# **Budget Priorities of the Nation**

Van Doorn Ooms

Changes in the federal budget over the last several decades have raised current consumption at the expense of the investment needed for stronger economic growth. These changes have occurred in the budget's fiscal policy, which has reduced national saving and private investment; in its expenditure policy, which has emphasized short-term benefits rather than public investments; and in its transfer policy, which has not adequately addressed the increasing child poverty that threatens the productivity of our future labor force.

During the last decade, the federal budget has been the battleground for deep disagreements over national priorities regarding defense, domestic programs, and taxes. The political failure to resolve these disagreements has paralyzed budget policy and produced unprecedented budget deficits. However, this paralysis has now established in effect a national priority for present consumption at the expense of investment in the nation's future. This article provides a broad overview of the federal budget with respect to this issue.

## **Major Budget Trends**

Total revenues, spending, deficits, and debt. Since World War II, total revenues have risen only slightly as a share of the gross domestic product (GDP), generally fluctuating within the range of 17 to 19% (1) (Fig. 1A). Spending, however, has risen steadily, averaging 17.6% of the GDP in the 1950s, 19.1% in the 1960s, and 20.6% in the 1970s and jumping sharply to 23.1% during the period from 1980 through 1991. In spite of the constant discussion of fiscal restraint during the 1980s, spending was a larger share of the GDP in every year during the period from 1980 through 1991 than in any prior postwar year. As a result, the deficit rose from an average of about 0.6% of the GDP in the period from 1950 through 1969 to 2.1% in the 1970s and 4.2% in the 1980s. In 1992, it rose to 4.9% of the GDP, which reflects the temporary costs of deposit insurance and lower revenues from the weak economy during the period from 1989 through 1992. It is projected to decline to about 3.5% of the GDP in the mid-1990s as a result of economic recovery, the phasing out of deposit insurance costs, and the spending limitations and revenue increases enacted in the 1990 Omnibus Budget Reconciliation Act. However, the deficit then is projected to rise again, driven principally by rapid increases in the cost of health programs, and to exceed 5% of the GDP by 2002. Furthermore, because long-term projections have consistently proved optimistic, the budget outlook may be worse than these estimates suggest.

The revenues and deficits, and to a smaller degree the outlays, shown in Fig. 1A are sensitive to short-term economic conditions. During recessions, revenues fall, expenditures rise, and the deficit grows; the opposite occurs when the economy is strong. The fundamental fiscal position is also distorted by certain onetime or temporary factors such as allied contributions for Operation Desert Storm and outlays for deposit insurance. Figure 1B shows the estimated structural deficit, which excludes these temporary factors (2). This structural measure shows the same postwar increasing trend as the actual deficit, with a sharp rise during the 1980s.

The immediate cause of the sharp rise in the structural deficit in the early 1980s was the federal government's 1981 decision to reduce taxes and accelerate the defense buildup begun in the late 1970s without cutting domestic expenditures commensurately. This policy-related deficit sharply raised debt service costs, and a cumulative process then ensued whereby larger deficits sped the accumulation of debt, which gave rise in turn to larger debt service costs and still larger deficits. The structural deficit excluding debt service, unlike the total structural deficit, shows little trend after 1970 and has recovered from its sharp deterioration in the early 1980s (Fig. 1B). This shows that expenditure reductions and revenue increases during the period from 1986 through 1991 reversed the policy mistakes of the early 1980s, although a greatly increased burden of debt service continues as their permanent legacy. Later in the 1990s, however, rapidly rising health program costs will threaten to drive these structural deficits up sharply again.

This rise in deficits and debt service has had two major effects. First, in a period of strong aversion to taxes, it has deterred program expansions as well as tax reductions, thereby preventing both long-term policy changes and short-term actions to revive the economy. Second, by sharply reversing the steady decline from World



**Fig. 1.** (**A**) Federal revenues, outlays, and deficits as a percentage of the GDP for fiscal years 1950 through 2002 (*14, 29, 30*): (**B**) Structural deficit, total and excluding debt service, as a percentage of the potential GDP for fiscal years 1956 through 2002. These measures exclude deposit insurance and Operation Desert Storm contributions (*29, 30*).

SCIENCE • VOL. 258 • 11 DECEMBER 1992

The author is senior vice president and director of research of the Committee for Economic Development in Washington, DC. He was previously executive director for policy and chief economist of the budget committee in the U.S. House of Representatives and assistant director for economic policy in the Office of Management and Budget.

War II until the mid-1970s in the ratio of debt to the GDP, it has put upward pressure on interest rates, reducing domestic investment and raising U.S. borrowing from abroad.

*Program (noninterest) spending.* Federal government programs are classified into entitlements and other mandatory programs) (henceforth, mandatory programs) and discretionary programs. The former are funded by permanent law, which sets the criteria for payments and benefits, which are mandatory unless the law is changed or expires. The latter are funded by annual appropriations acts and usually require annual congressional action.

By far the largest mandatory programs, excluding the special case of deposit insurance, are Social Security and Medicare. Other major entitlements include federal civilian and military retirement, Supplemental Security Income, Medicaid, farm price supports, food stamps and child nutrition programs, veterans' benefits, and student loans. Discretionary programs, in turn, are conventionally classified into defense, international, and domestic programs. The first is self-explanatory. International discretionary programs provide for the conduct of foreign affairs, foreign information and exchange activities, and international assistance. Domestic discretionary programs include a wide range of activities in space and science, transportation, energy, natural resources and the environment, education, housing, veterans' medical care, and general government functions such as tax collection and law enforcement. Most public investment programs providing, for instance, infrastructure development, education, job training, and research and development come under this category.

Figure 2 shows expenditure trends in these categories over the last 30 years and

projections to 2002. The most important features of these trends should be considered.

1) Spending is now highly concentrated in a few programs. In 1991, defense, Social Security, and Medicare accounted for about 60% of gross program spending excluding deposit insurance (3).

2) Mandatory programs have grown much faster than discretionary programs. The costs of the two largest programs, Social Security and Medicare, rose as the elderly population grew and benefits expanded in the 1970s, although cost increases in these programs for the elderly moderated somewhat in the 1980s as a result of slower growth in the numbers of retirees and modest program reductions. However, Medicare and Medicaid costs are now projected to rise sharply in the 1990s, reflecting the explosion in costs of health care generally as well as special program factors.

3) Benefit payments in these mandatory programs, in the aggregate, go predominantly to high- and middle-income rather than poor beneficiaries. About 60% of benefit payments go to households with annual incomes above \$20,000 (4), and only 19% of transfers are currently based on income tests. In spite of the increased payroll taxes that partially fund these benefits, most beneficiaries receive significant subsidies on an actuarial basis. Furthermore, except for Medicaid, means-tested transfers have been essentially stable. Contrary to popular perception, most welfare costs are neither a large nor a growing portion of the federal budget.

4) Defense spending has shown a longterm downward trend, with large fluctuations that reflect military conflicts and changes in the national security environment. After the sharp buildup during the



Fig. 2. (A) Mandatory programs as a percentage of the potential GDP for fiscal years 1962 through 2002 (*29, 30*). (B) Discretionary programs as a percentage of the potential GDP for fiscal years 1962 through 2002 (*29–31*).

period from 1979 through 1986, defense spending has declined both as a share of the GDP and in real program levels. Substantial further reductions in the 1990s appear likely as a result of the end of the Cold War.

5) International affairs spending has also fallen gradually; a rise in security assistance spending has been more than offset by a decline in humanitarian aid and development assistance. Total current (1992) foreign assistance, amounting to 0.3% of the GDP (about \$14 billion annually), is less than half the annual GDP share during the 1960s.

6) Domestic discretionary spending was reduced sharply during the period from 1978 through 1987, when it was the major target for fiscal restraint after rising in the 1960s and in the early 1970s. Its share of the GDP has remained roughly constant since 1987, but the constant real program levels projected here imply a moderate decline relative to the GDP over the next decade.

### **National Priorities**

These major trends, in combination with other data, suggest a greatly increased priority given to the present at the expense of the future. This is shown in three important policy dimensions (5): (i) Fiscal policy. The deficit has reduced national saving and private investment and raised consumption. (ii) Expenditure policy. The composition of spending has shifted from public investments toward short-term benefits. (iii) Income transfer policy. Efforts to improve the economic condition of poor children have diminished, with likely longterm economic costs.

Fiscal policy: Consumption versus saving and private investment. Since 1981, the United States has sharply increased the proportion of its national production used for private consumption. During the period from 1950 through 1980, private consumption averaged 69.5% of the net domestic product (NDP) without significant trend and rose to 71 to 72% in recessions (6). This ratio exceeded 72% only during the postwar consumption "catch-up" years of 1947 through 1949, when it averaged 74%. However, this consumption share rose to 75 to 76% in the late 1980s and 76 to 77% in the recession years of 1990 and 1991. In effect, we have shifted about \$300 billion (in 1992 terms) of national resources annually from net private domestic and foreign investment to consumption.

This shift from investment to consumption reflects a commensurate drop in saving, produced substantially by the increasing deficits, which (with an important exception discussed below) constitute federal

SCIENCE • VOL. 258 • 11 DECEMBER 1992

dissaving. In addition, however, nonfederal saving, comprised principally of private saving by businesses and households, also fell from an average of 9 to 10% of the NDP in the 1960s and 1970s to 8.2% in the 1980s and 6.6% in the period from 1986 through 1991. As Fig. 3A shows, these two factors combined to produce a precipitous drop in national saving-the economic resources that remain to increase the capital stock after consumption and the replacement of worn-out capital. Net national saving fell from an average of 8 to 9% of the NDP in the period from 1950 through 1979 to 5.1% in the period from 1980 through 1985 to only 2.9% in the period from 1986 through 1991.

As shown in Fig. 3B, the decline in saving has both reduced domestic investment and increased U.S. indebtedness to foreigners. The former directly reduces capital formation and productivity growth in the United States; the latter increases effective ownership of domestic capital by foreigners, who receive the income from it as interest and dividends. Both reduce the resources and income available to Americans in the future.

How much does growth matter? Some argue that private investment and growth should have a lower priority than aid to the poor, defense spending, or other public purposes. In a strong economy in the short term, certainly, additional private investment leaves fewer resources available for other purposes, and the choices may be painful. However, in the longer term such public objectives are unlikely to be achieved without stronger growth. Recent political experience suggests that taxes to finance public activities will be strongly resisted by the electorate if real



**Fig. 3.** (**A**) Federal deficits and net national saving as a percentage of the NDP for calendar years 1950 through 1991. (**B**) Net national saving, domestic private investment, and investment abroad as a percentage of the NDP for calendar years 1950 through 1991. All measures are based on the National Income and Products Accounts (NIPA) (*6*).



Fig. 4. (A) Federal nondefense program spending by broad purpose as a percentage of the potential GDP for fiscal years 1962 through 1991 (*32*). (B) Federal nondefense investment-type spending as a percentage of the potential GDP for fiscal years 1962 through 1991 (*14*).

SCIENCE • VOL. 258 • 11 DECEMBER 1992

incomes are not growing.

The recent reduction in national saving and investment is likely to significantly reduce economic growth. It is estimated that national saving of about 4.5% of the NDP is required simply to maintain our recent meager growth of productivity and incomes at about 1% annually (7). Assuming private saving recovers to 7% of the NDP, the federal structural deficits currently projected at about 4% of the NDP in the mid-1990s would have to be reduced by roughly 1.5% of the NDP-\$80 billion per year in terms of the 1992 economy-just to "keep crawling in place." Furthermore, unless the projected rapid rise in health program costs is moderated, the required reductions would become much larger in later years.

This threat to future living standards is greatly increased by the inevitable retirement bulge of baby boomers beginning about 2010. At that time, the number of Social Security beneficiaries will begin to rise rapidly, so that within another several decades each 100 workers will have to support (through taxes or otherwise) about 50 retirees rather than the present 30 (8). If labor productivity and incomes are not raised significantly, the squeeze on living standards of both workers and retirees could produce intergenerational political and social conflict. The surplus in the Social Security trust fund resulting from the 1983 reforms (currently about 1% of the NDP) was intended to provide the additional saving and capital formation to raise future incomes in this way, but this increase in national saving has been more than offset by the rising deficit in the rest of the budget. To restore this saving by eliminating the offsetting deficit would require annual spending reductions and tax increases totaling about 3.5% of the NDP in addition to the 1.5% described above. Prudent provision for the future thus suggests the need for fiscal adjustment of about 5% of the NDP-roughly \$250 billion annually in 1992 terms, growing to \$350 billion by 1997. Policy changes of this size are currently considered very unrealistic politically.

This is not a problem that can be left for the next century, because the fruits of compound growth ripen slowly. Furthermore, the damage is already accruing. A recent study estimates that the national saving decline of the 1980s reduced the 1990 capital stock by at least 15% and potential output by 5% and that these losses could double by the end of the decade (9).

Expenditure policy: Short-term benefits versus public investments. This discussion oversimplifies the situation in one important respect: Government investment expenditures reflect saving, not consumption, even though U.S. national accounts do not reflect this distinction. If recent larger deficits were a result of rising (and productive) public investments, the outlook for growth would be much brighter.

Unfortunately, this was not the case. As shown in Fig. 4A, federal spending on long-term investments declined in the 1980s and, over a longer period, has fallen sharply relative to spending on short-term benefits. Figure 4B provides further detail on public investments in three major categories. Gross expenditures on nondefense physical capital have remained roughly constant after declining from the high levels of the 1960s. However, if adjustments are made for depreciation, net physical capital outlays appear to have declined substantially in the 1980s, both in real terms and relative to the GDP (10). Nondefense research and development has declined in the 1970s and 1980s, and education, training, and social services, which expanded significantly during the late 1960s and 1970s, also declined during the 1980s.

The magnitude of the effects on productivity and growth of this decline in public investment in physical capital is controversial. Public investment, unlike most private investment, is determined by a political process not subject to market tests, and the use of appropriate prices or other mechanisms to promote efficient use and maintenance is uncommon. Questions therefore arise about the economic returns from such public investments. Several studies have concluded that reduced aggregate spending on physical infrastructure has been a major cause of the recent decline in productivity growth (11), but evaluations of these studies have cast doubt on the size of the reported effects. Common sense, anecdotal evidence, and cost-benefit studies suggest that deteriorating public infrastructure reduces productivity (partly by increasing waiting times) and that expenditures to maintain existing infrastructure and relieve congestion in urban highways and major airports would have large payoffs (12). However, such additional infrastructure will not permanently relieve congestion unless user fees and grant formulas are adjusted to reflect more accurately the economic cost of its use. Indeed, in some instances such reforms could relieve congestion and boost productivity with little, if any, increase in net expenditures (12, 13).

The decline in federal nondefense research and development (R&D) expenditures stems from the falloff in spending on space R&D after the extraordinarily large outlays in the 1960s and the loss of enthusiasm for energy research after the oil crises of the 1970s had passed. Federal spending for nonspace, nonenergy R&D activities in total has remained fairly constant at about one-quarter to onethird of 1% of the GDP since the mid-1960s; however, spending on health R&D has increased substantially relative to that in general science and other sectors (14).

35

The federal government devotes a substantially larger proportion of its research funding than other national governments to activities with primarily social or political rather than direct economic returns, such as health and space. It has also, as a matter of policy, concentrated much more heavily than other countries on basic rather than applied research and has left industrial development research, with few exceptions, to the private sector. The debate over international competitiveness, however, has led many to argue that the United States should emulate its competitors by providing funding for "generic" or "precompetitive" applied research (15). The argument for more federal funding for applied (as well as basic) R&D rests principally on studies over the last 25 years that have consistently shown high private returns and even higher returns to society as a whole from private R&D expenditures, as well as on studies that suggest that the United States is losing competitive advantage in certain sectors (16). Nevertheless, the few federal ventures into applied R&D have not been reassuring; federal funding for productive applied research would appear to require institutional structures that would provide more insulation of investment decisions from the political process than in the past (17).

The decline during the 1980s in investments in education, training, and social services must also be viewed with some caution. First, much of that decline is attributable to the discontinuation in 1981 of public service employment under the Comprehensive Employment and Training Act, which provided primarily temporary employment rather than training. Second, state and local governments provide most education spending, and this spending increased during the 1980s. Third, although there is widespread agreement that an increasingly well-educated work force has made a major contribution to long-term growth, there is uncertainty whether increasing specific educational inputs, such as teacher-student ratios or time in school, will permanently raise achievement levels or economic performance (18). Institutional reform may be at least as important as additional resources in education, and both will probably be required for major gains in educational achievement.

In spite of such reservations, there is good reason to believe that additional selective investments in education, training, and social service programs will be beneficial. First, the sharp rise in wage premiums related to education levels in recent years suggests potential

SCIENCE • VOL. 258 • 11 DECEMBER 1992



**Fig. 5.** Poverty rates for persons under 18, persons aged 18 to 64, and persons 65 and over for calendar years 1960 through 1991 (*33*).

high rates of return for additional education and training. Second, such investments are likely to have benefits in addition to the higher market incomes and output used in conventional economic calculations. These benefits take two forms: (i) if nonmarket activities such as enhanced quality of leisure are included, the social returns to education may be much larger (19) and (ii) Head Start, the Jobs Corps, and other work-related programs have been associated with reductions in crime and social expenditures that benefit society at large in addition to the program participants (20).

Transfer policy: Neglecting versus investing in poor children. A third budgetary development with large implications for the future has been the failure to stem the deterioration of the economic circumstances of lowincome children. This failure is related to the income (cash and in-kind) transfer policies of the budget.

The adverse effects of poverty on the physical, social, and intellectual development of children are widely recognized (21). Although this is also a problem of social equity, the issue here is the future cost to society of a relatively unskilled labor force in a global economy where high productivity and incomes depend increasingly on human capital. Labor force growth is slowing, and blacks and Hispanics, who suffer disproportionately from poverty, may constitute one-third of the labor force in 30 years. Raising the level of skills will therefore require not only more and better education but also amelioration of the culture of poverty that hinders the educational development of poor children (22). In the dramatic rise in the incidence of poverty among children in the last two decades (Fig. 5), especially notable is the sharp change in the character of poverty during the 1980s, when, for the first time in the



**Fig. 6.** Pre- and post-policy child poverty rates for the United States, Canada, Germany, France, and the United Kingdom (U.K.) in the mid-1980s (children include persons aged 17 or younger) (*34*).

postwar period, a long economic expansion reduced the poverty rate very little (23). In contrast, Fig. 5 also shows the earlier dramatic success in reducing poverty among the elderly, related principally to the liberalization of Social Security in the 1970s.

These official poverty data measure only pre-tax cash income. A more comprehensive income measure that reflects in-kind food and housing benefits as well as taxes also shows clearly the recent deterioration in the real incomes of low-income families with children. From 1979 to 1989, while real post-tax incomes rose by 12% for the average family, they fell by 5% for the poorest 40% of all families with children and by 13% for the poorest 40% of young families (head of the family under age 35) with children. Although earlier data are not available for this more comprehensive measure, real pre-tax cash income appears to have fallen by a remarkable 27% during the period from 1973 through 1989 for these young and poor families with children. Although the declines were especially sharp for single-parent families, real incomes also fell for poor married couples with children (24). These incomes undoubtedly have declined further as a result of the weak economy from 1990 through 1992.

Several factors combined to increase the number of low-income families and to reduce their incomes during the 1970s and 1980s. Average real wages for nonsupervisory workers have declined since 1973 as a result of low productivity growth, but the decline has been much sharper for lesseducated, low-wage workers. This has resulted from a growing mismatch between the demand for and the supply of more educated and skilled labor related to the

These economic and demographic forces raising child poverty were reinforced rather than offset by changes in government policy. For single-parent families, benefit restrictions and the erosion of benefits by inflation in the Aid to Families with Dependent Children (AFDC) program were especially damaging. For both working and nonworking poor mothers, real incomes, including wages amounting to only 50 to 75% of the official poverty threshold, AFDC benefits, food stamps, and the Earned Income Credit (EIC), fell by about 25% during the period from 1970 through 1990 (27). The contraction of the unemployment insurance system also contributed, especially for the long-term unemployed. Finally, tax burdens increased on low-income working families during the 1970s and early 1980s, although this was reversed by the 1986 and 1990 changes in tax law (28).

In the context of global economic competition and the harmful effects of poverty on children, the difference between the United States and other advanced countries in taking actions to reduce child poverty is troubling. As shown in Fig. 6, in the absence of government tax and transfer policies, the U.S. child poverty rate would not have been far out of line with the average for several other major countries in the mid-1980s; however, U.S. policies did far less than those of other countries to reduce such poverty.

#### Conclusions

Federal spending once funded primarily the "core" functions of national government, such as defense, tax collection, and public investments not effectively provided by the market economy or state and local governments, including basic research, regional water projects, and interstate highways. Recently, the federal budget has become more an instrument of the general welfare, providing income security, medical services, nutrition, and other formerly privately supplied goods and services. In the process, it has become a major factor in the reallocation of national resources from saving and investment to consumption, reducing economic growth and the nation's capacity to raise future living standards and meet its domestic and international responsibilities.

There is not space here to outline a detailed program for changing budget priorities, but the major elements of such a

SCIENCE • VOL. 258 • 11 DECEMBER 1992

program are implied by the analysis above. First and foremost, fiscal policy must be used to raise national saving rather than to fuel consumption. The budget should be adjusted to produce a modest structural surplus so that the Social Security trust funds can finance the investment and growth needed to support the baby boomers when they retire. Implementing this will require both spending reductions and tax increases substantially larger than those now seen as politically feasible. This is a political problem, not a design problem, and other nations have made fiscal adjustments of similar size.

Significant spending restraint will require slowing the growth of entitlements, especially the cost of health programs. Additional taxation of benefits and cost-sharing by higher income beneficiaries will be needed. However, effective reduction of health program costs will require reform of the nation's health care system as a whole because squeezing federal health programs in isolation will largely shift costs to private payers or to state and local governments.

Substantial further reductions in military expenditures also appear possible as national security policy adapts to the post– Cold War world. The economic and political strains of the current defense cutbacks suggest that the transition must be gradual and that additional adjustment assistance may be necessary.

Next, the composition of spending reductions and additional revenues must be examined more carefully. For instance, deferred maintenance of public infrastructure has been politically more expedient than a reduction of middle-class transfer payments, but it impairs economic growth. As resources are shifted from public consumption to investment, more stringent costbenefit tests should be applied to public investments, and the use of public capital should be rationed by prices that reflect its true costs. Similarly, tax increases should be structured to reduce consumption rather than saving and investment, whether across the board or on specific items like energy; adjustments to the overall tax structure might then be made to avoid increasing income disparities.

Finally, we must take a broader view of the investments in human capital required for our future labor force. Impoverished children living in the shadow of crime, drugs, and violence are unlikely to acquire the skills required to become productive workers. Money alone cannot solve these problems, and the increased attention to responsibility and behavior in welfare policy is constructive. But a broad attack on the economic, behavioral, and environmental problems of poor families cannot be undertaken without additional resources. Such ARTICLE

expenditures should be viewed as an investment in the next generation of workers and undertaken in the name of economic growth as well as social justice.

#### **REFERENCES AND NOTES**

- The analysis follows the common convention of expressing budget revenues and expenditures as percentages of the GDP, which roughly adjusts for inflation and growth in the economy. Years refer to fiscal years, and "increases" and "decreases" in budget magnitudes refer to changes relative to the GDP, not absolute changes, unless otherwise noted.
- 2. Congressional Budget Office (CBO), The Economic and Budget Outlook: Fiscal Years 1993–1997 (CBO, Washington, DC, January 1992). Some economists would make a further adjustment to remove those interest costs associated with inflation because these represent no real income to bondholders or debt increase to the government. See R. Eisner, How Real Is the Federal Deficit? (Free Press, New York, 1986). Although this adjustment reduces the deficit significantly in years of high inflation, it does not change the strong upward trend or the sharp acceleration of the deficit in the period from 1980 through 1991.
- Program spending is measured gross of offsetting receipts, which reduce the level of total (net) outlays.
- N. Howe, How to Control the Cost of Federal Entitlements: The Argument for Comprehensive "Means-Testing" (National Taxpayers Union Foundation, Washington, DC, 1992), table A-2. The comparable figure for entitlements including major tax subsidies is 66% (table A-6).
- U.S. tax policy also favors consumption relative to saving and investment in a number of ways. However, the effect of tax policy on saving and investment is a complex and controversial subject beyond the scope of this article.
- 6. Bureau of Economic Analysis, U.S. Department of Commerce, The National Income and Product Accounts of the United States, 1929–82 [Government Printing Office (GPO), Washington, DC, 1986]; Survey of Current Business, vols. 66–70, no. 7. The NDP is total production within the United States less the production of investment goods required to replace capital "consumed" through wear or obsolescence. The NDP is the appropriate concept for analyzing the allocation of additional resources between consumption and investments to increase the capital stock.
- C. L. Schultze, Memos to the President: A Guide Through Macroeconomics for the Busy Policymaker (Brookings Institution, Washington, DC, 1992), p. 246.
- H. J. Aaron, B. P. Bosworth, G. T. Burtless, *Can America Afford to Grow Old?* (Brookings Institution, Washington, DC, 1989), chap. 3.
- 9. E. S. Harris and C. Steindel, Fed. Reserve Bank

N.Y. Q. Rev. 15 (no. 3-4), 1 (1991).

- Office of Management and Budget (OMB), *The Budget of the United States Government: Fiscal Year 1993* (GPO, Washington, DC, 1992), table 29-2.
- D. A. Aschauer, J. Monetary Econ. 23, 177 (1989);
   A. H. Munnell, N. Engl. Econ. Rev., 3 (January– February 1990).
- Congressional Budget Office, How Federal Spending for Infrastructure and Other Public Investments Affects the Economy (CBO, Washington, DC, July 1991).
- K. A. Small, C. Winston, C. A. Evans, *Road Work* (Brookings Institution, Washington, DC, 1989).
- Office of Management and Budget, Supplement to the Budget of the United States Government: Fiscal Year 1993 (GPO, Washington, DC, 1992), part 5, table 10.2.
- Council on Competitiveness, Gaining New Ground: Technology Priorities for America's Future (Council on Competitiveness, Washington, DC, 1991).
- Congressional Budget Office, Federal Support for R&D and Innovation (CBO, Washington, DC, 1984), chap. 3.
- L. Cohen and R. Noll, *The Technology Pork Barrel* (Brookings Institution, Washington, DC, 1991).
   E. F. Denison, *Trends in American Economic*
- E. F. Denison, Trends in American Economic Growth, 1929–1982 (Brookings Institution, Washington, DC, 1985); E. Hanushek, J. Econ. Lit. 24, 1141 (1986). D. Card and A. B. Krueger [J. Polit. Econ. 100, 1 (1992)] provide evidence that educational quality raises returns to education.
- R. H. Haveman and B. L. Wolfe, J. Hum. Resour.
   19, 3 (1984); D. W. Jorgensen and B. M. Fraumeni, in *Output Measurement in the Services Sector*, Z. Griliches, Ed. (Univ. of Chicago Press, Chicago, 1992), pp. 303–341.
- Chicago, 1992), pp. 303–341.
  20. CSR Incorporated, *The Impact of Head Start on Children, Families, and Communities* (Department of Health and Human Services, Washington, DC, 1985); Congressional Budget Office, *Work-Related Programs for Welfare Recipients* (CBO, Washington, DC, 1987); C. L. Betsey, R. G. Hollister, Jr., M. R. Papageorgiou, Eds., *Youth Employment and Training Programs: The YEDPA Years* (National Academy Press, Washington, DC, 1985).
- National Center for Children in Poverty, School of Public Health, Columbia University, *Five Million Children: A Statistical Profile of Our Poorest Young Citizens* (Columbia Univ. Press, New York, 1990), chap. 3.
- R. J. Murnane, in American Living Standards, R. E. Litan, R. Z. Lawrence, C. L. Schultze, Eds. (Brookings Institution, Washington, DC, 1988), chap. 7; Committee for Economic Development (CED), Children in Need (CED, New York, 1987), chap. 2; The Unfinished Agenda: A New Vision for Child Development and Education (CED, New York, 1991), chaps. 1 and 2.
   R. M. Blank, "Growth is Not Enough: Why the
- R. M. Blank, "Growth is Not Enough: Why the Recovery of the 1980's Did So Little to Reduce Poverty," testimony for the Congress of the United States, Joint Economic Committee, 26 September 1991; D. M. Cutler and L. F. Katz, *Brookings Pap.*

Econ. Act. 2, 1 (1991).

- Staff of Committee on Ways and Means, U.S. House of Representatives, *Overview of Entitlement Programs: 1992 Green Book* (GPO, Washington, DC, 1992), pp. 1383–1385.
- M. L. Blackburn, D. E. Bloom, R. B. Freeman, in A Future of Lousy Jobs?, G. Burtless, Ed. (Brookings Institution, Washington, DC, 1990), pp. 31– 76; J. Bound and G. Johnson, Am. Econ. Rev. 82, 371 (1992).
- E. Smolensky, S. Danziger, P. Gottschalk, in *The Vulnerable*, J. L. Palmer, T. Smeeding, B. B. Torrey, Eds. (Urban Institute Press, Washington, DC, 1988), pp. 29–54.
- 27. R. Greenstein, testimony for the U.S. House of Representatives, House Committee on Ways and Means, 13 March 1991.
- 28. Effective federal tax rates rose for most lowincome taxpayers through the 1970s and until the mid-1980s because of the increasing importance of payroll taxes and the erosion by inflation of the real value of personal exemptions and the standard deduction. The indexing of the individual income tax in 1985 and the legislated tax changes of 1986 and 1990 have now reduced the effective rate for the lowest.income quintile below the 1977 level. See (24), p. 1510.
- 29. Congressional Budget Office, in (2).
- 30. \_\_\_\_\_, The Economic and Budget Outlook: An Update (CBO, Washington, DC, August 1992).
- 31. Projected levels for 1993 defense, international, and domestic discretionary spending and 1994– 1995 total discretionary spending are those set by the 1990 Omnibus Budget Reconciliation Act. Total discretionary spending increases by the rate of inflation after 1995, and the three components are assumed to maintain their 1993 proportions of the total after 1993.
- Office of Management and Budget, The Budget of the United States Government: Fiscal Year 1992 (GPO, Washington, DC, 1991), chart II-4. Short-
- term benefits are cash payments, in-kind services, or subsidies for individuals or businesses such as Social Security benefits, federal pensions, Medicare and Medicaid services, and housing and agricultural subsidies. Long-term investments are characterized by a stream of benefits continuing at least 5 years beyond the expenditure. Included in this group is a diverse set of programs that contribute to physical capital, R&D, and education and training. The distinction is necessarily somewhat arbitrary; for instance, Medicare expenditures that treat immediate illnesses may also improve well-being over many years.
- U.S. Bureau of the Census, *Poverty in the United States: 1991* (GPO, Washington, DC, 1992).
   T. M. Smeeding, "The War on Poverty: What
- T. M. Smeeding, "The War on Poverty: What Worked?," testimony for the Congress of the United States, Joint Economic Committee, 25 September 1991.
- J. A. Leonard provided research assistance; P. Van de Water, A. Davis, and the two referees provided helpful comments.