,652.4	2,818.8	2,926.9
Pension Benefit Guarantee Corporation	—	—	405.5	598.1	701.5	755.5	819.7
Veterans life insurance	37.7	35.5	32.6	28.3	27.4	22.9	26.6
Federal crop insurance	0.8	1.2	2.7	6.6	15.5	21.2	13.3
Flood insurance	—	13.7	88.5	128.8	158.7	168.8	179.3
Overseas Private Investment Corporation	7.8	5.8	5.4	6.1	9.5	8.9	8.8
Nuclear risk insurance	100.0	58.5	89.5	70.5	87.5	72.5	—
Aviation war risk insurance	53.1	47.7	185.0	183.0	162.2	199.0	227.7
Maritime war risk insurance	17.0	25.0	21.7	—	9.0	10.8	10.9
Total	660.9	1,024.7	2,295.5	3,248.3	3,823.7	4,078.4	4,213.1

Federal insurance is not always needed to confer Federal responsibility. A portion of losses not covered by private insurance may fall on the Government through other channels, including tax writeoffs and disaster relief. During 1989 and 1990, the Loma Prieta earthquake and Hurricane Hugo led to supplemental appropriations for disaster assistance of almost $4 billion. The issue is often whether it is more equitable and less costly for the Government to provide prior insurance protection, either on a voluntary or a mandatory basis, or to address the same hazards through other means.

Government and Private Roles.—A second issue, closely related to the first, is the proper relationship between Government and private insurance. For some forms of risk, most notably as guarantor of deposits, the Government is virtually the sole insurer. In other cases, such as nuclear power accidents until recently, the Government was a supplementary insurer or reinsurer, i.e., it stood behind private insurance companies.

Managing Government's Risk.—The recent losses in the major Federal insurance programs highlight the issue of how Government can best manage the taxpayers' exposure to potential losses. Insurance encourages people to take risks they would avoid if they were not protected from the full cost of their actions. This so-called "moral hazard" should be balanced by controls or offsetting incentives. For example, Federal deposit insurance protection is accompanied by regulations that banks and thrifts must follow.

The nature of the risks that give rise to Federal insurance makes it difficult to control costs and to determine the level of premiums and reserves needed to cover future losses. As a result, most Federal insurance programs violate the basic insurance principle that premiums and reserves be based on reliable forecasts of potential costs.

When Government insurance is underpriced relative to its long-run cost, those who are protected receive a subsidy. Subsidized insurance increases moral hazard, which encourages additional risk-taking. This partly undermines the purpose of the program and increases future insurance losses that must be covered by Federal outlays.

DEPOSIT INSURANCE

A healthy economy requires a healthy financial system. As managers of more than $3 trillion in deposits, the Nation's banks, savings and loans, and credit unions are central to this system. Depositor funds are fully insured up to $100,000 per account. Measured in terms of actual risk of loss as well as the face value of insured liabilities, this is by far the Government's largest set of insurance programs.

Deposit insurance and its related policies are designed to encourage savings by assuring depositors that their funds will be protected, and to reinforce the stability of the financial system.

The Federal Government insures different types of deposits through separate insurance funds. The Federal Deposit Insurance Corporation (FDIC) administers the Bank Insurance Fund for bank deposits and the Savings Association Insurance Fund for savings and loan (thrift) deposits. Credit union depositors are protected by the National Credit Union Share Insurance Fund.

Recent Experience

In the past decade, Federal policies proved inadequate to deal with a series of rapid changes in the financial industries and their environment. These changes began with the extremely high and volatile interest rates of the late 1970s and early 1980s.

Interest Rates and Innovation.—Thrift institutions were badly harmed by rapidly rising interest rates because their liabilities had a much shorter maturity than their assets. They had to pay higher interest on current deposits than they earned on the fixed-rate mortgages that they had issued in previous years. Government regulation contributed to the problem by requiring that thrifts specialize in fixed-rate home mortgages. In this period, State and Federal regulators were slow to grant thrifts permission to originate adjustable rate mortgages and to eliminate other legal barriers to more diversity in both the type and location of their investments.

In the early 1980s, innovation in capital markets also contributed to the problems of many depository institutions. Housing finance

was transformed by unbundling of services and the development of secondary mortgage markets. The thrifts' share of mortgage originations fell from 44 to 37 percent between 1980 and 1989, and banks are now originating more mortgages than thrifts. Increased competition from mortgage bankers also added to the thrifts' problems.

A rapid restructuring of financial services is still underway. Today's division of labor between banks, thrifts, and other financial intermediaries continues to reflect as much the separate history and regulatory treatment of each class of financial institution as it does market forces. In a less regulated environment, market forces will continually redefine the roles of depository institutions, almost regardless of what Government does.

Moral Hazard.—In the course of these changes, hundreds of institutions saw most of their equity capital wiped out. Some failed and were sold or closed. However, because of the limited resources of the FSLIC, hundreds of thrift institutions continued to operate with little or no capital.

With little of their original investment left, many owners and managers of these firms took wild gambles. Some expanded their liabilities manyfold in a short time; people were willing to place their savings in these thinly capitalized or insolvent thrifts because of the above-market rates of interest they were offering and the Government insurance protection. Of the 50 costliest cases resolved by FSLIC in 1988, three-quarters had grown at a rate of more than 20 percent annually between 1983 and 1985. Most of the new insured deposits were invested in high-risk ventures. Rarely did these strategies succeed. Thus, a relatively small initial insolvency and slow rate of deterioration was transformed into large portfolios of bad loans and massive losses. Localized slumps in agriculture, energy, and real estate added to the losses. By the time some institutions were closed, the cost of paying off depositors had mounted enormously.

Premiums and Coverage not Matched.—Contrary to basic principles of insurance, Federal deposit insurance premiums do not vary with the known level of insured risk; all institutions pay the same fixed percentage of deposits. The result has been that healthy, prudently managed firms subsidize those that take more risk.

Compounding this problem, large institutions receive greater protection against failure than small ones while paying premiums on a smaller proportion of their liabilities. The insurers have used mergers and financial assistance to prevent failure, especially for very large institutions. In part this practice reflected fear that closing one of the largest banks could precipitate a wider financial crisis. However, this practice indirectly extends guarantees to deposits over $100,000 and to other creditors. Large banks pay lower effective premiums because insured deposits are a smaller share of their funds; they obtain a higher share from deposits over $100,000, foreign branches, and other borrowing. The effective extension of insurance coverage to deposits over $100,000 and uninsured creditors decreases the incentive of uninsured parties to monitor risk-taking, allowing depository institutions to take more risk and increasing the insurance funds' exposure to loss.

Lack of Accurate Information.—Better information on the risks posed by thrifts' rapid expansion into new forms of investment might have prevented some losses. However, traditional accounting practices and inadequate Government supervision often meant that the dangers were not known to creditors, regulators, or the public until massive losses already had occurred. Market value accounting information would have enabled regulators to close thrifts more quickly and brought the problem to public attention sooner.

Extent of Losses.—So great were the demands on the limited reserves of the Federal Savings and Loan Insurance Corporation (FSLIC) that several hundred insolvent institutions were permitted to continue operating for long periods. In calendar year 1988, 205 thrifts were closed by the FSLIC; but at the end of the year, over 300 insolvent thrifts remained open. Huge deposit insurance losses have resulted from FSLIC's inability to close these failures down. Ultimately, the FSLIC fund was completely drained. At the time of its dissolution, potential liabilities exceeded assets by at least $80 billion. This figure includes the unfunded cost of past thrift closures as well as the estimated $50 billion cost of closing insol-

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vent thrifts still open. Some believe that this cost will eventually be higher.

The impact of the savings and loan disaster must also be measured in other terms. Resources that were used to construct still-empty office buildings and failed resort hotels, or were wasted in even more improbable ways, might instead have been used for productive investment. The funds used to close insolvent institutions and protect depositors could instead have reduced the Federal deficit.

Commercial banks were also affected by the more turbulent environment of the 1980s, failing at rates not seen since the Depression. In 1988, 200 FDIC-insured institutions failed and were closed, while another 21 banks received Federal assistance to continue operating. This took its toll on the FDIC's insurance fund. Reserves fell from $18.3 billion at the end of 1987 to $16.3 billion in 1988 and to $14.3 billion in 1989.

Financial Condition of the Deposit Insurance Funds

The deposit insurance funds accumulate reserves in years when premium income and other receipts exceed losses. The adequacy of reserves cannot be known for sure, because future losses are uncertain. However, one indicator is the ratio of reserves to insured deposits. This ratio is shown below for all three deposit insurance funds for selected years.

The final cost of dealing with the current backlog of failed thrifts will not be known for some time. However, Government spending could exceed original estimates if more institutions fail, if premium income is reduced by slower industry growth, or if interest rates on borrowings are higher than estimated. Future commercial bank closing costs are also uncertain, but widespread losses on loans for commercial real estate, leveraged buyouts, and foreign borrowers could cause insurance losses to exceed current estimates.

RESERVE RATIOS FOR FEDERAL DEPOSIT INSURANCE

(Dollars amounts in billions)

Fund	1970	1980	1985	1987	1988	1989
Federal Deposit Insurance Corporation:						
Insured deposits	312.6	925.0	1,400.5	1,605.7	1,682.8	1,806.0
Reserves	4.2	10.7	19.5	18.3	16.3	14.3
Reserve ratio (percent)	1.35%	1.16%	1.39%	1.14%	0.97%	0.79%
Federal Savings and Loan Insurance Corporation:						
Insured deposits	131.9	487.3	723.3	898.0	977.2	958.9
Reserves	2.9	6.1	7.5	−8.9	−27.4	(1)
Reserve ratio (percent)	2.16%	1.26%	1.04%	−0.99%	−2.80%	(1)
National Credit Union Administration:						
Insured deposits	—	52.3	103.0	148.7	158.8	161.9
Reserves	—	0.2	1.1	1.6	1.8	2.0
Reserve ratio (percent)	—	0.32%	1.09%	1.08%	1.16%	1.22%

[1] FIRREA dissolved the FSLIC and created the Savings Association Insurance Fund to insure thrifts formerly insured by FSLIC. SAIF does not yet have reserves, but it is not responsible for either currently insolvent thrifts or those that may become insolvent through August 1992. These costs will be handled by the Resolution Trust Corporation.

FIRREA Reorganization and Financing Provisions

In addition to providing resources to dispose of the backlog of failed savings institutions, the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) requires owners to have more of their own capital at risk, and strengthens supervision and enforcement.

Reorganization.—FIRREA abolished the FSLIC insurance fund and established three entities in its place. First, the Resolution Trust Corporation (RTC) will dispose of currently insolvent thrifts and those that may fail during the next 3 years. RTC will receive $50 billion to resolve these cases from funds raised by the Treasury and the Resolution Funding Corporation, a new nonbudgetary financing entity. The FDIC manages the RTC under the general direction of the RTC Oversight Board, chaired by the Secretary of the Treasury. The Administration's budget proposals for the RTC are described in Section Two, Part III.

Second, most of the assets and liabilities resulting from past FSLIC takeovers (resolved through December 1988) have been transferred to the FSLIC Resolution Fund, under FDIC management. Treasury funds will cover its obligations if other income is inadequate.

Third, the insurance fund for thrift institutions formerly insured by the FSLIC, named the Savings Association Insurance Fund (SAIF), will be managed by the FDIC. The FDIC will also manage the deposit insurance fund for banks, renamed the Bank Insurance Fund (BIF).

FIRREA dissolved the Federal Home Loan Bank Board, which previously oversaw FSLIC, and transferred its responsibilities for regulating and supervising thrift institutions to a new bureau of the Treasury Department, the Office of Thrift Supervision (OTS). Oversight of the Federal Home Loan Bank system, a Government-sponsored enterprise that lends to thrift institutions, was transferred to a new independent agency, the Federal Housing Finance Board.

New Premium and Reserve Requirements.—FIRREA increased deposit insurance premiums, with a designated reserve ratio for both the BIF and the SAIF equal to 1.25 percent of insured deposits. The FDIC may set the ratio as high as 1.50 percent if it determines that there is a significant risk of substantial future losses. The incremental funds to meet this higher ratio must be set aside as supplemental reserves, and any earnings on this portion of the fund must be distributed to member institutions.

In order to accumulate these reserves, premiums have been raised. Thrift insurance premiums have increased sharply and will temporarily exceed bank premiums to help pay the costs of dealing with thrift failures. FIRREA provides the FDIC with authority to raise the premiums of either fund by up to 7.5 basis points per year after 1994, up to a maximum level of 32.5 basis points, if the reserve ratio is less than the designated ratio. Premiums must be rebated if the reserve ratio exceeds the target ratio after taking into consideration expected income and expenses.

New Capital Standards.—It is difficult to know the appropriate level of deposit insurance reserves and the premium charges needed to maintain these reserves. These depend not only on unforeseeable economic events but also on public policies that help control the threat to the insurance funds. Capital requirements are an important part of this policy. Higher capital standards ensure that a firm has enough of its own funds at stake to discourage excessive risk-taking and to postpone insolvency and losses to the insurance funds. Adjusting capital standards for the degree of risk-taking enhances this effect, and can thereby substitute for higher insurance premiums and reduce the need for reserves.

FIRREA raised capital standards for thrifts. It requires that the OTS prescribe standards that are not less stringent than those set by Federal regulators for national banks. The Act also requires that thrifts achieve and maintain core capital equal to three percent of assets and tangible capital equal to one and one-half percent of assets. Prior to January 1, 1992, up to one-half of core capital may consist of qualifying supervisory goodwill, which is an intangible asset resulting from past acquisitions of other thrift institutions. All of core capital must be tangible by January 1, 1995.

Each of the Federal banking and thrift regulators has developed new capital regulations that link required capital levels to the risk associated with each type of asset. These risk-based capital requirements are modelled after an international accord adopted in 1988 by the Basle Committee on Banking Regulations representing 12 nations.

Need for Additional Reforms

FIRREA was a major first step in deposit insurance reform. Although many who supported the Act believed that additional reforms were required, the need for fast action to deal with the thrift crisis, the complexity of the issues, and the controversial nature of some reform ideas all suggested that more time and study were needed. Thus, FIRREA provides that the Secretary of the Treasury, in consultation with others, study a wide range of additional reforms. A final report to Congress on the findings will be completed no later than February 1991.

Reform Principles

Three tests can be applied to any deposit insurance reform proposal: (1) does it discourage excessively risky behavior? (2) does it encourage rapid adaptation to ever-changing market conditions? and (3) does it provide a reasonable balance between the need to limit taxpayers' liability and the need to protect small depositors?

Providing Incentives to Reduce Risk.—The central purpose of deposit insurance must be to strengthen the financial system and thereby promote stability, saving, and efficient use of capital. Effective deposit insurance policies will reduce excessive risk-taking. This will lower the burden of premiums on well-managed firms and reduce the cost to the Government.

Moreover, rapid change means that removing perverse incentives should be the Government's first line of defense against excessive risk-taking. Too great a reliance on tighter controls and larger penalties to reduce excessive risk may ask too much of regulators and carry a heavy price for the industries. It requires Government regulators to monitor effectively and control risk-taking in thousands of firms with a vast total size in a period of rapid innovation. Even if successful, closer supervision imposes burdens on well-behaved as well as poorly-managed firms.

For these reasons, a good case can be made for redistributing the potential cost of failures so that the owners and unsecured creditors will be at greater risk. The result should be a system with a better balance of Government regulation and self-regulation. Federal insurance should be priced (through a combination of premiums and capital requirements) in a manner that reflects all sources of risk, prospective as well as current. In addition, the facts about an institution's financial condition should be made clear to depositors, creditors, and stockholders so that the market may impose penalties on poor performers.

Promoting Adjustment to Change.—Given the environment of rapidly changing market forces, Government should support adaptation. Attempts to delay change and protect weaker firms only undermine stronger firms and prove costly to the Government. Rapid innovation is a healthy development, leading to more efficient uses of capital. As part of the process of adaptation, some depository institutions, like other business firms, must be permitted to fail—and their owners, officers, and creditors should bear losses when they do.

In addition, the methods of handling troubled institutions must be evaluated in light of the long-run effect on industry adjustment to change. In particular, where thrifts and banks are engaged in similar activities, they should be subject to a common set of rules. Risk-based capital can encourage efficient adjustment to change by not penalizing firms whose comparative advantage lies in safer activities.

Limiting Federal Liability.—Reducing the scope of Federal insurance is perhaps the most straightforward way to reduce the moral hazard produced by the current broad blanket of protection. The thrift crisis demonstrated how the incentives set up by broad Federal protection induce excessive risk-taking by failing firms and remove the discipline that depositors and other creditors otherwise would impose on their managers. It may be possible to achieve the goals of deposit insurance at reduced cost by lowering the Government's level of exposure to losses.

Federal liability for losses could be limited in several ways. One is simply to restrict protection only to deposit accounts up to $100,000. Some methods of assisting troubled institutions extend guarantees to uninsured depositors, unsecured creditors, or shareholders. When this happens, the Government's cost is increased and market discipline is undermined. In addition, it may be desirable to require some depositors to share some portion of the losses through deductibles or similar features that are standard with most private insurance.

Many other specific steps can be taken to reduce Government exposure and promote stronger industry self-discipline. Reform proposals range from relatively small rule changes to major structural revision. Among the more modest reforms are: market-value accounting standards, which would reveal at all times the true level of each institution's net worth; risk-based pricing of insurance; and removing regulatory barriers to asset and geographic diversification, product and services integration, and innovation.

Larger structural reforms would narrow or even break the linkage that now translates potential depositor losses into Federal Government liabilities. The Government's liability for losses could be limited either by narrowing the range of investments funded by insured deposits or by limiting the level of deposits or the types of depositors and creditors protected. This could include changing the role of the Government from that of primary insurer to that of catastrophic insurer, standing behind a private insurance mechanism that might lack the reserves needed to cope with a major financial crisis.

The Need for Accountability

To the extent that the Federal Government remains at risk when financial institutions fail, public policy must ensure adequate accountability to the public for the consequences of current and past policies. One way to strengthen accountability is to improve methods of recording, forecasting, and reporting insurance commitments and potential losses. Future budgets may contain more detailed estimates of these potential liabilities, recorded in a more timely manner.

PENSION TERMINATION INSURANCE

The Pension Benefit Guaranty Corporation (PBGC) was created in 1974 to guarantee payment of retirement pensions when private sector defined benefit plans terminate without enough assets to pay the promised benefits. Two programs were established: one for single-employer plans, the vast majority of insured plans, and a second for multi-employer plans. The present value of insured benefits is now $820 billion.

Government pension insurance may cause some firms or unions to fund their pension plans less fully than they would otherwise. The PBGC originally was required to pay benefits in the event of any plan termination, up to a legal limit, and firms had some leeway in choosing to terminate. The Government's minimum funding standards had little effect on chronically underfunded plans. Troubled firms avoided funding their pension plans, and the cost of the program far exceeded initial estimates.

Congress responded by restricting the conditions under which plans could be terminated and by raising the insurance premium. Guarantees of multi-employer plan benefits were restricted in 1980, and became available only after a plan had been reformed to improve its financial condition. In the mid-1980s, guarantees of benefits from single-employer plans were generally restricted to firms that had become insolvent.

Congress also raised the premium for single employer plans to $2.60 in 1978 and again to $8.50 in 1986. In 1987, a higher, risk-based premium was enacted. It not only increased the basic single-employer premium to $16 per covered participant but added a variable-rate premium equal to $6 per $1,000 of unfunded promised benefits. The total premium, capped at $50 per participant, now averages $19.

These changes have improved PBGC's financial position. The agency has a positive cash flow that should continue into the next century, barring unforeseen events. The reforms, however, did not eliminate PBGC's long-term deficit. As of September 1989, the long-term deficit of the single-employer program was $1.1 billion. This deficit is the difference between existing assets and the present value of all

expenses and benefits that will be due under the plans PBGC has taken over. It does not count over $2 billion of liabilities now being contested in a large case before the Supreme Court. Depending on the outcome of that case and future claims, the positive cash flow of the PBGC could turn negative sometime early in the next century, and the PBGC's long-term deficit could climb.

Most PBGC-backed pension plans are overfunded, thanks in large part to the rise in stock market prices in the 1980s. They have assets worth $1,000 billion backing promised benefits whose present value is $820 billion. About 20 percent of all plans, however, are underfunded. The bulk of the underfunding is in a few dozen firms, with a heavy concentration in three industries: steel, automobiles, and airlines.

Although the 1987 reforms require firms with underfunded plans to increase contributions, Government funding standards and the tax system still sometimes allow plan funding to lag pension promises. When a firm with an underfunded plan becomes insolvent, PBGC's liabilities and long-term deficit increase. Prior to insolvency, as the firm's prospects become uncertain, there is a period of moral hazard, when the firm may slow the pace of funding, requesting Government waivers of required contributions.

Potential Future Losses

One indication of PBGC's exposure to additional claims is the shortfall of assets in underfunded plans relative to the present value of PBGC-guaranteed benefits. PBGC's exposure to such terminations is now between $20 and $30 billion. Approximately $6 billion of this is associated with a few financially weak firms that have a comparatively high probability of insolvency.

It is difficult to predict how many insurance claims PBGC will face in the future and the extent of the funding shortfall of future terminated plans. If the claims continue at the pace of the past 8 years, the PBGC's long-term deficit could be between $1.5 billion and $6 billion by the year 2004, depending on the outcome of the large contested claim before the Supreme Court. That case will clarify PBGC's power to restore a terminated pension plan to a sponsor it deems to have abused the pension insurance system.

Assuming no premium increase, the future PBGC long-term deficit could exceed this projection. Claims rates may surpass those of the past 8 years, when the economy experienced uninterrupted growth. The value of pension plan investments may not grow as rapidly as during the stock market boom since 1982. Defined benefit plans may not be as popular as in the past; a faster shift toward defined contribution plans, such as the (401)k plans, would slow the growth of PBGC insurance premium receipts. An adverse ruling on the current litigation over the PBGC's right to restore plans to their sponsors could increase the temptation to underfund. Some plan benefits, such as payments to employees when a plant is shut down, are not predictable enough to be included in pension funding standards and in the calculation of PBGC premiums. Finally, PBGC premiums may remain below the level needed to eliminate the PBGC's future deficit because they are determined politically.

Additional reforms might be considered to reduce PBGC's long-term deficit. These include charging higher premiums for underfunded plans; giving a higher preference in bankruptcy to PBGC's claim or to the claims of underfunded pensions; eliminating PBGC's coverage of benefits that cannot be funded in advance, such as those sometimes provided following a shutdown; and enhancing PBGC's rights to return responsibility for plans to firms that have regained their financial health.

OTHER FEDERAL INSURANCE

The Federal Government operates insurance plans to protect against some other types of risk. Some of these plans are comparable to insurance available in the private sector; others, such as disaster insurance, are not readily available elsewhere; and some offer indemnification, which is coverage without insurance premiums.

Life insurance for veterans has generally operated on a true insurance basis, with premiums adequate to cover expected claims. Because private firms can provide this service, direct Government insurance is being phased out. In its place the Government will continue

to operate the Servicemen's Group Life Insurance Fund, which collects premiums and makes payments to the private carriers that do the actual insuring.

Most other Federal programs offer disaster insurance of one sort or another, and disaster insurance commonly has two basic problems. The first is that everyone assumes that in the event of a disaster the Federal Government will grant relief whether people are insured or not. If people believe they will be reimbursed for disasters without paying for insurance, they will not buy coverage voluntarily even when it is subsidized. The second problem is that the existence of insurance may encourage people to undertake more risky behavior. This is especially a problem when insurance premiums are subsidized.

Federal Crop Insurance illustrates the difficulty in selling disaster insurance, even when it is heavily subsidized. Federal crop insurance was expanded in 1980 in order to protect farmers from the economic risk of crop loss and obviate the need for disaster relief. The program has failed in its mission.

Despite the fact that the program receives roughly $1 billion per year in taxpayers' money, historically only about one-third of eligible commodity production was insured. Federal spending covers about two-thirds of total crop insurance program costs, including premium subsidies, administration, and excess losses. Yet even with this heavy subsidy, disaster relief bills costing $7 billion were enacted in 1983, 1986, 1988, and 1989.

It is widely recognized that participation in crop insurance programs is so low in part because farmers have come to rely on this Federal agriculture disaster assistance. Since 1980, about $5 billion has been spent by the Federal Government to subsidize crop insurance, while distributing an even greater amount in disaster aid. At the same time, administrative costs have run out of control. Between one-quarter and one-half of all outlays associated with the program are attributable to administrative costs of insurance delivery. Further, the Federal crop insurance program, in its current form, is subject to considerable fraud and mismanagement. Several sources have reported cases in which growers have taken out insurance with no intention of planting or harvesting a crop in that year.

The budget proposes to eliminate Federal crop insurance. At the same time, to avoid the uncertainty that can arise over the timing and amount of disaster assistance (which requires legislation in response to each disaster), permanent authority is proposed for the Secretary of Agriculture to provide disaster relief under specified conditions. Equitable treatment of farmers would be assured by establishing comparable standards for compensation across crops and regions.

Government flood insurance illustrates the promotion of risky behavior. Protecting people from flood losses encourages development in flood plains. Insurance is therefore available only to individuals who live in communities that enforce appropriate land use and building standards. In 1990, a new premium system will be introduced, based on a community's effectiveness in regulating flood plain development.

Finally, the Government provides some coverage without insurance premiums, as is now proposed for crop losses. It indemnifies air and maritime carriers in case of loss from the operation of their aircraft or ships during a war.

VI.C. CLEANING UP FEDERAL FACILITIES

PROMOTING FEDERAL FACILITY COMPLIANCE

The President is committed to cleaning up environmental contamination from past practices at federally owned facilities across the country, and to ensuring that Federal agencies meet or exceed all environmental standards required by relevant laws and regulations. Agencies have the responsibility to operate within these laws, and citizens have the right to insist that Federal agencies be good neighbors.

Federal facility compliance with environmental laws is both a moral and legal responsibility and a practical necessity. Such compliance is necessary to ensure that Federal activities do not create future problems. Unfortunately, environmental safeguards previously employed were in many cases either ignored or inadequate to provide long-term protection. Consequently, this Administration has been left with the responsibility of cleaning up a legacy of contamination from Federal facilities that has developed over the last 40 years. The major increases in this budget signal a commitment to that cleanup.

New statutes, tighter standards, increased knowledge of health effects, and a Bush Administration policy that *all* activities must comply with environmental standards has made cleaning up a difficult task in an era of limited resources. Nevertheless, the Administration is moving aggressively to address the highest priority risks posed by Federal facilities.

If the government can learn one thing from past mistakes, it is that neglect of this responsibility now will only lead to considerably more expensive and complicated cleanups in the future.

The budget contains major increases in funding for several agencies that will result in significant progress towards the goal of bringing Federal facilities into compliance with environmental laws.

The proposed increase of almost $778 million, or 21 percent above 1990 levels, represents a dramatic acceleration of Federal environmental cleanup efforts. It comes on the heels of a $785 million increase (27 percent over 1989) in 1990.

Magnitude of the problem.—The President's 1991 request for Federal facility compliance is only 1 year in a long-term commitment. Cleanup of past contamination, which comprises the majority of Federal facility compliance costs, is estimated to cost at least $56 billion, and possibly as much as $100 billion, depending on cleanup standards and the extent of contamination. The Department of Energy faces the largest cleanup liability, between $48 and $86 billion, which will require at least 25 to 30 years to address. The Department of Defense (DOD) anticipates $7 to $13 billion in cleanup costs alone over the next 10 years.

In addition to the cleanup of contamination from past activities, Federal agencies will have to take corrective actions to come into compliance with current environmental standards. They will also incur annual costs to manage and dispose of waste from their ongoing operations.

Again, the largest costs for both corrective actions and waste will be borne by the Department of Energy (DOE), principally because waste generated by DOE is often radioactive. DOE estimates needs of about $0.9 billion for corrective actions over the next 5 years, after which most of the problems will have been corrected. Funding for waste management will, however, be necessary over the long term. DOE estimates that waste management activities will cost from $2 billion to $2.5 billion per year. It is estimated that these types of costs for Federal agencies, other than DOD, will be small by comparison.

The cumulative Federal Government cost over 30 years for all these activities will be in the range of $140 billion to $200 billion in constant dollars.

SPEEDING THE CLEANUP OF FEDERAL FACILITIES

(Dollar amounts in millions)

	1989	1990	1991	1990–91 Dollar change	1990–91 Percent change
Budget authority:					
Energy	1,657	2,190	2,791	+601	+27
Defense	1,155	1,402	1,520	+118	+8
Interior	36	40	65	+25	+63
Agriculture	5	20	30	+10	+50
Transportation	44	26	48	+22	+85
NASA	26	30	32	+2	+7
Total budget authority	2,923	3,708	4,486	+778	+21
Outlays:					
Energy	1,077	2,056	2,552	+496	+24
Defense	1,115	1,486	1,582	+96	+6
Interior	30	30	44	+14	+47
Agriculture	1	13	26	+13	+101
Transportation	19	30	44	+14	+45
NASA	16	19	28	+9	+47
Total outlays	2,258	3,634	4,276	+642	+18

MEETING ENVIRONMENTAL REQUIREMENTS

Both Federal environmental statutes and a Presidential executive order require Federal agencies to comply with the same Federal, State and local pollution control standards that apply to a private person. Just as private sector businesses must meet stringent air and water emissions limitations, so must Federal agencies.

While ongoing air and water compliance problems still exist at some Federal facilities, the major Federal facility pollution control problem is cleanup of hazardous waste that was disposed of prior to establishment of stringent Federal regulations governing safe disposal. To rectify these problems, Federal agencies such as the Environmental Protection Agency (EPA), and the Departments of Justice (DOJ), DOD and DOE have made major strides since January 1989 in accelerating the process for cleaning up old sites under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, sometimes called "Superfund"). In addition, these agencies are working to bring operating facilities into compliance with the Resource Conservation and Recovery Act (RCRA).

Essential to the achievement of cleanup under CERCLA are Federal Facility Interagency Agreements (IAGs) between EPA and a Federal Agency. These IAGs set out the schedule and plans for achieving and maintaining com-

pliance. At present, comprehensive cleanup agreements have been reached at 30 major facilities. Another 10 agreements are in the final stages of negotiation.

IAGs are useful in expediting compliance because they encourage states to become involved in agreeing to a satisfactory cleanup process, they often address environmental requirements from more than one environmental statute, they allow for the identification and implementation of cleanup actions which can be started in the near term while long-term planning and engineering work proceeds, and they can address the full range of hazardous substances, chemical and radioactive wastes in one document.

These interagency agreements allow fines and penalties against Federal agencies for certain types of violations and they specifically allow citizens and states to sue the Agency to enforce the IAG.

AGENCY EFFORTS TO CLEAN UP FEDERAL FACILITIES

Department of Energy

The Department of Energy faces the largest environmental clean-up problem among the Federal agencies. The problem has been driven by two major factors:

- In the past, DOE's management practices, culture, and environmental practices became insulated from the increasing attention paid to environmental concerns, due in part to the secrecy of its national security mission.
- The enactment of RCRA and CERCLA legislation in the 1980s clarified and extended the requirements DOE faced for cleaning up its facilities. Prior to these laws, many activities at DOE sites were not subject to any cleanup requirements.

Between 1985 and 1988, the previous Administration took a series of actions to begin to address the problem. Most significantly, the position of Assistant Secretary for Environment, Safety and Health (ES&H) was created to oversee the Department's compliance with environmental regulations. Spending for ES&H activities began to increase sharply across the Department. However, because the Department was then only in the early investigation stage, the full extent of the cleanup problem could not be known.

Department of Energy 5-Year Plan.—In March 1989, Secretary Watkins directed the Department to prepare an environmental restoration and waste management 5-year plan as a means of gaining a better understanding of the specific cleanup and compliance actions required in the near term, as well as the cost of those actions.The Plan encompasses four categories of program activities: corrective activities, environmental restoration, waste management operations, and applied R&D.

- *Corrective activities* include those actions required to bring currently operating and standby facilities into compliance with applicable local, State and Federal requirements and internal DOE requirements with respect to air, water, and solid waste. They cover the full range of potential releases to the environment from DOE facility operations.
- *Environmental restoration* refers to the assessment and cleanup of inactive facilities and sites. Environmental Restoration consists of two sets of activities: (1) remedial actions to halt or prevent potential releases from inactive waste sites and (2) decontamination and decommissioning of older facilities no longer in operation.
- *Waste management operations* refer to the ongoing activities throughout DOE that are directed toward the management of radioactive, hazardous, mixed and sanitary wastes. The regulatory requirements of waste management activities derive from the type of waste being managed, with EPA, DOE and the Nuclear Regulatory Commission all having a role in determining standards and practices.
- *Applied R&D* is a program to resolve major technical issues and advance beyond current technologies for environmental

restoration and waste management operations. The main focus of the program is on better and less costly techniques for waste cleanup. Major initiatives will focus on waste minimization, development of improved environmental restoration technologies, application of robotics and automated systems technologies, and adaptation of existing technologies.

The Plan proposes an integrated, life-cycle approach to corrective activities, environmental restoration, and waste management operations (emphasizing waste minimization).

The work in the 5-year plan is divided into the following priorities:

Priority 1.—Activities necessary to prevent near-term adverse impacts to workers, the public, or the environment.

Priority 2.—Activities necessary to comply with existing compliance agreements (in place or in negotiation) between DOE and Federal, State, and local agencies.

Priority 3.—Activities required for compliance with external environmental regulations that were not captured by Priority 1 or 2.

Priority 4.—Activities that are not required by regulation but would be desirable to undertake.

Cost of the 5-Year Plan.—The current 5-year projections of DOE's costs estimate that spending will increase from $2.2 billion in 1990 to $3.6 billion in 1995. The $2.2 billion for 1990 signed into law by the President represented an increase of $530 million over 1989.

- *Corrective activities* represent the smallest component of the costs. Most of these funding requirements are in the near term (1990-92), reflecting the need for prompt action to bring operational facilities into compliance with existing standards.
- Funding for *environmental restoration* will more than *triple* if the plan is implemented. This reflects the gradual transition from the investigation and feasibility studies required under CERCLA and RCRA to actual remediation projects. Because the ultimate configuration of the restoration projects has not yet been determined, this category of cost estimate has the greatest degree of uncertainty.
- Funding for *waste management* activities comprises the largest portion of the cost estimates (a total of 60 percent). This reflects the cost of constructing and operating waste management facilities.
- *Applied R&D program*: To accomplish the goals for improved waste management and waste site clean-up, DOE plans to increase the investment in applied R&D and better focus those funds. The objective of this program will be to accelerate the conception, creation, development, and deployment of the next generation of environmental clean-up and waste management technologies. DOE plans to allocate 10 percent of its resources for waste activities to fund this new R&D effort.

Accelerating the Cleanup Effort.—The budget provides $2.8 billion for 5-year plan activities. This is a 27 percent increase over 1990 funds. At this significantly increased level, DOE will be able to perform the necessary corrective activities that will lead to full compliance with State and Federal environmental regulations. DOE can also continue to make important progress in its remedial investigations and feasibility studies, so that the full scope of the problem can be known and solutions planned. In addition, active waste management and environmental remediation projects can stay on track and proceed according to schedule.

FUNDING FOR THE DEPARTMENT OF ENERGY 5-YEAR PLAN IN THE 1991 BUDGET

(In millions of dollars)

	1990	1991	1992	1993	1994	1995
Total budgetary resources [1]	2,264	2,882	3,444	3,718	3,776	3,770
Defense (budget authority)	1,933	2,362	2,819	3,020	3,137	3,161
Nondefense (budget authority)	257	429	486	518	458	437
Total:						
Budget authority	2,190	2,791	3,305	3,538	3,595	3,598
Outlays	2,056	2,552	3,053	3,444	3,720	3,718

[1] Includes funding from uranium enrichment revenues. These are not included in budget authority.

Full Implementation of Compliance Agreements.—The proposed budget assures that all highest priority activities are fully funded. This includes approximately 1,600 separate projects throughout the DOE complex and at individual commercial sites where DOE has responsibility for carrying out environmental restoration. This level of activity will ensure that DOE comes into full compliance with environmental laws, regulations and requirements.

Single New Appropriation Account.—Finally, as a means of formalizing the commitment of Congress and the Administration to fund clean-up work adequately, the President's 1991 budget includes a proposal to establish a separate appropriation account for funding all cleanup and restoration activities. The Administration is committed to ending the practice of trading off funds for environmental projects with production and other programmatic activities. A separate appropriations account will ensure that funds meant for cleanup and environmental restoration will be spent according to the priorities set among all cleanup projects, not according to what is left over after other DOE needs have been satisfied.

This year, DOE will put in place a central management system that will allow the agency to track progress towards meeting milestones. This system will also provide a means for tracking expenditures of dollars to actual "problems solved".

Department of Defense

Since 1984, the Department of Defense has spent about $2.7 billion on necessary environmental restoration. To date about 9,000 out of the nearly 16,000 site inspections have been completed. DOD has identified 3,000 sites that require remedial action (cleanup). Remedial actions have been completed on about 11 percent of the identified sites requiring cleanup.

Based on DOD's current knowledge of the sites and existing environmental standards, the Department now estimates the total remaining cost of cleaning up all Defense sites to be between $7 and $13 billion in constant 1990 dollars.

In addition to its cleanup program, DOD has been strengthening its environmental compliance program. Environmental compliance projects provide for upgrading currently operational facilities and the cleanup of newly generated waste. Projects include installing air pollution control equipment on boilers, treating waste water before discharging into waterways, finding ways to reduce the amount or toxicity of hazardous wastes, removing asbestos, and reducing radon emissions in family housing units.

The budget proposes $1.5 billion for continuation and expansion of the defense cleanup and environmental compliance program. This represents an increase of $118 million over 1990 program, reflecting a commitment to speeding up the cleanup process in order to

ensure timely compliance with environmental statutes and protect the health and safety of the American people.

Department of the Interior (DOI)

The budget proposes $65 million, a 63 percent increase above 1990, for environmental compliance and hazardous waste cleanup activities in the Department of the Interior. This will allow the Department to continue its site inventory, conduct as many assessments and investigations as possible, and keep identified remedial actions on schedule. Assessments and investigations of potentially contaminated sites will increase 81 percent, from 137 in 1990 to 248 in 1991. The budget also fully funds 297 remedial actions in 1991, compared with 195 in 1990.

Each bureau within DOI has a program to ensure environmental compliance and to fund cleanup activities. DOI hazardous waste sites vary widely in nature and scope. These include unauthorized landfills on public lands, old mining operations located on patented or Bureau of Land Management land, polluted irrigation drainage that, in some cases, may be from Bureau of Reclamation water projects, and underground storage tanks on lands managed by the Bureau of Reclamation, the Bureau of Land Management, the National Park Service, and the Fish and Wildlife Service. About 80 percent of DOI sites potentially requiring cleanup are in the West.

DOI is continuing its inventory of lands and facilities with potential problems, and conducting assessments and investigations of hazardous waste sites.

Department of Agriculture (USDA)

The budget proposes $30 million, an increase of 50 percent above 1990, for hazardous waste cleanup activities in USDA. USDA operates a centrally managed Hazardous Waste Management program, which is responsible for coordinating and monitoring all hazardous waste compliance actions. The Forest Service and the Agricultural Research Service (ARS) account for over 95 percent of all hazardous waste compliance activities within USDA. Problems consist mainly of leaking underground storage tanks, potential discharge of toxic wastes from abandoned mines, and potential contamination from past discharge of chemicals from research facilities.

Department of Transportation (DOT)

The budget provides $48 million, an 85 percent increase above 1990, for hazardous waste cleanup and compliance activities in the Department of Transportation. The Federal Aviation Administration (FAA) and the Coast Guard account for nearly all of DOT's cleanup and compliance needs. Most of the work involves replacement of underground storage tanks.

National Aeronautics and Space Administration (NASA)

The budget requests $32 million, an increase of 7 percent above 1990, for cleanup and compliance activities in NASA. NASA cleanup projects include soil and groundwater remediation, upgrade of various facilities, leaking underground storage tanks, and addressing facility deficiencies and corrective action requirements.

VII. MANAGING FOR INTEGRITY AND EFFICIENCY

VII.A. REFORMING THE BUDGET PROCESS

The process by which Congress deals with the budget each year is flawed in several respects. It consumes too much time and works poorly; and it is not achieving the deficit targets established by Congress itself in the Gramm-Rudman-Hollings law.

The President cannot by himself do much to reform the budget process. The formulation of the Presidential budget is not at issue. *The problem lies in the legislative consideration of the budget.* The President can suggest reforms, but in full awareness that these fall within congressional prerogatives.

An exception is amending the constitution, which is addressed below. But amendments requiring a balanced budget and providing for a line-item veto would require several years, at best, to complete the process of ratification. In the meantime, it is important to pursue reform through legislative action.

MAKING THE PROCESS WORK BETTER

Joint Budget Resolution.—At present the annual budget resolution is a concurrent resolution, which does not require the signature of the President. A joint resolution, which needs approval of the President, would guarantee Presidential involvement in budget negotiations early in the process. The ensuing legislation—appropriations bills, revenue measures and reforms of mandatory programs in reconciliation bills—would reflect those negotiations and thus there should normally be less conflict between the executive and legislative branches over these bills in the later stages of each Congress.

There will always be problems of interpretation of budget resolutions and a joint resolution will not make the later budget process completely smooth. But it would at least assure a negotiation each year and should settle the basic boundaries for later legislative action.

Budget Measurement and "Scorekeeping".—The budget process has been plagued by differences between the Administration and Congress in measurement of the budgetary impact of various legislative provisions. The Bipartisan Budget Agreement reached in April 1989 made significant progress in resolving many of these issues, and a recent agreement between OMB, the Department of Defense, and the Congressional Budget Office (CBO) has resolved most differences in scorekeeping for defense.

In some cases, different assessments of the impact on outlays or receipts of specific legislative proposals or amendments reflect honest differences of judgment. But other issues involve definitions or similar matters, such as whether certain outlays are "mandatory" or "discretionary." The Administration, the CBO and the Congressionmal committees concerned should build on their recent cooperative work and seek further progress in resolving the remaining differences.

Biennial Budgeting.—If the budget process could cover 2 years instead of 1, there would be a large saving of congressional time and better opportunities for improved program management in the executive branch.

Numerous Members of Congress and such expert outside observers as the first Director of the Congressional Budget Office have proposed biennial budgeting. But progress has been slow. For example, in the 1985 defense authorization act Congress mandated 2-year budgeting for the Department of Defense, starting with the budgets for 1988 and 1989. But in practice this mandate has not been followed by the Appropriations Committees, which continue to enact annual appropriations.

A reform that stops short of 2-year appropriations for all sectors of the government could still be useful. The Bipartisan Budget Agreement reached in late 1987 covered the 2-year period of 1988 and 1989. While it was reached too late to affect the congressional budget process in calendar year 1987, it helped to make the process in calendar 1988 far smoother. This was the case even though by their nature such executive-legislative branch

agreements cover only broad budget categories and cannot settle most details of the budget.

It is important that any biennial budgetary process be linked with improved discipline in the supplemental appropriations process (discussed below). If these are not linked, biennial budgeting could easily degenerate into budgeting by near-continuous supplementals.

MAKING THE PROCESS MORE EFFECTIVE IN REDUCING THE DEFICIT

Enhanced Rescission Authority.—The Budget and Impoundment Control Act of 1974 severely restricted the President's powers to "impound" funds appropriated by Congress. The provision in that law under which the President can "rescind" all or parts of appropriations items has, from the President's perspective, been essentially unworkable. Such rescissions are not effective unless affirmatively approved by both houses of Congress within 45 days, and the great majority of proposed rescissions in the 15 years since the Act was passed have been killed by simple inaction.

Congress has approved rescissions totaling $19.6 billion of $57.8 billion submitted by Presidents Ford, Carter, Reagan and Bush, but $11.7 billion of the approved rescissions, or 60 percent, were in 1981, President Reagan's first year. In the last 4 years only eight rescissions, totaling $183 million, have been approved out of 164 submitted with a total of $16.1 billion.

The President strongly supports a form of enhanced rescission authority called "legislative line item veto" proposed by a group of Senators headed by Senators Coats and McCain in late 1989. This would require an up-or-down vote in Congress on Presidential rescission proposals. In the absence of a line-item veto amendment to the constitution, enhanced rescission would give the President a realistic opportunity to seek to eliminate from appropriations bills special interest items that he deems unworthy, while offering Congress full protection through the provision for a vote on each rescission.

At present the entire government, with its myriad programs and agencies, is financed by only 13 appropriations bills. If the President finds in these multi-billion-dollar bills items that he regards as not in the general interest, his only choice is between vetoing the entire bill or sending to Congress a rescission with little hope that it will be approved. The public interest would be better protected if the President had more effective authority to be selective in approving appropriations bills.

Restraining Supplemental Appropriations.—If abused, the use of supplemental appropriations can undo much of the effect of budgetary discipline exercised during the budget process. It is generally acknowledged that supplementals are sometimes needed to respond to emergencies, such as natural disasters or fast-breaking developments abroad. However, this necessity should not be permitted to develop into a huge loophole that opens the way to spending above the limits originally established for a fiscal year. Until recently the executive branch shared some of the blame with Congress for over-liberal use of supplementals.

Supplemental appropriations are one reason that deficits since enactment of the GRH law have invariably been higher than the target levels. Enacted supplementals totaled $39.8 billion in 1985–88 inclusive, of which $12.3 billion were congressional additions to Administration proposals.

In 1989 Congress acted with commendable restraint on supplementals, including provision of offsets. It would be desirable to ensure such restraint in the future through formal congressional procedures.

- Supplementals should be required to meet a "dire emergency" standard, both in their submission by the President and their approval by Congress.
- There should be provision for automatic offsets for both budget authority and outlays in all supplementals. The basic rule should be an offset through a uniform across-the-board reduction in discretionary accounts in the same appropriations act that is the subject of the supplemental (that is, accounts in the jurisdiction of the same appropriations subcommittee). This rule would apply unless an alternative full offset were provided in the supplemental. Otherwise, the automatic across-the-board offset rule should be waived only by a supermajority vote.

Closing Loopholes in Gramm-Rudman-Hollings.—The principal loophole is that spending increases or revenue reductions enacted after the final sequester order date of October 15 of each year do not count against the G-R-H deficit target or sequester trigger point and are not penalized in any way. This problem is readily solved by having a second sequester trigger date, preferably early in the next calendar year. The sequester calculations would have to use the same economic and technical assumptions as in the original calculations and only the deficit effect of new policy actions (including regulations as well as legislation) would be added to the calculation. If the new estimate of the deficit were above the trigger point (i.e., $10 billion above the deficit target for that year), a sequester would be imposed or the original sequester increased in magnitude.

Reinforcing Sequester.—As the G-R-H law now stands, it can be relatively painless for Congress to fail to meet the deficit target and allow a sequester to be ordered in October. Later legislation can cancel the sequester (with or without real budget savings to reduce the deficit). While it is widely agreed that sequester is not the preferred means of cutting spending, the savings from sequester are real and reduce the deficit. A desirable change would require a supermajority vote to cancel (or restore) sequester savings once achieved.

BUDGETARY TREATMENT OF SOCIAL SECURITY

At present and for several decades in the future the income of the old age, survivors and disability insurance trust fund will exceed its outlays for benefit payments, resulting both in sizeable annual trust fund surpluses and a large accumulated reserve balance. The reserve balance—which will grow to several trillion dollars under current economic assumptions—is intended to be available to finance the benefits of the "baby boom" generation when it retires in the next century.

Since the inception of the social security system in the late 1930's trust fund reserve balances have been invested in special issues of U.S. Government securities. When, as at present, there are annual social security surpluses, these investments reduce, dollar for dollar, the Treasury's need to borrow in the public financial markets. In that sense, social security surpluses are "financing" part of the deficit in the non-social security portion of the budget.

This situation has led to proposals in Congress to remove social security from the calculation of the budget deficit or surplus for purposes of Gramm-Rudman-Hollings. Some of these proposals would require a balance in the remainder of the budget, not immediately but at a later point. The effect of these proposals would be to produce large surpluses in the unified budget as now calculated and a reduction in the publicly held national debt. This may well be desirable.

Apart from the social security question, the Gramm-Rudman-Hollings law is silent on what is to happen with the budget after it reaches balance in 1993. Some proposals for excluding social security from the budget, as noted above, would extend G-R-H by requiring gradual achievement of balance in the non-social security portion of the budget.

However, there is a danger in these proposals. If social security were taken out of the G-R-H budget calculations altogether, given the large size of the annual surpluses and the prospective huge reserve balances, there would be great temptation to spend the reserves and/or reduce social security receipts. Such changes, by reducing the social security reserves, would jeopardize the benefits of those who are working now and who will retire in the next century.

There is a parallel problem in simply allowing G-R-H to expire after 1993, while retaining the present unified budget concept. As surpluses developed in the budget, chiefly as a consequence of the excess of social security receipts over outlays, Congress would be likely to "spend" those surpluses on any number of possible programs and projects, leaving at best a balance in the budget as presently defined. The total budget would grow and the social security surplus would still be financing a large deficit in the rest of the budget. The capacity to finance future benefit payments, however, would be reduced—and the necessity for either a future social security tax increase or a future social security benefit cut would be increased.

To address this problem the Administration is proposing an alternative to simply removing social security from the budget and the deficit calculation. The G-R-H law would be extended beyond 1993 and would require *a balance in the unified budget for all future years.* The social security trust fund would be retained in the budget totals as it is now, with its reserve balances building up. But a new *"Social Security Integrity and Debt Reduction Fund"* would be created. Starting in 1993 with a 3-year phase-in, an amount equal to the projected annual social security surplus would be paid each year into the new fund and would count as an outlay in the budget. The budget would have to be balanced *including* this outlay. The new fund would use its annual receipts to retire outstanding publicly held debt.

This proposal has several useful practical consequences:

- The social security trust fund would be protected and would not be a victim of raids on the reserves, which would build up exactly as under present law for the protection of future retirees.
- The national debt held by the public (i.e., outside the government) would be reduced by substantial amounts each year, with favorable effects on interest rates, investment and the future capacity to fund social security obligations.
- The total budget each year would be balanced. There would be no "surplus" to create a temptation for additional spending.

FUNDAMENTAL CHANGE—AMENDING THE CONSTITUTION

Balanced Budget Amendment.—Changes in the constitution should never be proposed lightly. But several developments of recent years suggest that only a change in the constitution to require an annually balanced budget would guarantee the kind of fiscal discipline that the well-being of the economy demands.

- The Federal Government has had only one balanced budget in the last 30 years. Earlier in our history there was an unwritten law that the annual budget should be balanced except in time of war or depression. That law is no longer honored, and only a change in the constitution is likely to assure a return to habitually balanced Federal budgets.
- Recent research in the economic discipline known as "public choice" has demonstrated the imbalance that exists in modern democracies between the forces demanding higher spending for particular purposes and the general taxpayer interest in spending restraint. This imbalance leads to ever-higher spending and chronic deficits.
- While the Gramm-Rudman-Hollings law has been useful in bringing greater fiscal discipline, it has clearly not yet achieved its statutory goals. In every year since enactment, the deficit has been higher than the target established in the law.

A balanced budget constitutional amendment would help to remedy the problem. It should include safeguards against achieving the balance through higher taxes. Because such an amendment would halt the steady build-up of the national debt, it would protect the interest of future generations, who are not now able to represent themselves.

Line-Item Veto.—This essential tool is available to the Governors of more than 40 States, and there have been no serious complaints that it unduly increases executive power at the expense of the legislature. As noted above in the discussion of enhanced rescission authority, the President, as representative of the general interest, should have the power to strike from legislation provisions that reflect only narrow local or special interests, especially in an era where the pressures for higher spending have produced a long string of deficits in the budget.

To be fully effective the line-item veto should not be limited to appropriations bills but should also apply to provisions of authorizing bills that create entitlement or other mandatory spending, and to revenue bills. At present about 47 percent of total spending is mandatory (not counting an additional 15 percent for interest, which, of course, would always have to be paid).

As with any other veto, a veto by the President of an item in a spending or revenue bill would be subject to override by a two-thirds vote in each house of Congress. The available evidence suggests that the public strongly favors granting the President line-item veto authority. The time has come to amend the constitution and achieve this change.

VII.B. RESTORING A BASIS FOR CONFIDENCE

REDUCING INVESTMENT IN LOW-RETURN PROGRAMS

Total budget authority for domestic discretionary programs, which are defined as those controlled through the annual appropriations process, is proposed to increase from $160.5 billion in 1990 to $167.4 billion in 1991. Outlays are estimated to increase from $184.2 billion in 1990 to $194.4 billion in 1991. These changes are the net result of many proposed increases and decreases. This section discusses significant reductions in domestic discretionary programs except for proposed reductions in credit programs, which are discussed above in "Acknowledging Inherited Claims." Proposed increases and decreases in defense and international affairs programs are discussed above in "Preserving National Security and Advancing America's Interests Abroad." Proposed increases and decreases in mandatory programs are discussed above in "Reforming Mandatory Programs."

REDUCTIONS DUE TO NON-RECURRING EVENTS

For a number of domestic discretionary programs, the budget authority proposed for 1991 is below the 1990 level because the 1990 level includes funds for events or payments that are not expected to occur in 1991. These include funding in 1990 for the decennial census, disaster assistance related to the California earthquake, the partial or full payment in 1990 to settle various Indian land and water rights claims, and restitution payments to Alaskan Natives.

For the Bureau of Indian Affairs, funding is lower primarily due to the one time payment in 1990 to convert contracts awarded to tribes from a fiscal year to a calendar year basis. Excluding the contract conversion funding, the 1991 request represents a $20 million increase in funding over the 1990 enacted level. In addition, adoption of the President's proposal to expand Federal prison construction to reduce severe prison overcrowding increased 1990 budget authority by about $1 billion above normal levels. The increase, in combination with the 1991 budget request, will reduce prison overcrowding to acceptable and manageable levels. The 1991 budget proposes a more normal level of activity.

New budget authority for the Strategic Petroleum Reserve decreases in 1991, with no reduction in petroleum acquired, because of a one-time earmark in 1990 for this account of $120 million of receipts from the Naval Petroleum Reserve. These funds will not be spent in 1990, because the additional receipts will not be realized until the end of the fiscal year. They will be available to finance oil purchases in 1991, thereby reducing the need for new budget authority in that year.

The budget also includes an apparent reduction of $99 million in energy supply R&D, which actually represents a shift of environmental restoration and waste management funds to a new account in 1991. After adjusting for this shift, the 1991 request of $2.1 billion is actually an increase of $154 million above the 1990 level.

OTHER SIGNIFICANT PROPOSED REDUCTIONS

Mass transit.—Discretionary budget authority for mass transit programs is proposed to be reduced to $1.2 billion, $751 million below the 1990 level. Operating subsidies for urbanized areas with population over one million are proposed to be eliminated. These subsidies constitute less than 6 percent of the operating budgets of the affected areas. In addition, funding proposed for construction of the Washington Metrorail is reduced to $38 million, a $47 million reduction from the 1990 level. The Federal Government has met its commitment to help finance 89 miles of Metrorail, and no further rail capital contributions are warranted.

Transportation passenger subsidies programs.—The 1991 budget proposes to terminate or phase down transportation related passenger subsidy programs. Proposed for termination are grants to Amtrak, which receives a Federal subsidy to cover operating losses, capital costs, and other expenses. While Amtrak has made significant progress in recent years in reducing costs and increasing revenues, it continues to run annual deficits of approximately $600 million. The Administration will work with Congress, Amtrak, and other interested public and private parties to determine how best to obtain needed capital from the private sector and make Amtrak services more cost-effective. In addition, a phase down is proposed for subsidies to air carriers under the essential air service program, from $31 million in 1990 to $24 million in 1991. The number of people benefiting from the program is extremely small and the subsidies per passenger are substantial.

New subsidized housing construction.—The Administration's proposal to substitute rental housing assistance for very-low-income families in place of new construction reduces 1991 budget authority by about $600 million below the 1990 level with no reduction in the number of new low-income families assisted. Public housing construction costs at least twice as much as rental assistance, whether it is in the form of rental certificates or housing vouchers. By emphasizing more cost-efficient low-income housing, the proposed 1991 level would subsidize about 4 percent more households (about 82,000) than in 1990 at less cost.

Sewage treatment plant construction grants.—More than $52 billion has been spent by the Federal Government to build municipal sewage treatment plants, far exceeding the $18 billion estimated in the Clean Water Act of 1972. Over 90 percent of the treated sewage flow in America is now treated at the secondary level. Since the program has largely accomplished its objectives, Congress agreed to phase out the program by the end of 1994, with Federal funds in the interim used to capitalize State revolving funds, thus allowing them to have the ongoing ability to make needed sewage treatment investments. While the budget proposes to reduce funding by $349 million below the 1990 level to continue this phaseout, the request reflects a slower phaseout than proposed in previous years, to allow adequate capitalization of the new State revolving funds. The request of $1.6 billion is $400 million above the Administration's 1990 request of $1.2 billion.

Duplicative student aid and other education programs.—The Department of Education operates over 200 programs. No funding is proposed in 1991 for 14 programs, and significantly reduced funding is proposed for seven additional programs. Two student aid programs, funded in 1990 at a total of $194 million, unnecessarily duplicate aid to be provided in 1991 under other programs funded at a $9.4 billion level. No funds are requested for grants to public libraries, funded at $83 million in 1990, because the principal purpose of this Federal aid, to increase access to public library services, has long since been achieved. The request for impact aid "b" payments is reduced from $124 million in 1990 to $25 million in 1991 to eliminate payments to schools for federally connected children who live in private housing and who pose little financial burden to the district. Funding is preserved for children from low-rent housing projects, whose families are poor. The budget proposes phasing down the program of low interest, long-term loans for general college facilities from $30 million in 1990 to $5 million in 1991. Other programs proposed for termination or reduction are small demonstration programs that have long since achieved their purpose, duplicate larger programs, or are low priority.

Grants to States for special services.—The Administration proposes to discontinue community services block grants (CSBG) and maintain and expand grants to States for special services, which States could use to fund services to homeless people. Proposed 1991 funding is $42 million, $347 million below the 1990 level. Special McKinney Act services for homeless people, which are currently funded within the CSBG program, would be funded at 192 percent of the 1990 level under the Administration's request. Community action agencies (CAAs), provide services on a reimbursable basis, as do other providers. CSBG provides CAAs with less than 13 percent of their operating budgets. The Administration proposes to fund CAA administrative costs through allocations included in the appropriations for the

various Federal programs that are partially administered by CAAs.

Low-income home energy assistance (LIHEAP).—The Administration proposes funding of nearly $1.1 billion for LIHEAP in 1991, $343 million below the 1990 level. Now that fuel prices have moderated, despite a temporary surge of heating oil prices in late 1989, the needs of low-income households should be met increasingly through general purpose income maintenance programs and less by a program specializing in energy assistance. Moderating fuel prices have enabled indexed entitlements to catch up with fuel prices. For example, since 1982, social security and supplemental security income benefits have increased 37 percent, yet weighted fuel prices are at the 1982 level. In addition some Federal programs provide direct assistance for housing and utility costs. The Department of Housing and Urban Development, for example, provides housing and utility assistance to over 4 million low income households, and open-ended Federal matching is available to States who wish to provide heating supplements to the 3.8 million households receiving aid to families with dependent children. The food stamp program also provides indirect assistance; households with disproportionately high energy and other shelter costs receive an estimated $1.5 billion in additional food stamps.

Reducing direct expenditures by the Federal Government in strictly local economic development.—The Administration proposes to terminate the Economic Development Administration, funding only close-out costs in 1991, and to reduce funding for the Appalachian Regional Commission and the Neighborhood Reinvestment Corporation. The 1991 request for these three programs is $95 million, a $294 million reduction from the amounts appropriated in 1990. Decisions to undertake economic development projects with only local benefits should be made and paid for by private investors or State and local governments. The goals of these programs can be better met at the Federal level through the Administration's national policies of fostering economic expansion and job creation; and, in the case of highly distressed areas, through incentives such as those in the Administration's Enterprise Zone proposal.

Highway demonstration and other highway projects.—The 1991 budget proposes no appropriation for highway demonstration projects and other special interest highway projects. Congress appropriated $236 million in 1990 for these projects. Demonstration projects were originally intended to demonstrate new highway construction techniques, but Congress has increasingly used them to fund locally-oriented projects in specific States or districts. The Administration believes that States should decide which projects should be funded.

Reduction in Postal rates for Government mail.—Government mail is relatively inexpensive for the Postal Service to collect, sort, and deliver. The budget proposes to recognize the Government's efficiency in preparing mail by establishing a separate cost-based Government mail subclass. This would reduce the Federal Government's postage costs, saving $220 million per year.

Fossil energy research and development (R&D).—Budget authority of $202 million is proposed for fossil energy research and development. Funding requested for the oil and gas R&D activities within the account is essentially at the 1990 appropriations level but with increased emphasis on cost-shared geosciences R&D with industry and university consortia. The Administration has supported sharp increases in the clean coal technology program, with outlays increasing in 1991 by $118 million, or 78 percent, to a total of $270 million. Because coal technologies are moving into commercial readiness, there is less need for some of the activities formerly funded in the fossil energy R&D coal program. Accordingly, the budget proposes reductions in coal-related R&D ($165 million), management overhead ($36 million), and miscellaneous activities ($5 million). In addition, savings from completion of current construction projects ($10 million) are expected.

Energy conservation.—The States have received more than $3.4 billion in oil overcharge funds from the settlement of cases involving violation of price controls that existed in past years. Of this total, $2.6 billion has been allocated for the same energy conservation activities that are funded by Department of Energy grants and for low-income energy assistance payments. By late 1989, only an estimated

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$925 million of the $3.4 billion in overcharge funds available to the States had been expended. Thus, the budget proposes only $15 million for experimental conservation grant activities, designed to encourage States to develop more innovative energy conservation programs. This account also supports a broad range of conservation technology research and development activities, which would be increased above the 1990 enacted level. Nevertheless, because of the excess remaining oil overcharge funds, grants to States are reduced. Thus the account shows a reduction of $185 million below 1990, to $183 million.

Housing for the elderly or handicapped fund.—Budget authority proposed for the housing for the elderly or handicapped fund is $228 million, $185 million below the 1990 level. Although the Administration is proposing less funding for these direct loans, total new units provided would remain at about the 1990 level of 7,689 units. The budget proposes to help meet elderly and handicapped housing needs by allowing non-profit groups to lease existing housing units to qualified individuals rather than rely solely on new construction. Leased housing provides greater flexibility than new construction at less cost, and would account for 43 percent of the total 7,000 new units recommended for elderly and handicapped housing in 1991.

Community development block grants.—The Administration proposes to reduce budget authority for community development block grants in 1991 to $2.8 billion, $163 million below the 1990 level. About half of this decrease is in the Secretary's discretionary fund, where Congress funded many special interest projects in 1990. The Administration proposes to better target the slightly reduced grants toward those most in need.

Health professions training subsidies.—Federal health professions training subsidies provided over the past 30 years have increased the supply of all health care professionals. The Administration's request for 1991 complements State, local and private financing of health professions training for disadvantaged students. Approximately 30 traditional categorical health professions grants and loans ($238 million in 1990 budget authority including Health Education Assistance Loans default payments), would be replaced with a mixture of grants and loans targeted to disadvantaged health professions students ($75 million in 1991 budget authority). Targeting Federal assistance to disadvantaged health professions students complements increases in health programs for low-income persons, such as efforts to reduce infant mortality, discussed in "Reforming Mandatory Programs."

National Park Service (NPS) construction.—The budget proposes to increase funding by $16 million over the 1990 level for rehabilitation construction projects whose primary purpose is to protect natural resources or to enhance recreation opportunities. This increase, from $29 million to $45 million, is included in the President's "America the Beautiful" initiative. At the same time, the Administration is not requesting funds for various low-priority new construction projects added by Congress last year. As a result, total funding proposed for the construction account is reduced from $248 million in 1990 to $100 million in 1991.

Customs Service and Coast Guard major equipment purchases.—Funding proposed for both the Customs Service's operation and maintenance and the Coast Guard's acquisition, construction and improvements account is below the 1990 enacted level because 1990 purchases of equipment are not repeated in 1991. For example, the 1990 appropriations for Customs Service included $104 million to purchase and refurbish aircraft. Similarly, the Coast Guard's capital acquisition budget is slightly below the 1990 level because purchases of aviation assets in 1990 are not necessary for 1991. Additional operating funds are proposed for those new assets available in 1991.

Railroad Retirement Board subsidies.—Rail industry pensions are partly funded by general fund subsidies, called windfall benefits, that will amount to $340 million in 1990. The windfall appropriation subsidizes industry pension costs, which should be borne by the rail sector. The Administration proposes to decrease the general fund appropriation for windfall benefits by 25 percent, and instead use rail industry pension funds to finance the difference. No benefit reductions are involved.

Rehabilitation loan fund.—The budget proposes to terminate the rehabilitation loan fund

in 1991 and to transfer the unobligated balance available to the assisted housing account in support of the HOPE initiative. The fund has $87 million in budget authority in 1990. Termination is proposed because the program duplicates funding provided by other more efficient rehabilitation programs.

Payment to the Postal Service fund.—The budget proposes to reform the reduced postage rate program for charitable and benevolent organizations, which is financed by subsidies from the general taxpayer. These reforms would reduce the subsidy by $80 million by terminating abusive practices such as promoting commercial activities through taxpayer subsidized mailings. This proposal will implement reforms recommended in a recent Postal Rate Commission report to Congress.

Justice Assistance.—Although justice-related activities are given a high priority in the 1991 budget, reductions are proposed in three lower priority programs, saving $73 million in budget authority. They include the Office of Justice Programs, the Immigration Emergency fund of the Department of Justice, and the State Justice Institute. These programs have served their original purposes, largely duplicate other programs, or can be performed by States using their resources.

Cooperative State Research Service and Extension Service.—The Administration is committed to expanding the competitive research program in the Department of Agriculture (USDA) and proposes a new $100 million initiative in the 1991 budget. In past years many of the research dollars provided to the Cooperative State Research Service and the Extension Service have been earmarked by Congress for low-priority, special interest purposes. The Administration does not repropose these earmarked funds.

Rental rehabilitation grants.—Budget authority of $70 million is proposed for this grant program in 1991, a reduction of $58 million from the 1990 level. This reduction is consistent with efforts to provide State and local governments with more flexibility in using Federal assistance for both rental and homeowner housing rehabilitation. In addition to $70 million in budget authority for rental rehabilitation grants, the Administration is requesting $2.8 billion for community development block grants and $250 million for a new HOPE grants program. HOPE grants will help fund rehabilitation of rental units being converted to ownership.

Bureau of Indian Affairs (BIA) construction.—The Administration proposes to reduce funding for BIA construction to $103 million in 1991, $57 million below the 1990 enacted level. No funding is included for constructing low-priority new facilities and uneconomic irrigation projects. Such construction does not address the backlog of rehabilitation work that needs to be performed on existing facilities. The 1991 budget also does not include repayment of funding ($23 million) to support fire fighting activities transferred to the operating account. All funding for fighting forest fires is requested in the fire fighting account under the Bureau of Land Management.

Railroad assistance programs.— In 1990 Congress appropriated $50 million for various railroad assistance programs or projects, including the Northeast Corridor Improvement Program (NECIP) and local rail service assistance program (LRSAP) grants. The budget proposes to terminate funding for NECIP and LRSAP. At the end of 1985, responsibility for additional construction on the Northeast Corridor was transferred to Amtrak, and the original purpose of the LRSAP, to address the financial crisis afflicting American railroads in the 1970's, no longer exists.

Bureau of Reclamation construction.—The Administration is requesting $609 million in budget authority for Reclamation's construction program in 1991, $43 million below the 1990 enacted level. Funds for several low-priority new starts added by Congress in 1990 are deleted, and no major new construction starts are proposed. In addition, the budget proposes to terminate the uneconomic Garrison Diversion Unit, North Dakota, which would require in excess of $1 billion to complete and entail extensive mitigation of environmental damage. However, the request supports increased funding for high-priority activities, including dam safety work and environmental damage mitigation at existing projects, and continues funding for most currently budgeted water projects on an efficient construction schedule.

Fish and Wildlife Service (FWS) construction.—The 1991 budget fully funds the Fish and Wildlife Service's request for construction, which is $36 million below the 1990 enacted level of $69 million. This proposed level represents a significant increase over the funds requested by the President in 1990. This puts FWS on track toward maintaining its infrastructure. Historically, Congress has increased construction funding primarily for lower priority projects, which are not funded in the 1991 budget.

Abandoned mine land (AML) reclamation grants.—Funding for State AML reclamation grants is usually about $120 million. In 1990 Congress added $30 million to this program, for a total budget authority of $150 million. However several States have not adopted the necessary procedures and practices to enable them to fully obligate Federal funds for reclamation of mining sites. Therefore, high unobligated balances have been carried in this program, negating the need for a higher appropriation level. Budget authority of $117 million is proposed for 1991.

Bureau of Mines operating programs.—The 1991 budget request for mining and materials is $146 million, $32 million below the 1990 appropriated level. Mining and materials research that is long-term or high-risk is funded. In addition, applied research funding is provided for those activities that benefit society but would not be undertaken without Federal support. In 1990 Congress provided funding for many lower priority projects that the 1991 budget does not propose to continue. The 1991 request is also lower because one-time transfers in 1990 are not continued.

Small Business Administration (SBA) salaries and expenses.—The $326 million in budget authority requested for SBA administrative expenses is $19 million below the 1990 enacted level, mainly due to the Administration's proposal to begin eliminating Federal support for small business development centers. Increasing State and private sector support for these entities has reduced the need for continued Federal grant support.

Public telecommunications facilities program (PTFP).—PTFP was created in 1962 to provide Federal assistance for the construction of broadcast facilities in an effort to increase access to public radio and television. Since it has achieved its purpose, the Administration proposes to terminate this program in 1991, saving $20 million in budget authority. Over 95 percent of the United States currently receives public broadcast programming, and the program's grants are now used for facility upgrades rather than to extend coverage.

Interstate Commerce Commission (ICC).—The ICC has regulated portions of the interstate transportation industries for the past century. The budget proposes to terminate the ICC because legislative changes since 1980 have largely deregulated many of these industries and have significantly reduced the ICC's jurisdiction and workload. The Administration is proposing to complete motor carrier deregulation and to transfer regulatory authority over railroads to the Departments of Transportation and Justice. Savings of $13 million are expected from this proposal.

Congregate services program.—The Administration proposes to terminate the congregate services program, which is funded at $6 million in 1990. In its place the Administration proposes a $44 million demonstration that will link housing vouchers and supportive services for the frail elderly. This proposal is discussed further in Part III-H.

SIGNIFICANT PROPOSED REDUCTIONS IN DOMESTIC DISCRETIONARY PROGRAMS

(In millions of dollars)

(In descending order of budget authority savings)

	Budget Authority			Outlays		
	1990	1991	Change	1990	1991	Change
Funding for one-time events:						
Federal prison construction	1,397	374	−1,023	206	863	+657
Federal-aid highways (earthquake)	1,000	—	−1,000	113	125	+12
Decennial census	1,235	236	−999	1,397	289	−1,108
Federal Emergency Managment Agency disaster relief	1,198	270	−928	1,240	1,165	−75
Small Business Administration disaster loan fund	393	—	−393	658	—	−658
Funds appropriated to the President for unanticpated needs for natural disasters	230	—	−230	72	59	−13
SPR petroleum	436	228	−208	282	392	+110
Miscellaneous payments to Indians	192	52	−140	187	58	−129
Energy supply R&D	2,184	2,085	−99	2,161	2,129	−32
Bureau of Indian Affairs operating programs	724	720	−4	705	701	−4
Other significant proposed reductions:						
Rural Electrification Administration	65	−2,028	−2,093	66	−137	−203
Farmers Home Administration	1,023	−622	−1,645	863	−697	−1,560
Mass Transit	1,911	1,160	−751	3,498	3,353	−145
Transportation passenger subsidy programs	636	24	−612	609	91	−518
New subsidized housing construction	579	—	−579	1,237	1,434	+197
Sewage treatment plant construction grants	1,948	1,600	−349	2,363	2,339	−24
Grants to States for special services	389	42	−347	390	150	−240
Low-income home energy assistance	1,393	1,050	−343	1,372	1,079	−293
Reducing the role of the Federal Government in local economic development	389	95	−294	342	358	+16
Highway demonstration and other highway projects	236	—	−236	47	76	+29
Reduction in Postal rates for government mail	—	−220	−220	—	−220	−220
Fossil energy research and development	417	202	−215	384	324	−60
Energy conservation grants	368	183	−185	341	326	−15
Housing for the elderly or handicapped fund	413	228	−185	392	414	+22
Community development block grants	2,915	2,752	−163	2,995	3,046	+51
Health professions training subsidies	238	75	−163	214	145	−69
Federal Crop Insurance Corporation administrative expenses	223	73	−150	184	142	−42
National Park Service construction	248	100	−148	103	139	+36
Perkins loans capital contributions and State student incentive grants	194	—	−194	234	159	−76
Customs Service and Coast Guard major equipment purchases	674	563	−111	568	587	+19
Railroad Retirement Board subsidies	340	241	−99	340	241	−99
Impact aid "b" payments	124	25	−99	128	46	−82
Other small education programs	101	10	−91	84	96	+12
Rehabilitation loan fund	—	−87	−87	5	−46	−51
Public library grants	83	—	−83	83	49	−34
Payment to the Postal Service fund	453	373	−80	453	373	−80

SIGNIFICANT PROPOSED REDUCTIONS IN DOMESTIC DISCRETIONARY PROGRAMS—Continued

(In millions of dollars)

(In descending order of budget authority savings)

	Budget Authority			Outlays		
	1990	1991	Change	1990	1991	Change
Justice assistance	661	588	−73	411	497	+86
Cooperative State Research Service and Extension Service	752	693	−59	758	714	−44
Rental rehabilitation grants	128	70	−58	27	77	+50
Bureau of Indian Affairs construction	160	103	−57	94	104	+10
Business loan and investment fund	160	104	−56	25	63	38
Railroad assistance programs	50	—	−50	79	70	−9
Bureau of Reclamation construction	653	609	−43	665	616	−49
Fish and Wildlife Service construction	69	33	−36	41	54	+13
Abandoned mine land reclamation grants	150	117	−33	150	141	−9
Bureau of Mines operating programs	178	146	−32	172	156	−16
College housing and academic facilities loans	30	5	−25	—	—	—
Public telecommunications facilites	20	—	−20	24	20	−4
Small Business Administration salaries and expenses	345	326	−19	342	330	−12
Interstate Commerce Commission	44	31	−13	44	28	−16
Congregate services program	6	—	−6	5	5	—
Total, Significant proposed reductions in discretionary programs	27,849	12,695	−15,154	27,239	22,596	−4,644

STRENGTHENING MANAGEMENT OVERSIGHT

The Federal Government spends 21 percent of gross national product—more than a trillion dollars, and more than all countries' economies except the United States, the U.S.S.R., and Japan. In 1989, the Government processed 188 million tax returns, collected $991 billion in revenues, and paid out $227 billion to just over 39 million social security beneficiaries. Its financial systems managed $2.4 trillion in cash flow and processed more than 900 million payments to five million civilian and military personnel; Federal procurement systems provided for approximately 22 million transactions worth roughly $200 billion.

The scale of the Federal Government makes its management difficult and complex. There are diseconomies of scale. At the same time, American citizens have the right to expect that their Government will not tolerate recurrent scandals in housing programs and procurement for the national defense. They have the right to better assurance that Federal activities will not pollute the neighborhoods in which they operate or the ecosystem itself. They have the right to expect that their hard earned tax dollars will go to broad national purposes and not to those who can muscle legislators or officials for special breaks. Americans also have the right to first rate service delivery, systems to provide for Government efficiency and integrity, and a skilled and well motivated Federal workforce. Better provision for these rights and expectations will improve the basis for confidence in democratic institutions.

A review of management problems over the years underscores the areas of especially high risk: where there are large numbers of transactions and cash flows; where delegations are broad and inadequately supervised; where there is excessively decentralized program execution; where information and systems are inadequate for decision-making and oversight; where there are programs which, by their very nature, risk physical and environmental damage; where there are programs in startup or targeted for termination; and where there is inadequate attention to management by the political leadership.

The systems which should provide appropriate oversight and control have, for a variety of reasons, suffered from an ironic combination of under-attention (producing laxity) and over-attention (producing confused accountability). Short-term budget and deficit reduction objectives have tended to override the longer term consistency essential to real management improvement. In addition, obstacles to multi-year procurement and longer term investment tend to favor temporary "quick fixes" over longer term solutions.

At the same time, systems without technically qualified and highly motivated people to design and operate them are of little help. As the Civil Service 2000 and the National Commission on the Public Service reports affirm, there are needs to provide better pay (particularly in certain areas) and to link pay and grade to performance so as to attract and retain in Federal Service the Government's appropriate share of highly qualified people.

INVESTMENTS IN MANAGEMENT IMPROVEMENT

The budget requests $22.1 billion in budget authority and $19.9 billion in outlays, $2.9 billion and $2.4 billion, respectively, more than in 1990—to improve service delivery, management integrity, management and control systems, and personnel management.

INVESTMENTS IN MANAGEMENT IMPROVEMENT

(In millions of dollars)

	1990 Enacted	1991 Proposed	1990-91 Increase
Net Total[1]			
Budget authority	19,237	22,098	2,861
Outlays	17,471	19,860	2,389
Selected Improvements in Service Delivery:			
Budget authority	17,191	19,442	2,251
Outlays	16,155	18,076	1,921
Assuring Greater Integrity:			
Budget authority	740	813	73
Outlays	703	772	69
Improved Management and Control Systems:			
Budget authority	2,311	2,770	459
Outlays	1,618	1,939	321
Pay Reform:			
Budget authority	—	328	328
Outlays	—	328	328

[1] Budget authority and outlays totals for 1990 and 1991 adjusted for duplication of items included under Service Delivery and Systems.

Selected Improvements in Service Delivery

The budget requests $19.4 billion for key Federal services, $2.3 billion more than in 1990. Included are improved Internal Revenue Service, social security and civil aviation services, and improved economic statistics programs.

Internal Revenue Service.—Roughly 113 million Americans pay taxes. The budget requests $6.1 billion and over 120,000 staff in 1991 for the Internal Revenue Service (IRS), $635 million more than in 1990. These amounts will help the IRS to ensure timeliness in processing tax returns and issuing refunds, as well as provide improved assistance and service to taxpayers.

Social Security.—Over 39 million Americans receive Social Security payments. The budget requests $4.2 billion for operating the Social Security Administration, $330 million more than in 1990. These amounts will help the Social Security Administration to continue replacing and upgrading obsolete computer systems and enhance the level of service assistance provided to beneficiaries by claims representatives.

Civil Aviation.—Over 53 million Americans use commercial air services. The budget requests $8.6 billion in budget authority for the Federal Aviation Administration (FAA), $1.2 billion more than in 1990. The budget will allow the FAA to increase the number of air traffic controllers, safety inspectors, and security personnel and procure equipment to modernize the National Airspace system.

Improved Economic Statistics.—Improved economic statistics will assist both business and government in making sound business and economic policy decisions. Consistent with the Presidentially-approved recommendations of the Economic Policy Council, the budget requests $507 million for selected Federal economic statistics programs, $52 million more than in 1990. These increases are designed to improve economic statistics programs in the Economic Research Service and the National Agricultural Statistics Service of the Department of Agriculture, the Bureau of Economic Analysis and the Bureau of the Census of the Department of Commerce, and the Bureau of Labor Statistics of the Department of Labor. While a range of economic statistics programs are affected, specific goals include improved estimates of Gross National Product, service sector activity, and international transactions.

Assuring Greater Integrity

Rebuilding the Public Trust.—In one of the most obvious areas of high risk, the Administration proposed, and Congress enacted, the HUD Reform Act of 1989. Under the Act, the Department of Housing and Urban Development will allocate housing funds through an open process based either on "fair sharing" or "competition," as well as public notification of funding decisions. The Act places strict limitations on HUD's use of discretionary funds and gives HUD the authority to impose civil penalties to enforce program compliance. The Act also provides HUD with a statutorily authorized Chief Financial Officer as well as a Comptroller of the Federal Housing Administration. The budget requests an increase of $76 million, 10 percent more than 1990, and 670 additional staff who will assist in implementing this legislation. The budget also requests an increase of $32 million for HUD automated data systems, including financial management systems, 44 percent more than in 1990. Finally, the HUD Inspector General will receive an increase of $8 million to improve monitoring and review of HUD programs, including the use and development of improved data systems and additional audits.

Strengthening the Savings and Loan Industry.—The Administration moved quickly in early February 1989 to respond to the crisis in the savings and loan industry and the exhaustion of the Federal Savings and Loan Insurance Corporation's funds. The Administration proposed comprehensive reform, and Congress enacted the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989 in August. The legislation imposes a number of new requirements on the industry and its regulators to assure the safety and soundness of nearly $1 trillion of insured deposits; it also establishes a Resolution Trust Corporation (RTC) to handle the merger, sale or liquidation of 500–600 insolvent S&Ls (using $50 billion provided in the legislation). The legislation creates an Oversight Board—chaired by the Secretary of the Treasury and including the Sec-

retary of HUD and the Chairman of the Federal Reserve—to ensure that Federal interests are protected.

Cleaning up Hazardous Waste Dumps.—The Environmental Protection Agency will in 1990 increase enforcement and tighten oversight of the Superfund toxic waste response program. EPA will impose a 120-day deadline on negotiations with polluters and exercise its authority to order cleanup if settlement is not reached. Increased enforcement has already resulted in $1 billion in polluter-financed clean-up activities for 1989, nearly double that in 1988. The budget provides for a $210 million increase in 1991 to clean up additional hazardous waste sites. This investment builds on the actions of the Administration to provide 480 additional staff at the Department of Justice and EPA (a nearly 40 percent increase) to strengthen Superfund enforcement in 1990.

Improving the Integrity of Student Aid Programs.—To reduce guaranteed student loan defaults and other losses from inadequate program management, the Department of Education is pursuing a three-pronged strategy of strengthened regulations, administrative actions, and changes in law. New regulations give the Secretary, beginning in 1991, the authority to take "limitation, suspension and termination" actions against schools with the highest default rates (generally schools with gross default rates of over 60 percent). The Administration has also proposed legislation to tighten "ability to benefit" criteria, authorize guarantee agencies to garnish wages in the event of default (up to 10 percent of pay), and prohibit schools from recruiting with commissioned sales representatives. Most importantly, the Department is conducting increased monitoring and compliance reviews to identify poorly run school aid programs in order to prevent defaults and other losses from occurring. Added support from the Inspector General should also help address these problems.

Improving Pension Oversight.—The Administration is concerned about the current level and depth of Federal oversight of private pension plans through the Pension and Welfare Benefits Administration. It is critical that pension plan assets are properly administered and protected so that promised benefits can be paid to retirees. The budget therefore requests an increase of 133 investigative and legal support staff and an additional $9.3 million in the Department of Labor to strengthen oversight. The additional staff will enable the Department to increase reviews and investigations by more than 50 percent and reporting enforcement investigations by 80 percent.

The Inspectors General.—The President's Council on Integrity and Efficiency reports that in 1988, Inspectors General enabled the Government to recover or put to better use over $21 billion in Federal funds and they were responsible for nearly 4,300 successful prosecutions and 2,500 debarment and suspension actions against persons or firms doing business with the Government. The budget includes $715 million and 9,892 staff for the Inspectors General of the 14 Cabinet Departments and 44 independent agencies—$70 million and 437 staff more than in 1990.

Over the two-year period 1990 to 1991, the budget specifically adds 67 staff and $6.9 million for the Department of Energy to deal with procurement fraud; increase environmental audits; audit contract pre-awards, incurred costs and closeouts; and increase investigations and analysis. It also includes resources for additional audit coverage of international program activities at the Department of Agriculture; increased audit and investigation coverage of the Pell Grant, education for the handicapped, and student loan programs at the Department of Education; increased auditing and investigative work at the Department of the Interior; enhanced ADP capabilities at the Department of the Treasury; additional personnel to provide adequate coverage of the Superfund and underground storage tank programs at EPA; and additional audits of contractors at NASA.

Internal Controls and Audit Follow-up.—The Federal Managers Financial Integrity Act (FMFIA) requires annual reports from agency heads to the President and Congress on material weaknesses in internal controls over agency operations, and the Inspector General Act Amendments of 1988 require semi-annual reports of follow-up on audit findings. While the 1988 internal control reports showed 383 material weaknesses outstanding out of 2,199 reported since 1983, many agency heads had, in fact, paid little attention to these reports.

For example, some of the problems at HUD had surfaced as early as 1983, but were evidently not attended to.

The budget requests $3 million and 41 staff to establish or augment offices better to coordinate and manage FMFIA internal control and audit follow-up at the Departments of Agriculture (Farmers Home Administration), Housing and Urban Development, Interior and Veterans Affairs, and at NASA. Further, consistent with recommendations of the General Accounting Office, OMB will in 1990 issue instructions to implement the recommendations of the Internal Control Interagency Coordination Council (ICICC) to link internal control review and reporting to the budget; promote senior management involvement in the internal control process; identify in annual reports agency actions to correct weaknesses; and validate the accomplishment and effectiveness of corrective actions.

OMB has identified with the agencies more than 100 high risk areas, and a central tracking system has been established to monitor corrective actions. Deputy Secretaries and Deputy Administrators have been told that it is their personal responsibility to ensure that management integrity is maintained and strengthened and that their agencies' progress must be reported regularly to OMB and the White House. OMB is also revising its instructions to agencies to require budget information sufficient to ensure necessary resources to correct high risk weaknesses.

Improvements in Automated Systems Integrity.—The Administration will also continue to emphasize the security and integrity of automated information systems. The Computer Security Act of 1987 called for a comprehensive training and awareness program for all employees involved in Federal computer systems, a process for planning adequate security in sensitive computer systems, and revitalized standards for Federal computer security. In 1989, agencies initiated awareness and training programs and identified and prepared security plans for more than 27,000 sensitive computer systems. The budget requests a doubling of resources for the Federal computer security standards program.

Improved Management and Control Systems

Presidential Priority Systems.—The budget requests nearly $2 billion to design, acquire, and operate program information systems which the Administration has established as Presidential Priority Systems, $402 million more than in 1990. These systems include the Social Security Administration's Information Technology System, Patent and Trademark automation, the Department of the Treasury's tax system modernization, government-wide financial management systems, the General Services Administration's FTS 2000 system, systems under the Department of Transportation's National Airspace Plan, the Integrated Border Information System, the Department of Commerce's Advanced Weather System, and the Securities and Exchange Commission's EDGAR System.

Management Support Systems.—The budget requests $558 million for management support systems enhancement, $54 million more than in 1990. These funds will permit continued improvement of financial systems throughout the government so as to provide more accurate and timely information to agency managers and central agencies. The funds will also assist linking these systems electronically in a government-wide network. Initiatives include extending standardization of data and systems; providing systems to improve the management and control of Federal property; and providing more efficient and effective financial support services through a Federal finance center network.

Credit Management Systems.—The budget requests $860 million for credit management, an increase of $58 million over 1990. Agencies have for some years been encouraged to emphasize guarantees over direct loans to meet program goals, and between 1984 and 1989, the percentage of the Government's credit portfolio attributable to guarantees increased from 63 percent to 74 percent and from $387 billion to $588 billion in aggregate. If the Federal government is to achieve expected administrative savings and reduced defaults from this change in emphasis, effective management controls must be implemented.

In response to this challenge, the Office of Management and Budget and the Department

of the Treasury have upgraded the effort to implement the comprehensive credit management and debt collection program known as the "Nine-Point Program." Agencies were required to comply, to the extent permitted by law, in 1989. Future emphasis will be on improved loan origination and servicing, and improved management control of guaranteed loans. The Administration is currently tightening standards for lender eligibility and program operations. For example, it will be required in the future that participating lenders be certified as eligible for making Federal guaranteed loans and that credit agencies review performance and recertify lenders biennially.

Pay Reform

The budget allows agencies to use up to $328 million to begin Federal pay reform. The Administration will seek legislation to authorize geographic differentials for all personnel of up to 8 percent in New York, Los Angeles and San Francisco; 5 percent increases in starting salaries nationwide at GS-5 and GS-7 levels for college entry-level occupations; the extension of current authority to hire at pay levels above the minimum step to all grades; and bonuses to recruit, retain or relocate critical skill workers.

The budget will, at the same time, continue pay demonstrations such as in the Federal Aviation Administration to demonstrate the effects of pay on retention at high volume facilities which have experienced staffing difficulties; in the Defense Department at China Lake, California, to improve the recruitment and retention of technical personnel; and in the National Institute of Standards and Technology to attract and retain top scientists through rewards for performance.

With some exceptions, the current General Schedule pay system does not allow differentials for different living costs and comparable wages in different areas. While the Intelligence Authorization Act of 1989 established a special provision to permit a 25 percent differential and relocation allowance for transferrable FBI employees stationed in New York, the problem of recruiting good people to the Federal Government extends beyond the FBI and beyond New York. In addition, large entry-level pay disparities between the Federal and non-Federal sectors make the Government non-competitive in attracting as qualified a workforce as the public is entitled to. Further, rigidity in the current systems prevents the Government from recruiting, retaining and relocating critical skill workers.

ILLUSTRATIVE SAVINGS FROM MANAGEMENT REFORM

(In millions of dollars)

	1991 Anticipated
Management Reform in Defense	2,300
Improving Identification and Collection of Tax Debt	3,000
Improving Collections of Non-Tax Debt	200

Defense Management Reform

The budget includes 1991 management savings in the Department of Defense's operations of $2.3 billion. These savings will result from implementation of the recommendations in the Defense Management Report, which the President transmitted to Congress in July 1989. Personnel reductions of approximately 8,000 civilians and 8,000 military are expected in 1991 as a result of these reforms. In addition, Defense estimates these savings will increase to an aggregate of $39 billion by 1995.

Most of the recommendations in the Defense Management Report, themselves based on recommendations of the Packard Commission, have been incorporated in the President's Management by Objectives program. They include organizational streamlining, reduced regulatory and reporting guidance, and more flexible civilian personnel policies. Specific reforms reflected in the budget include operational and financial improvements to logistics and supply systems, reductions in consultants, standardization of ADP and accounting systems, and efficiencies in civilian personnel administration. Duplicative functions are slated for streamlining or elimination, and some military support positions are scheduled to be replaced with civilian personnel.

Enhanced Collection of Taxes and Tax Debt

Tax debt currently owed the Government from present and past tax years increased from $59 billion in 1988 to $61 billion in 1989. While this debt represents just over 6 percent of the $991 billion in Federal receipts the Government collected in 1989 (mostly related to tax year 1988), outstanding tax debt is still too high and requires reduction.

To slow the growth in tax debt, the budget therefore includes funding for the first phase of a 3-year tax collection initiative, the overall objective of which is to increase collections by $2.25 billion over the 1991–93 time period. The first phase will generate $759 million in revenues over this interval from 1,050 additional collection personnel to be hired in 1991. Treasury and IRS will develop plans during 1991 to achieve the balance of the 3-year objective through a combination of management improvements, reprogramming, and resource growth.

Funding for the first phase of this accounts receivable tax collection initiative is part of a $191 million budget request in 1991 to increase revenues; this funding is expected to realize a return of $537 million in that year. The funds will be used to expand service center correspondence audits, examinations and information verification, in addition to debt collection initiatives.

The Internal Revenue Service (IRS) also plans to reallocate existing resources so as to provide additional revenues of $2.5 billion in 1991. These management improvements include accelerated closure of tax shelters, expedited closures and settlements of large cases, and better targeting of tax collections involving employee pension plans.

Enhanced Collection of Non-Tax Debt

Delinquent debt owed the Departments of Agriculture, Education, Housing and Urban Development and Veterans Affairs, and the Small Business Administration and other agencies, is projected to increase from $32 billion in 1988 to an estimated $40 billion in 1989.

The budget requests an additional $55 million to accelerate collections, an investment which will impose management controls and realize a return of $200 million in 1991. Additional staff positions are planned for account servicing in the Department of Agriculture's Farmers Home Administration (522) and the Department of Veterans Affairs (300). Over 400 positions have been allocated to HUD field offices to improve portfolio management.

Government-wide initiatives involve more rigorous implementation of the Nine-Point Program (referred to above). This includes prescreening of applicants to ensure that delinquent debtors do not receive new credit, increased referral of delinquent debts to the IRS for offset against any tax refunds due, and increased use of private collection firms and litigation. Legislation is proposed to allow agencies to retain a portion of the collection fees charged delinquent borrowers as an incentive.

NON-BUDGETARY MANAGEMENT INITIATIVES

Federal-State Relations

Federalism Executive Order.—Executive Order No. 12612, "Federalism," was issued in 1987 to "restore the division of governmental responsibilities between the national government and the States that was intended by the framers of the Constitution." In his speech to the National Governors' Association in July 1989, the President personally endorsed the Executive Order. The Order requires "assessments" of proposed policies with significant Federalism impacts. Pursuant to the Order, OMB reviews the assessments to ensure that these policies are consistent with Federalism principles and provide maximum administrative discretion to State and local governments.

Flexibility and Accountability for Education and Training Programs.—At the President's Education Summit with the Governors, held September 27–28, 1989, the participants agreed to seek greater flexibility for States and localities in the use of Federal education and training funds in return for commitments by the States for enhanced accountability. The goal is to shift the focus of Federal, State and local funds and regulations from process to results: i.e., significant and sustained improvement in achievement for all and especially for the disadvantaged, handicapped and unemployed.

Single Administrative Grant Pilot Program.—The National Governors' Association and the Office of Management and Budget are cooperating in a program to test the use of a single administrative grant to reimburse States for the costs of administering the Food Stamp Program, Medicaid, and the Aid to Families with Dependent Children (AFDC) program. This single grant would replace separate administrative grants to each of these programs. A single administrative grant should simplify state accounting, cost allocation, and reporting procedures, and reduce the cost of administering these programs. The concept will be tested in five states beginning in April 1990.

Regulatory Review and Reduced Paperwork

Regulatory Review.—Regulations will continue to be a primary means by which the Federal Government establishes national policy. While some additional regulations will be needed, others will fail to solve, or even exacerbate, the problems they are designed to fix. Executive Order No. 12291 requires agencies, subject to OMB review, to ensure that the benefits of regulation outweigh the costs.

OMB will review over 2,000 draft regulations in the 1990–91 time period. OMB is developing specific guidance to help agencies ensure that their analysis of proposed regulations provides decision-makers with relevant information upon which to base decisions and not simply to justify decisions already made.

Reducing Paperwork.—Americans spent an estimated 1.7 billion hours (or 850,000 work years) in 1989 solely for the purpose of collecting, reporting, and maintaining information in response to Federal requirements. OMB reviews over 3,000 agency paperwork requirements a year with a view to eliminating unnecessary paperwork and improving the use of information.

To understand the concerns of the man-on-the-street and improve channels for public input, the Internal Revenue Service is increasing its testing of new tax forms through taxpayer interviews; these interviews resulted in numerous improvements in tax forms and instructions in 1989. In addition, the Immigration and Naturalization Service is completing a comprehensive review of its information collection activities; during 1990, a plan will be developed to simplify and consolidate over 400 forms and documents with implementation initiated in 1991. Agencies are also now required to disclose on Federal forms the time it is expected it will take to respond, and invite comment on problems directly to OMB. OMB, for its part, is working closely with the Small Business Administration to reduce paperwork burdens on small business.

Most recent paperwork increases have stemmed from legislative requirements over which the Executive branch has had little control. Examples include legislative requirements regarding enforcement of environmental and immigration laws. In order to evaluate paperwork burdens before the Administration's legislative positions are developed, the departments and agencies have been asked to track and report to OMB on major paperwork requirements in proposed legislation.

Procurement Reform

The Federal procurement process continues to wallow in red tape. Only tax reporting and record keeping impose a greater paperwork burden on the public. Detailed specifications for everyday items—33 pages for hammers, 27 pages for bedsprings—favor those few suppliers willing to meet these specialized requirements. Less competition and higher costs result. In addition, influence peddling and "old-boy networks" have undermined public confidence in governmental integrity.

These have been longstanding problems and none will be solved overnight. However, new initiatives are directed at correcting them. Regulatory streamlining reviews by the Department of Defense and OMB's Offices of Federal Procurement Policy and Information and Regulatory Affairs will help eliminate unnecessary and overly-burdensome regulations and paperwork. New legislation is being proposed to require agencies to look first to those commercial products that the market has to offer, giving the Government the benefit of lower costs and greater innovation. And finally, new, rigorous conflict of interest and disclosure rules for consultants and lobbyists will help dismantle the "old boy" network.

Professional Status for the Contracting Workforce.—The Office of Personnel Management (OPM) has designated Federal contracting positions as professional level in accordance with the recommendations of both the Packard Commission and the Defense Management Report. Government contracting officials award roughly $200 billion in Federal procurements each year. Their responsibilities range from off-the-shelf minicomputers to Trident submarines. Since Federal contracting officers face corporate Vice Presidents, it is an anomaly that they have for so many years been denied professional status. In addition, OPM will shortly promulgate new standards to give agencies greater flexibility in hiring into this new contracting profession top flight graduates from the nation's colleges and universities. The country can afford no less.

Cash and Credit Management

Cash.—The Federal Government's annual cash flow of $2.4 trillion dollars requires the use of cost-effective modern technology if it is to be managed well. Currently, the Department of the Treasury estimates that 45 percent of Federal disbursements and 8 percent of collections are made electronically; the 1991 goal is 47 percent and 9 percent, respectively. Treasury and OMB are working with agencies to encourage use of electronic funds transfer/direct deposit, lockboxes, credit cards, debit cards, and preauthorized debits. Pilot programs have been undertaken to demonstrate electronic transfers. In addition, major changes to the Prompt Payment Act have imposed more rigorous limits on agency payment practices: grace periods have been eliminated and, in December 1989, OMB issued a directive which imposes additional penalties on agencies which fail to pay interest on late payments.

Credit.—The Secretary of the Treasury reestablished in October 1989 the Federal Credit Policy Working Group of the Economic Policy Council. The Working Group has been charged with reviewing and developing Federal policy for direct and guaranteed loan portfolios, Government Sponsored Enterprises, loan asset sales, and credit subsidy cost identification. The group is chaired by OMB and includes the program assistant secretaries from loan-making departments and agencies. The Working Group will review the financial exposure of Government Sponsored Enterprises (which account for over $800 billion in lending for housing, agriculture and education); determine the financial information needs of credit agencies (particularly "early warning" systems for emerging problems); and investigate the resource needs of credit agencies (focusing on the type, amount, and training of personnel required to manage credit programs effectively).

Total Quality Management

The Administration is undertaking a sustained effort to implement "Total Quality Management" (TQM) in the 19 largest Federal agencies. TQM is a strategic approach used in the best private sector service firms which has proven effective in improving customer service. In 1990, active quality and productivity improvement efforts are underway in 265 government programs employing approximately 830,000 people. These programs have operating budgets of over $50 billion in total. These quality improvement efforts are resulting in more responsive, cost-effective, and timely service that better meets the needs of the public.

Privatization

The Administration is committed to ensuring consideration of private sector service delivery in areas that are not inherently governmental. Private providers have over the years saved the Government millions of dollars, and provided better service than in-house Governmental operations in a wide variety of areas. The feasibility of leasing prisons from the private sector will be tested in 1990. The budget requires study of approximately 27,000 staff positions in 1991 to determine where private firms can best help the Government. The Administration will continue private participation in asset disposition and meeting infrastructure needs. The renewed privatization program will be carefully targeted to ensure real and appropriate results of benefit to the American taxpayer.

Drug-Free Workplace

Congress passed the Drug-Free Workplace Act at the end of 1988. The statute requires that, as a precondition for receiving a contract or grant from a Federal agency, contractors with contracts of $25,000 or more and all

grantees certify that they will maintain a drug-free workplace. Each employer must publish a policy statement; establish an ongoing drug awareness program; report convictions for violations occurring in the workplace; and either require those convicted to complete a rehabilitation program or take appropriate sanctions against them, up to and including dismissal. Two common rules, one for contractors and one for grantees, were published in January 1989, effective for all new contract and grant awards after March 18, 1989.

In 1990, the Administration will propose regulations to ensure better that Federal grantees and contractors have drug-free workplaces. The Administration will also publish information in the *Federal Register* on model employer programs and components of employer programs.

VII.C. MANAGING BY OBJECTIVES

BACKGROUND

In "Building a Better America," President Bush directed the establishment of a Presidential Management by Objectives (MBO) system. Its purpose is to track the implementation of selected major policy initiatives and priorities of the Administration from the time of their formulation and announcement to their ultimate outcomes. (It does not apply to all Presidential priorities; rather, it applies to those judged most appropriate for tracking through an MBO system.) The goal of the President's MBO system is to enable the Administration to attain its primary objectives in a timely and efficient manner and to ensure communication between the agencies and the White House on progress, needed assistance, and resources for the selected objectives.

The President approved specific objectives for each of the Cabinet departments and participating agencies, as well as Government-wide crosscutting objectives, in July 1989. The departments and agencies have prepared strategies for achieving these objectives and have identified milestones for measuring progress. Quarterly reports provide the President with a comparison of actual versus planned progress against the milestones and an assessment of both achievements and problems that require corrective action. The budget requests resources for the Presidentially approved objectives within overall spending constraints.

DEPARTMENT AND AGENCY OBJECTIVES

Department of Agriculture.—Objectives are (1) to expand our agricultural markets, both foreign and domestic; and (2) to encourage agricultural production and land management policies that are environmentally sound and ensure the long-term viability of the Nation's natural resources base.

- *Agricultural Markets.*—The Department is pursuing reform of agricultural trading practices and reduced barriers to agricultural markets in the Uruguay Round of multilateral trade negotiations and in bilateral trade negotiations in order to expand opportunities for American farmers to compete in international markets.
- *Environmentally Sound Agricultural Production and Land Management.*—The Department will develop and disseminate agricultural production technologies that protect soil and water. The budget requests $1.2 billion to fund the Department's research program, which contributes to an understanding of how farming practices can be changed to accommodate environmental concerns while promoting efficiency. The budget requests $190 million for the Department's role in a coordinated Federal effort to prevent water quality degradation by agricultural chemicals and nutrients.

Department of Commerce.—Objectives are (1) to conduct a fair, accurate, and efficient 1990 Census; and (2) to manage better ocean and coastal environment activities through improved understanding, monitoring, and prediction.

- *1990 Census.*—The preparations of the Department's Bureau of the Census for the 1990 Census are on schedule. The final apportionment counts are scheduled for delivery to the President in December 1990. The budget requests $238 million, primarily for data processing and publication.
- *Ocean and Coastal Environment.*—First-year funding for this effort was provided in the 1990 Commerce Appropriations Act. The budget requests $17 million for this initiative, almost triple the 1990 appropriation.

Department of Defense.—Objectives are (1) to allocate scarce Defense resources to the most urgent national security requirements; (2) to implement recommendations of the Defense Management Report; (3) to improve Defense medical services and readiness; and (4) to strengthen the Defense technology base.

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- *Resources for National Security.*—The budget requests $295.1 billion for 1991, $3.8 billion more than enacted in 1990. Defense will modernize both strategic and conventional forces, maintain force readiness, and strengthen the technology base. Changes will reflect recent developments in Eastern Europe as well as potential regional threats. Savings in 1991 will be achieved through reductions below current levels of civilian and military personnel, selective acquisition of equipment and supplies, and management savings described below.
- *Defense Management.*—The President forwarded the Defense Management Report to Congress in July 1989. Recommendations included reform of the Defense acquisition system, streamlined and reduced procurement systems, and improved and standardized automated management information systems. The budget reflects $2.3 billion in management reform savings in 1991 and $39 billion in savings over the 1991–1995 period.
- *Medical Services.*—The objective is to bring the cost of providing health care under control. Improvements in coordination between the military direct care system and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) will be sought through an integrated and managed health care approach.
- *Technology Base.*—Proposals to improve management of Defense research and development resources (with emphasis on eliminating redundancy in the DOD laboratory structure) will be forwarded to the Deputy Secretary of Defense by May 1, 1990. In addition, a science and technology investment strategy that can concentrate on high leverage technologies will be developed.

Department of Education.—Objectives are (1) to implement the President's four principles for education (excellence, targeting of those most in need, choice and flexibility, and accountability); (2) to increase minority participation and retention in college degree granting programs; and (3) to improve academic achievement of elementary and secondary school students, especially for low-income, minority, and handicapped children. For discretionary programs of the Department, the budget requests $19.7 billion, an increase of $1.2 billion over 1990.

- *Education Summit with Governors.*—The President's September 1989 Education Summit with Governors in Charlottesville, Virginia, enhanced the Department's potential to accomplish all three objectives. Agreements were reached to establish national educational goals, to seek greater flexibility and accountability in education and training programs, to undertake State-by-State efforts to restructure education systems, and to report annually on progress. The budget requests $60 million for education statistics programs, 50 percent more than in 1990, to help develop measures of progress.
- *Principles for Education.*—The Educational Excellence Act, which authorizes seven initiatives to carry out the principles contained in "Building a Better America," was transmitted to Congress on April 4, 1989. By the end of the session, the Senate had reported its version and the House had begun hearings. Renewed efforts to obtain enactment are planned for the next session. In addition, the Department will emphasize improved achievement for the disadvantaged in the $5 billion compensatory education program of grants to local school districts.
- *Minorities in Higher Education.*—The Department has launched a study of trends in minority participation and retention in higher education that will form the basis for development of specific goals and action plans by the Spring of 1990. The Department is also surveying institutions of higher education to develop and disseminate information on good practices that affect attendance and retention.
- *Elementary and Secondary Achievement.*—The National Goals to be established as a result of the Summit will focus Federal, State, and local efforts on achievement gains for all students. In addition, the Department plans close monitoring and annual reporting on Federal programs for

the disadvantaged and an annual assessment and report on education of the handicapped and their preparation for higher education or employment.

Department of Energy.—Objectives are (1) to support the Nation's nuclear deterrent into the next century (with protection of the environment and safety and health being placed on a par with production); (2) to provide cleanup of waste at Department of Energy (DOE) facilities across the Nation; (3) to enhance U.S. energy security and environmental quality through the development and execution of an integrated market-based National Energy Strategy; and (4) to construct the Superconducting Super Collider (SSC) accelerator on schedule and within established estimates of cost (with one-third of the cost to come from non-Federal sources).

- *Nuclear Production.*—The Department has prepared and is following a comprehensive plan for improving the safety of its tritium production reactors at the Savannah River Site. It plans to restart the first of those reactors by the end of 1990. Initial design contracts have been signed for two new production reactors to assure safe tritium production into the next century, and safety inspection teams have been sent to most of the Department's nuclear weapons plants. The budget requests $8.6 billion, $879 million more than in 1990, to make further safety improvements, to meet production requirements, and to continue design (including final choice of reactor technologies) of new production capacity.
- *Clean-up.*—The Department has issued for public comment a Five-Year Plan for Environmental Restoration and Waste Management against which progress will be measured. The budget requests $2.8 billion in implementation of the Five-Year Plan, $600 million more than in 1990, to assure full compliance with environmental laws, regulations, and requirements, and to meet DOE commitments.
- *Energy Strategy.*—The Department has held a series of public hearings on a National Energy Strategy that will rely upon market principles to the greatest extent possible. The Strategy will seek a national consensus on energy policy that will be aimed at reconciling our need for additional energy supplies with sound environmental and safety requirements. Enactment in July 1989 of legislation deregulating natural gas prices and progress in revising the Clean Air Act are important steps in implementing the strategy. The budget requests $1.0 billion for R&D programs involving renewable and fossil energy, energy conservation, clean coal technology, and oil and gas geoscience.
- *Superconducting Super Collider (SSC).*—The SSC project will proceed with design and with the magnet industrialization program. The budget requests $318 million for these efforts.

Department of Health and Human Services.—The objectives are (1) to improve the health of the American people; (2) to strengthen families and assure family obligations; and (3) to enhance the quality of services that the Social Security Administration delivers to the public.

- *Health.*—The Department has taken steps to ensure the integrity of the Nation's biomedical research grant system. The budget requests an increase of $279 million for basic research, which will maintain the Nation's commitment to basic biomedical research at sustainable levels. The budget also requests an increase of $588 million to combat infant mortality; an increase of $531 million for HIV research, prevention, and treatment (Government-wide); and an additional $48 million for HHS human genome mapping.
- *The Family.*—The Department has published regulations implementing the new Job Opportunities and Basic Skills training program and certain child support enhancements of the Family Support Act of 1988. These initiatives will help additional families become self-sufficient and help children receive the cash and medical support they deserve from non-custodial parents. The budget requests an additional $30 million to strengthen families by extending child support services to additional recipients of public assistance.
- *Social Security Administration (SSA).*—The SSA continues its emphasis on improving the quality of services to the

public (e.g., reducing the time to issue emergency social security benefits from 15 to 5 days and deploying nationwide toll-free telephone access). The budget requests $4.2 billion for operating the Social Security Administration, $330 million more than in 1990, to continue SSA investment in service improvements.

Department of Housing and Urban Development.—Objectives are (1) to help achieve an end to housing discrimination; (2) to help end homelessness, particularly for families with children and handicapped individuals; and (3) to expand economic development opportunities in distressed inner cities and rural areas, increase opportunities for the poor to improve their housing conditions, and increase homeownership opportunities for first-time home buyers.

- *Discrimination.*—The budget requests $60 million to provide for more effective enforcement to end housing discrimination on the basis of race, handicapped status, or family status. The funds will allow HUD to administer more effectively the recently strengthened Fair Housing Act (amended in 1988). The amendments significantly expanded HUD's enforcement role and authority in prohibiting discrimination in all forms of housing.
- *The Homeless.*—The budget requests $985 million for programs for the homeless, including full funding of the McKinney Act as promised by the President. The funds will provide the homeless with a wide range of emergency, transitional, or permanent housing, along with supportive services. New program initiatives give special emphasis to those homeless with mental or drug abuse problems.
- *Economic Development, Housing, and Home Ownership.*—The budget requests $1.2 billion for HOPE—Homeownership and Opportunity for People Everywhere. Through HOPE, the Federal Government will provide almost $4.2 billion in new budget authority over 3 years and several billion dollars in tax expenditures to aid homeownership, low-income rental housing, and enterprise zones.

Department of the Interior.—Objectives are (1) to promote responsible stewardship for the Nation's parks, wildlife refuges, and public lands; (2) to improve the use and management of the Nation's water resources; and (3) to reform the delivery of key social, financial, and natural resources to Native Americans.

- *Stewardship of Public Lands.*—The budget requests $630 million for a major Interior/Agriculture initiative to improve the stewardship of parks, refuges, and other public lands. Called "America the Beautiful," the initiative includes an expansion of the Federal Government's program for acquisition of additional park, refuge, and public lands; rehabilitation of facilities; enhanced recreation; wetlands and other natural resource protection; and a tree-planting initiative.
- *Stewardship of Water Resources.*—The budget requests $11.5 million for planning studies directed at the improved use and management of the Nation's water resources, including first-year funding of $1.0 million for new Bureau of Reclamation studies of drought response, water system management and optimization, environmental recovery, and management of irrigation drainage. In addition, the budget requests $18 million for the Geological Survey's water quality assessment recommended by the National Academy of Sciences.
- *Native Americans.*—The Administration is reviewing Native American programs to identify and seek reforms so as better to assist Native Americans. The budget requests about $5 million for short-term trust fund and credit management improvements and other administrative changes to begin addressing internal management weaknesses in Indian programs. The budget also requests $313 million for Indian education, including increases for higher teacher salaries, a new preschool development program, and improved school evaluations; and full funding ($52 million) to settle Indian water rights claims and make restitution payments to Alaskan Natives.

Department of Justice.—Objectives are (1) to combat and deter criminal and unlawful behavior more effectively; (2) to reduce barriers to equal opportunity through vigorous enforcement of the Voting Rights and Fair Housing Acts and against criminal civil rights violations; and (3) to reduce significantly the level of illegal immigration.

- *Deterrence of Crime.*—The FBI will strengthen its capacity to investigate narcotics traffickers, organized crime groups, white-collar crime (such as defense procurement fraud), and hostile intelligence activities within the United States. The budget requests $1.64 billion, $141 million more than in 1990, to provide resources for FBI investigative programs. In addition, the drug investigative and white-collar crime programs are increased by $23 million and $24 million, respectively. To address the problem of prison overcrowding, the 1990 and 1991 funding levels for prison construction provide $1.9 billion to construct 30,000 new beds.
- *Equal Opportunity.*—To fulfill the Justice Department's responsibility under the Voting Rights Act, the Department's Civil Rights Division in 1989 brought over 110 cases to Federal Court and reviewed more than 3,400 proposed redistricting plans. The budget requests more than $1.8 million dollars and 16 additional positions so the Division can handle the increased workload expected to follow the 1990 Census. The budget also requests $2.5 million for 47 additional positions for enforcement of the Fair Housing Act.
- *Immigration.*—It is the Department's goal in 1990 to apprehend 650,000 illegal aliens; complete 24,000 employer inspections and investigations and 750,000 educational contacts; and arrest 10,000 alien smugglers. The budget requests $289 million for the Border Patrol to maintain an effective border interdiction system, with emphasis on the Southwestern border. In addition, $5 million is requested for employee and labor relations, including implementation of a public outreach campaign to support a rigorous employer sanctions program.

Department of Labor.—Objectives are (1) to assist private and State and local government efforts to provide the basic skills and workplace training needed by entry-level workers through enacting and implementing amendments to the Job Training Partnership Act; and (2) to make it easier for families to meet their child care needs through passage of a child care initiative that is consistent with the President's principles.

- *Workplace Skills and Training.*—In June 1989, the Department transmitted to Congress the Administration's bill to amend the Job Training Partnership Act (JTPA). The amendments are designed to sharpen the focus on preparing the least skilled for jobs, while still retaining JTPA's public-private partnership in these programs. The budget requests $1.7 billion for a new Title II-B State grant program to help prepare nearly 683,000 low-income youth ages 16 to 21 for the world of work; it also includes $966 million for JTPA's new Title II-A State grant program, which will provide job training services to 370,000 disadvantaged adults in 1991. In addition, the budget requests $50 million for a new program called Youth Opportunities Unlimited (YOU). This multi-year challenge grant program will assist localities on a matching basis to develop coordinated human resource policy focused on at-risk youth in inner cities and rural areas.
- *Child Care.*—The President has proposed a child care initiative based on parental choice. The Administration will continue to work with Congress to enact legislation that helps low-income working families meet their child care needs, consistent with the President's principles.

Department of State.—Objectives are (1) to promote U.S. national security and international security by political and diplomatic means; (2) to advance the cause of democracy, solidify our democratic alliances, and promote human rights and satisfaction of humanitarian needs; (3) to advance the U.S. agenda on economic and trade issues; and (4) to strengthen the total security environment for U.S. diplomatic personnel, facilities, and national security information worldwide.

- *International Security.*—The Department works to achieve this objective in a wide

variety of ways. An example involves full implementation of the Tripartite Agreement on Namibia and Angola, signed December 22, 1988. Actions completed include repatriation of refugees to Namibia, registration of voters for the November constituent elections, registration of political parties, and the return of nearly 19,000 Cuban troops to Cuba (with the rate of return running ahead of schedule). The budget requests $382 million for the administrative resources needed to promote U.S. national security by political and diplomatic means.

- *Democracy.*—The Department has focused its efforts in this area on (a) supporting Eastern European regimes that are decentralizing political and economic authority, (b) promoting debt relief while providing support to democratic forces in the developing world, and (c) working with international agencies to promote human rights and international cooperation on humanitarian issues, including refugees. In the past months, the Department has reviewed the provisions of the Comprehensive Plan of Action (CPA) for Indochinese refugees and contributed $4 million to the United Nations to implement the CPA. The budget requests $476 million to meet the humanitarian needs of refugees around the world.

- *World Economy.*—A key area for advancing the U.S. agenda on economic and trade issues is the Department's work in the Paris Club. In 1989, the United States rescheduled in this forum $2.25 billion of debt owed by 22 low- and middle-income countries. Of this total, $1.8 billion owed by 10 low- and middle-income countries has been rescheduled on standard terms, and the remaining $450 million owed by 12 low-income countries has been rescheduled on exceptional terms provided under the Toronto Summit. The budget requests $143 million to support the Department's administrative costs in advancing its objectives in the Paris Club and for other economic and trade issues.

- *Security for U.S. Personnel and Facilities Abroad.*—The Department is in the process of revising its standards for overseas facilities to match more closely security requirements to the needs in specific countries. This approach will ensure that standards will be applied abroad to address specific post requirements, thereby reducing costs. The budget requests $364 million for security programs.

Department of Transportation.—Objectives are (1) to improve overall transportation safety and security by supporting those programs that reduce transportation fatalities and accidents; (2) to keep the National Airspace System modernization moving forward to ensure that aviation user demands can be safely and efficiently accommodated; and (3) to develop by 1990 a national transportation policy to guide the long-term allocation of public and private resources.

- *Transportation Safety and Security.*—Among many efforts to enhance safety and security, the Department in 1989 issued requirements for rear seat lap/shoulder belts in all new cars and light trucks, called on the Nation's Governors to join a national highway speed control campaign, and conducted training for police officers in 10 major metropolitan areas in how to identify drivers under the influence of drugs. The Department has required airlines to install explosive detection systems to screen baggage at major international airports and hosted an International Conference on Aging Aircraft to identify actions to maintain the continued airworthiness of older aircraft. The budget requests $1.6 billion in funding for direct safety and security programs, an 8 percent increase over 1990.

- *National Airspace System.*—In September 1989, the Department issued the 1989 National Airspace System (NAS) Plan for modernization of the air traffic system. The NAS Plan is the most expensive capital program ever undertaken by the Federal Aviation Administration (FAA). The FAA has made substantial progress in implementing the Plan through replacement of obsolete equipment and deployment of added capabilities. The budget requests $2.5 billion, a 45 percent increase over 1990, to accelerate modernization of the system and enhance capacity.

- *National Transportation Policy.*—In July 1989, the Department launched a nationwide effort to develop a national transportation policy. In response to the concerns expressed in this process, the budget emphasizes research and development, targeted infrastructure investments, user fees, and an enhanced partnership among the Federal Government, State and local governments, and the private sector. The policy will be released early in 1990.

Department of the Treasury.—Objectives are (1) to secure enactment of an acceptable Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) and use the resources made available to the Resolution Trust Corporation (RTC) to achieve the elimination of the current backlog of insolvent thrifts within the next 3 years; (2) to make perceptible progress in implementing the Administration's initiative to reduce the debt burdens of developing nations; (3) to secure enactment of the Administration's proposal to reduce the capital gains tax rate; and (4) to modernize the U.S. tax administration and collection system.

- *Savings and Loan Recovery.*—The President signed FIRREA into law in August 1989. FIRREA provided $50 billion: $20 billion was made available in 1989, and another $30 billion will be provided in 1990-91, to resolve problem savings institutions and stem operating losses. The Oversight Board of the RTC sent the Congress in December 1989 a strategic plan describing the general approach to be taken.

- *Developing Country Debt.*—The International Monetary Fund (IMF) and the World Bank have agreed on guidelines for the use of IMF and Bank resources to support debt and debt service reduction. Mexico and the Philippines reached agreements in principle with their commercial bank advisory committees; Venezuela, Uruguay, and Costa Rica have made progress in negotiations with their commercial bank lenders.

- *Capital Gains Tax Rate.*—The House of Representatives passed a restructured version of the President's proposal for a capital gains tax reduction. No provision was made by the Senate nor finally in the 1989 Omnibus Budget Reconciliation Act. The Administration will again seek enactment in 1990. The new proposal provides a 30 percent, 20 percent, and 10 percent exclusion of capital gains on all capital assets (except collectibles) held by individuals, respectively, more than 3 years, 2 years, and 1 year.

- *Internal Revenue Service (IRS) Modernization.*—The IRS has completed a Strategic Business Plan for information systems which contains an overall tax system modernization development strategy. The budget requests $248 million for tax system modernization, $97 million over 1990. These funds will allow faster verification of taxpayer information, development of automated systems to eliminate manual handling of information, and integration of old and new equipment.

Department of Veterans Affairs.—The objective is to ensure that the Department's health care delivery systems provide cost-effective, high-quality care on an equitable basis to the Nation's veterans.

- *Health Care.*—The Department has proposed legislation to establish a commission to study its medical care program and recommend improvements (including facility mission changes and realignments). The budget requests $12.3 billion, $1.0 billion above the 1990 level, to provide operating expenses for the VA medical care system.

Environmental Protection Agency.—Objectives are (1) to work with Congress to achieve enactment of the President's Clean Air Act; (2) to reinvigorate the Superfund Program through aggressive enforcement; (3) to maintain U.S. leadership in addressing global environmental issues; and (4) to promote pollution prevention within both the public and private sectors.

- *Clean Air Act.*—The President transmitted his Clean Air Act reauthorization proposal, the first such proposal since 1977, to Congress in July 1989. The bill is ready for floor action in the Senate and has been reported from subcommittee in the House. The budget requests an increase of $82 million and 247 workyears to implement the President's proposals in a timely

manner and carry out the bill's emphasis on market-based solutions.

- *Superfund.*—EPA has completed its 90 Day Study on ways to improve the Superfund program and is quickly implementing the study's recommendations using an additional 500 workyears provided in 1990. The Agency's new emphasis on enforcement has already resulted in achieving the goal of 50 percent responsible party cleanups; EPA's current goal is to achieve over 60 percent for 1990 and 1991. The budget requests a $210 million increase for Superfund to restore the 1990 congressional reduction and ensure that sufficient funds are available for sites ready for cleanup.
- *Global Environmental Issues.*—EPA has been active in efforts to strengthen the Montreal Protocol on Substances That Deplete the Ozone Layer, urging other nations to support the President's call for a worldwide phaseout of chlorofluorocarbon (CFC) production by 2000 if safe substitutes are available. EPA has also participated with other agencies in helping to define the potential impact of global climate change. The budget requests $13 million more than enacted in 1990 as EPA's portion of a $1.0 billion interagency Global Change Research Program.
- *Pollution Prevention.*—To promote recycling, EPA has recently proposed a rule under the Clean Air Act which, if adopted, would require municipal waste combustors to reduce the waste stream by 25 percent before incineration. The Agency has also established a pollution prevention clearinghouse. The budget includes a $23 million increase over 1990 to carry out pollution prevention projects and implement an Administration legislative proposal.

National Aeronautics and Space Administration.—Objectives are (1) to advance U.S. scientific leadership in the world's knowledge of the solar system and universe; (2) to advance the role of man in space and preserve U.S. preeminence in critical aspects of manned space flight; and (3) to advance scientific knowledge of the Earth and its environment.

- *Scientific Knowledge.*—NASA successfully launched two major scientific missions in 1989—Magellan to Venus and Galileo to Jupiter. In 1990, NASA plans to launch two of the "Great Observatories," the Hubble Space Telescope and the Gamma Ray Observatory. The budget requests $1.7 billion to continue the development of the Comet Rendezvous and Cassini/Saturn missions and the Advanced X-ray Astrophysics Facility and to support other NASA space science.
- *Man in Space.*—NASA has safely and successfully increased the Space Shuttle flight rate, re-establishing the U.S. manned presence in space. The budget requests about $11 billion for additional Shuttle flights in 1991, continued development of Space Station Freedom, and development of technology necessary for a major new initiative for human exploration of the Moon and Mars.
- *Mission to Planet Earth (Global Change).*—The budget provides for initiation of Mission to Planet Earth; this effort will provide the long-term data needed for making sound environmental, energy, agricultural, and economic policy decisions. As part of the U.S. Global Change Research Program, NASA plans to develop and launch a series of satellites for space-based observations and research. The budget requests $1,034 million for this major program, which will include the Earth Observing System, to improve our understanding of earth processes and global change.

GOVERNMENT-WIDE OBJECTIVES

Government Management and Integrity.—The objective is to improve the effectiveness and integrity of programs and services for the public and the proper stewardship of public resources through (1) installing and operating a Government-wide network of financial management systems; (2) developing quality data bases which integrate program results, budget, and accounting data; (3) increasing priority of, and attention to, internal controls and audit follow-up; and (4) employing audit as a key management tool.

- *Financial Management Systems.*—All major agencies have programs underway

to improve financial systems, but it is unlikely that the original 1992 deadline will be met. The Chief Financial Officer Council is developing a revised implementation plan that is both realistic and has sufficient resources behind it to be implemented. An initiative to expand information and data standards is underway to provide the foundation for electronically linking agency, OMB, and Treasury systems to provide a Government-wide network. The budget requests $558 million for financial systems enhancements in 1991, an increase of $54 million over 1990.

- *Information Systems.*—Work has just begun on developing improved program information systems. An initiative to identify models that can serve as prototypes for future management information efforts is underway. The goal is to integrate program results, budget, and accounting data by 1993.
- *Internal Controls and Audit Follow-up.*—The Government's internal control program has been strengthened through detailed reviews and identification of high-risk areas in all major agencies. Procedures to expedite correction of material weaknesses in high-risk areas are being installed.
- *Audit Follow-up.*—Increased attention has been placed on audits and the timely correction of audit findings. The budget requests $715 million, an increase of $70 million and 437 full-time employees over 1990, for Inspectors General.

Drug Control.—Objectives are (1) to develop a National Drug Control Strategy; (2) to reduce the supply of illegal drugs; and (3) to reduce the demand for illegal drugs.

- *National Drug Control Strategy.*—The Administration delivered to Congress a comprehensive National Drug Control Strategy in September 1989. The Strategy calls for better coordination and management of Government drug control efforts at all levels; vigorous prosecution of drug offenders by a criminal justice system that backs up arrests with punishment that is swift and certain; increased Federal funds to expand the availability of drug treatment as well as to improve the effectiveness of treatment programs; and implementation of firm drug prevention programs and policies in schools, communities, and workplaces. To implement these programs, $9.5 billion has been provided for anti-drug abuse programs in 1990. The budget requests $10.6 billion for drug control programs, an increase of $1.1 billion, or 12 percent, over 1990.
- *Reduced Supply.*—The President initiated in 1990 a program aimed at disrupting cocaine production in the Andean nations of Bolivia, Colombia, and Peru and increased domestic law enforcement efforts (including a $447 million State and local grant program to enhance street-level drug enforcement). The budget requests $7.5 billion for supply reduction, including an increase of over $200 million to implement the second year of the 5-year Andean strategy; $700 million for the Drug Enforcement Administration; and a $50 million program to provide law enforcement assistance to high-intensity drug trafficking areas.
- *Reduced Demand.*—The National Strategy emphasizes encouraging individuals not to start using drugs and assisting those who are using drugs to stop. The budget proposes $3.1 billion for drug treatment and prevention activities. These programs include: $760 million for drug treatment grants and technical assistance; $300 million for the Department of Veterans Affairs to provide drug treatment services; $180 million for treatment research and data collection; $496 million for drug prevention programs in the Department of Health and Human Services; $593 million for the Drug-Free Schools and Communities program and other Department of Education programs; and approximately $75 million for drug use prevention activities by the Department of Housing and Urban Development.

Research and Development.—Objectives are (1) to develop a long-range R&D investment policy; (2) to encourage private investment in R&D; (3) to increase the supply of engineers and scientists through appropriate Federal ac-

tions; and (4) to manage direct Federal investments in R&D more effectively.

- *Long-Range R&D Investment Policy.*—The President's Science Advisor is preparing a long-range research and development strategy. The budget requests $71 billion in budget authority for federally supported R&D, 7 percent more than in 1990. Of these funds, $12 billion is for basic research; basic research is a long-range investment the Government makes to ensure continued economic growth.

- *Private Sector Investment in R&D.*—With the signing of the 1989 Omnibus Budget Reconciliation Act, the President extended through 1990 the Research and Experimentation (R&E) tax credit of 20 percent of a company's R&E expenditures over a newly prescribed base amount. The Act also changed the basis of the credit to allow more firms to take advantage of it (including new firms and firms beginning new lines of business that were previously ineligible). The budget proposes to make the R&E tax credit permanent.

- *Supply of Engineers and Scientists.*—The budget requests $463 million for the National Science Foundation's programs in math and science education and human resources programs at all levels. The budget request would allow the Department of Education to increase its support for the Dwight D. Eisenhower math and science teacher training program by 69 percent ($94 million). The budget also includes $51 million for NASA education activities (a 21 percent increase over 1990) and $25 million for Department of Energy programs to improve science and engineering education (a 47 percent increase over 1990). These programs are in addition to the training provided to thousands of graduate students through Federal competitive grants programs.

- *Management of Federal R&D.*—The Administration has taken action to improve the coordination of cross-agency R&D issues. Government-wide R&D plans have been developed for global change research, high performance computing, and superconductivity. The budgets for these programs—as well as estimates for Government-wide R&D in advanced imaging systems, robotics, and semiconductors—are discussed in Part III-C.

Adult Literacy.—The objective is to increase adult literacy through individual and cooperative program activities of Federal agencies in coordination with State and local, private sector, and volunteer activities.

- *Adult Education Programs.*—A working group of the Domestic Policy Council is coordinating literacy activity across the Government. The Department of Labor will convene a committee of business, education, and labor representatives, which will be charged with defining the skills needed to cope with new technologies and providing for workplace literacy. The budget requests $239 million, an increase of 25 percent over 1990, for the Department of Education's Adult Education program (the largest Federal grant program to States to support remedial education for adults). The Education budget includes $5 million for a National Clearinghouse to help States, localities, volunteer groups, and the private sector learn from one another and from Federal demonstration and research activities. The budget also requests $6.1 million for the ACTION agency's VISTA Literacy Corps, a doubling over the 1990 level.

Credit and Cash Management.—The objective is to protect the value of Federal credit and cash programs through (1) sound budget presentation; (2) cost-effective management; and (3) aggressive collection of delinquent and defaulted debt. The budget requests $860 million, an increase of $58 million over 1990, to improve cash and credit management.

- *Budget Presentation.*—Valuations of agency loan portfolios will be conducted in 1990 and 1991 to determine real values and estimate actual subsidies.

- *Credit Management.*—The Administration is continuing to encourage agencies to emphasize guarantees over direct loans; between 1984 and 1989 outstanding guaranteed loans increased from $387 billion to $588 billion. If the Federal Government is to achieve the expected administrative savings and reduced defaults from this

change in emphasis, effective management controls must be implemented. The Administration is currently tightening standards for lender eligibility and program operations; it is also establishing a system of incentives and penalties to encourage proper lender performance.

- *Federal Revenues and Debt Collection.*—To slow the growth in tax debt, the budget includes funding for the first phase of a 3-year tax collection initiative, the overall objective of which is to increase collections by $2.25 billion over the 1991–93 time period. The first phase will generate $759 million in revenues over this interval from 1,050 additional collections personnel to be hired in 1991. Treasury and IRS will develop plans during 1991 to achieve the balance of the 3-year objective through a combination of management improvements, reprogramming, and resource growth.

  The budget also requests an additional $55 million to accelerate collections of non-tax debt, an investment expected to improve management controls and to realize a return of $200 million in 1991. Additional positions are planned for account servicing in the Department of Agriculture's Farmers Home Administration, the Department of Veterans Affairs, and the Department of Housing and Urban Development. Government-wide initiatives include prescreening of applicants to ensure that delinquent debtors do not receive new credit and that delinquent debts are referred to the IRS for offset against any tax refund due the debtor.

International Trade and Export Development.—Objectives are (1) to improve the U.S. trade position through securing freer and fairer trading conditions in international negotiations; and (2) to define, articulate, and implement the U.S. Government's role in export development.

- *Free and Fair Trade.*—The United States Trade Representative (USTR) is seeking to open world markets and liberalize trade through the Uruguay Round of multilateral trade negotiations and through the active pursuit and implementation of regional and bilateral initiatives (e.g., the U.S.-Canada Free Trade Agreement). The budget funds USTR to conclude the Uruguay Round negotiations in December 1990 and to submit proposed trade agreements to Congress for approval.

- *Export Promotion.*—In 1989, the Department of Commerce conducted 3,000 export promotion conferences and notified U.S. exporters of over 100,000 export opportunities. These and other programs have encouraged over 600 firms to export for the first time and almost 2,000 firms to enter new overseas markets. The budget requests $159 million for the Department's export promotion efforts, $10 million over 1990. Program expansions include funding to examine trade opportunities in Eastern Europe and to monitor the economic integration of the European Community.

The Public Service.—The objective is to improve the quality of the Federal Civil Service through more effective recruitment, retention, evaluation, and compensation practices.

- *Pay and Evaluation.*—In response to the President's proposals, the Congress has recently enacted legislation to increase senior-level pay and tie this to performance. The Office of Personnel Management (OPM) will propose in 1990 legislation to enact a reformed white collar pay system that is responsive to occupational and geographical labor market differences. OPM will continue to delegate authorities to agencies in order to streamline agency personnel practices and enhance the quality of employees. OPM will also encourage more agency attention to employee development and training, including executive and supervisory training.

- *Recruitment.*—OPM is continuing its efforts to provide greater flexibility in Federal personnel practices at the department and agency levels, as through the greatly streamlined staffing process used by the U.S. Forest Service in summer appointments. The budget includes proposals to provide five percent increases in starting salaries Nationwide at the GS–5 and GS–7 entry-level occupations for college graduates, and bonuses to recruit, retain, or relocate critical skill workers.

- *Federal Health Benefits.*—A reform of the Federal Employees Health Benefits program will be proposed in 1990 in order to provide the most cost-effective mechanism for allocating health care risks and benefits.