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EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON, D.C. 20500

THE CHAIRMAN

May 27, 1992

MEMORANDUM TO MICHAEL J. BOSKIN

FROM: J.D. FOSTER

SUBJECT: Conversation with Congressman Bob Walker

I received a heads-up call from Bob Walker's staffer on the House Science, Space, and Technology Committee to the effect that Walker is going to call to ask you to testify either Wednesday or Thursday (3rd or 4th) of next week on international competitiveness.

The democrats and republicans have introduced competing bills on international competitiveness. The democrats' bill (George Brown and Gephardt, et al) includes an expanded grant program, primarily for "science", to be run out of the Commerce Department as well as various tax proposals. The republican bill is a repackaging of various administration sponsored or supported tax provisions. (More details on these programs are coming.)

Walker believes this is intended as a major campaign move, possibly in support of the Clinton industrial policy program. Walker also believes the democratic bill is intended to be marked up and sent to the House floor. This seems unlikely as the bill includes tax provisions and Rosty is unlikely to let a loose tax vehicle make its way to the Senate. The bill could, however, be attached to the trade bill which is expected to go to the Senate at some point and which already qualifies as a tax vehicle.

Bromley and someone from Commerce is expected to be asked to testify. Both are expected to hew the Administration line in testimony and to wander afield during Q&A.

This could be a reasonable opportunity for you (and Darman?, as members of the Council on Competitiveness) to talk up the President's tax proposals while criticizing industrial policy in all its forms, as well as other necessary measures to improve competitiveness like the Balanced Budget Amendment and regulatory reform.

Finally, if the idea is appealing but the timing is difficult, Walker could be encouraged to suggest a third hearing at a later date.

July 30, 1992

TO: MICHAEL BOSKIN

FROM: K.C. FUNG
STEVE KAMIN

SUBJECT: TALKING POINTS ON U.S. COMPETITIVENESS

INTRODUCTION

- The long-term competitiveness of the United States is best reflected by our standard of living. In order to achieve the highest standard of living, we have to achieve the highest possible rate of economic growth.

- The government cannot efficiently mandate or direct economic growth. But it can and should create conditions that encourage market-driven growth.

- Among other things, that requires improving incentives and reducing barriers to saving, investing, working and innovating.

- In particular, promoting growth may require reducing the burden of government regulation. This will enhance the economy's ability to respond flexibly to changes in supplies of resources, demands for products, and new technologies.

U.S. COMPETITIVENESS IS NOT IN DECLINE

- The facts do not support the assertion that the United States is in decline. With less than 5 percent of the world's population, America produces more than a quarter of the world's total GNP.

- Our citizens have the highest standard of living in the world.

  - U.S. GDP per capita of $22,056 in 1990, the latest year for which comparable data are available, places the United States more than 25 percent above Germany and Japan, based on BLS data that adjust for purchasing power differences.

- The U.S. has the highest absolute level of productivity of any country in the world, with a GNP per employed person of $45,918 in 1990.

- According to BLS data, the U.S. is more than 20 percent above the average of the other G-7 countries.

o As of 1991, the U.S. produced a larger share of the industrial output of the OECD than it did in 1970.

o The shift of some workers into the service sector in the 1980s in part was enabled by a large increase in manufacturing productivity.

o The bottom line is that the U.S. is not de-industrializing. Taken together, the facts compel the conclusion that, at least for now, the U.S. is not in decline.

STEPS TO ENHANCE U.S. COMPETITIVENESS

o The U.S. cannot take sustained, solid, long-term economic growth for granted. We have serious challenges to overcome to increase our productivity growth.

o To improve the U.S. standard of living and set the basis for long-term growth, we have to increase workers' skills and provide them with more and better capital and technology. We also have to reduce impediments to the smooth functioning of markets.

o Sound policies can have an effect on productivity, enough to have an important impact over a span of years.

- Small growth rate differences have a substantial effect on how rapidly living standards increase from one generation to another.

Investment and Saving in the U.S. Economy

o Sustained U.S. economic growth requires a continuing stream of investment in new capital, which in turn requires a high rate of savings.

- Productivity growth and investment rates are highly correlated. During 1959-73, capital per worker in the private business sector grew 2.4 percent annually while productivity grew by 2.8 percent. During 1973-89, these figures dropped to 0.8 percent and 0.9 percent, respectively.

- The rate of savings in the U.S. economy moved from ___ percent over the 19__-__ period to ___ percent during 19__-__.

- One of the keys to ensure the availability of new capital is sound monetary and fiscal policy. Low and steady inflation will reduce uncertainty and promote investment. A successful fiscal policy over the long term would, by balancing the budget, release resources for private investment and lower the cost of capital.

  - The President has submitted budgets with a focus on both controlling the growth of government spending and, within proposed spending categories, shifting from current consumption to investment.

- Tax policy should aim to minimize distortions to incentives to save and invest.

  - The Administration has proposed the introduction of Family Savings Accounts as a way to stimulate personal saving for pre-retirement objectives.

  - The Administration has proposed (1) a capital gains incentive that reduces the tax on long-term gains to 15.4 percent; (2) a new 15 percent Investment Tax Allowance; and (3) simplified and liberalized treatment of depreciation.

  - The Administration also has proposed the establishment of Enterprise Zones to bring entrepreneurship and opportunity to distressed areas.

- Over the long term, a well functioning financial system is essential to ensure that business and consumers that rely on credit have access to the funds they need.

- Demographic changes in the U.S. can have an impact on productivity. As the baby boom generation ages, the labor force will begin to grow more slowly. Historically, a slowing in labor force growth is associated with an increase in labor productivity.

Better and New Technology

- Economic growth is enhanced by policies supporting the development of our intellectual capital.

- In areas where the gains from innovation can be captured by private entrepreneurs, so that there are sufficient incentives for private R&D, innovation is best pursued by the private sector. This ensures that R&D effort will be directed toward the most productive, market-worthy projects.

- To promote private innovation, the Administration has consistently advocated making the R&D tax credit a permanent part of the tax code.

- Reducing the tax rate on capital gains would also improve the incentives for private R&D.

o At the pre-competitive stage of R&D, when gains to innovation are hard to capture and private R&D therefore would be unlikely to occur, there is an important role for government-funded research activities.

- This year we proposed a record $76.6 billion R&D budget both for basic research and for applied research and development. (check)

o The Administration has consistently highlighted the importance of basic and applied research activities and the importance of reducing barriers to innovation. Other Administration initiatives include:

- Continuing implementation of the National Cooperative Research Act (NRCA) of 1984, which enables private companies to form research alliances without fear of antitrust violations.

- Proposed legislation to expand the NRCA to include joint production ventures.

- Redeployment of the National Weapons Laboratories' assets in favor of broader (non-defense) objectives.

o However, the Administration is opposed to any sort of industrial policy in which the government, not the market, would pick winners and losers.

- The government possesses no special expertise in this area relative to the private sector.

- We remain competitive, world leaders in many technology based industries -- pharmaceuticals, aerospace, and computers -- notwithstanding our lack of an industrial policy.

- "Success cases" of foreign government support for particular high-technology industries are not as successful as they might appear to be.

  - For example, Airbus has become prominent at the cost of billions of dollars in government subsidies. These have benefited a small group of

producers while reducing the welfare of a much larger group of taxpayers.

- For every "successful" government-supported high-technology industry, there may be various outright failures that never become publicized.

Improved Labor Quality

o Improved labor quality is considered, along with capital investment and technological innovation, to be the third major factor underlying increases in productivity.

o Higher and improved levels of schooling should lead to higher worker productivity. The Administration has made improvements in the nation's educational system a high priority.

- The Administration has proposed a record $34.9 billion in funds for the Education Department and Head Start.

- In April 1991 the President announced his AMERICA 2000 education reform strategy, aimed at helping communities achieve the National Education Goals by the year 2000.

- The Administration has advanced various proposals to improve the quality of schooling by increasing choices of schooling available to middle and low income families.

o Through the Job Training 2000 initiative, the Administration proposed to overhaul the current fragmented, inefficient Federal job training program.

Increasing the Role of Market Forces

o The government can substantially enhance the role of market forces through reduction of government regulation of the economy. This will allow competition to determine the amount of goods and services produced and the prices at which these are transacted. It also promotes production on a least-cost basis, and the channelling of investment into the most productive projects.

o As part of an on-going effort to widen the role of market forces, the President's Council on Competitiveness reviews government regulations to ensure they are cost effective and minimize burdens on the economy.

o In his State of the Union Address in January 1992, the President announced a 90-day moratorium on new regulations (which was later extended an additional 180 days). All government agencies were instructed to evaluate existing regulations with regard to their effectiveness and their

burden on private sector costs, and to take actions to reduce these burdens.

- The estimated annual cost savings from actions announced during the 90-day period ultimately should generate savings of $15 to $20 billion.

COMMENTS ON SELECTED PROVISIONS OF H.R. 5229 AND H.R. 5230

o H.R. 5229 is the Fundamental Competitiveness Act of 1992. H.R. 5230 is the American Technology and Competitiveness Act.

- H.R. 5229 focuses on providing tax incentives for small businesses and for R&D activities.

- H.R. 5230 is a more ambitious bill that would substantially escalate Federal involvement in commercial R&D and investment.

Tax Policy:

o Both bills include (1) making the R&D tax credit permanent, and (2) indexing capital gains for inflation. These are good.

o Various proposals in H.R. 5229 -- deductibility of dividends, a 10 percent tax credit for new machinery purchases, allowing deductibility of capital losses from corporate income, and creation of an individual tax exemption for interest and dividend income -- may be desireable in principle. However, they are revenue-losers and would have to be considered in conjunction with offsetting revenue measures.

o H.R. 5230 proposes raising revenues through increased taxes on high-income recipients. This reduces the incentive to work and contradicts stated Administration policy.

Legal Policy:

o H.R. 5229 would allow firms participating in joint R&D under the NCRA to jointly produce as well. We support this.

- However, it also would base merger analysis on world market shares, which would be highly inappropriate in many circumstances.

o H.R. 5229 addresses civil justice reform through limits on professional liability unless negligence in proved and criteria for when punitive damages could be awarded. We support these measures.

- It also would put a cap on attorneys' fees, which is more problematic.

o H.R. 5229 would set uniform standards for product seller liability and punitive damages, which also is consistent with Administration policy.

Technology Policy:

o H.R. 5230 seeks the expansion of the present Advanced Technology Program to additional "critical technologies", and the formation of new Federally-funded industry consortia pursuing applied as well as pre-competitive R&D. This is inconsistent with our view of the role of government in R&D.

o H.R. 5230 sets up a Council on Technology and Competitiveness to develop a plan for U.S. leadership in critical technology. The CEA already has voiced opposition to this proposal: it involves picking winners and losers, it replicates the function of existing groups, and would add another layer of bureaucracy.

o H.R. 5230 provides for R&D loans to small and medium-sized businesses at below-market rates, as well as government purchases of equity capital in small R&D firms. These are both inappropriate means of supporting private R&D.

Defense Comparisons

(Billions of Current Dollars)

	1993	1994	1995	1996	1993–96
050 Budget Plan in 1992					
BA	288.4	289.4	292.8	295.2	1165.8
OT	294.1	288.7	289.0	292.1	1163.9
President 1993 Plan (CBO Re–estimate)					
BA	281.0	281.6	284.3	285.7	1132.6
OT	292.2	283.4	282.9	286.1	1144.6
Clinton (estimate)					
BA	264.1	267.3	268.5	261.8	1061.7
OT	281.2	270.9	268.4	265.6	1086.1
Aspin Option C (see below)					
BA	n.a.	n.a.	n.a.	n.a.	1094.2
OT	n.a.	n.a.	n.a.	n.a.	n.a.

Clinton Cuts Relative to the President

Clinton –– Outlays (provided in campaign material)					
Defense cuts	–2.0	–8.5	–10.5	–16.5	–37.5
Intell cuts	–1.0	–1.5	–1.5	–1.5	–5.5
Proc Reform	–5.7	0.0	0.0	0.0	–5.7
Inven Reform	–2.3	–2.5	–2.5	–2.5	–9.8
TOTAL OT	**–11.0**	**–12.5**	**–14.5**	**–20.5**	**–58.5**
OT Prior est. *	0.0	–3.2	–4.2	–5.0	
OT New est. *	–11.0	–9.3	–10.3	–15.5	
TOTAL BA est. *	**–16.9**	**–14.3**	**–15.8**	**–23.9**	**–70.9**

* Estimates based upon 050 Year 1–4 spendout rates of 65%, 19%, 9% and 4%.

Aspin's Alternatives (BA Cuts) Relative to President

	four–fifths of Aspin	Aspin 1993–97
Option D, would cut less than the President's Plan	22.4	28.0
Option C, Aspin's preferred option	–38.4	–48.0
Option B	–58.4	–73.0
Option A	–132.0	–165.0

Clinton's Plan would mean BA cuts of about $71 billion more than what the President has proposed over the 1993–1996 period. Cuts of this magnitude are twice Aspin's preferred option (between Aspin options A and B).

SBC Minority Staff

07/29/92

Defense Related Employment

	Bush 1992	Bush 1996	Clinton 1996	Bush Delta	Clinton Delta	Clinton–Bush
Direct Employment						
Active [1]	1937	1640	1300	−311	−637	−326
Reserve [2]	111	92	70	−19	−41	−22
DoD Civ [3]	940	908	611	−36	−329	−293
Industry [4]	3050	2267	2067	−856	−983	−127
Subtotal Direct	6038	4907	4048	−1222	−1990	−768 ✓
Industry Indirect Employment [5]						
CBO Assumption (0.5 Multiplier)				−428	−492	−64
New Mexico Univ. Assumption (2.0 Multiplier)				−1712	−1966	−254
Total Employment Effects						
With CBO Indirect Employment Assumption				−1650 ✓	−2482	−832 ✓
With New Mexico Indirect Employment Assumption				−2934 ✓	−3956	−1022

Notes:

[1] Active figures for Bush from DoD Comptroller; Clinton based on Aspin Options A and B.

[2] Reserve figures count 10 percent of Selected Reserve as employed (consistent with annual reserve training). Figures for Bush from DoD Comptroller; Clinton based on Aspin Options A and B.

[3] DoD civilian figures for Bush from DoD Comptroller; Clinton based on cuts proportional to active/reserve cuts.

[4] Industry figures for 1992 from DoD Comptroller; Bush 1996 from Defense Budget Project (DBP); Clinton based on DBP.

[5] Industry multipliers based on CBO (2/92) and New Mexico Univ. (7/92) studies.

SBC Minority Staff

07/16/92

UNITED STATES SENATE

Committee on the Budget

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Table of Contents

Testimony 1

Republican Bill H.R. 5229 2

Democratic Bill H.R. 5230 3

Invitation to Testify 4

Administration Initiatives for R&D 5

White House Press Release for R&D 6

Talking Points on U.S. Competitiveness 7

Competitiveness Charts 8

Proposed '93 Budget Sheet for R&D 9

Federal R&D Funding '90--'92 10

Charts: Comparing U.S. and Japan R&D Expenditures 11

STATEMENT BY

MICHAEL J. BOSKIN, CHAIRMAN

PRESIDENT'S COUNCIL OF ECONOMIC ADVISERS

Before the

Committee on Science, Space, and Technology

U.S. House of Representatives

August 5, 1992

U.S. Competitiveness

Introduction

Thank you Chairman Brown and Ranking Member Walker, distinguished members of the Committee, it is a pleasure to be with you today.

Much attention has focused recently upon the economy's short-term performance and problems, particularly the need to strengthen growth to generate jobs rapidly enough to bring down unemployment. These matters are enormously important, and I would be pleased to discuss aspects of them if Members of the Committee so wish, but I have been asked to focus on long-run U.S.

competitiveness. I appreciate the opportunity to discuss these prospects today, and I commend the Committee for taking this longer-term perspective.

The long-term competitiveness of a nation is best reflected by its standard of living. Unlike an individual firm or an industry, there is no readily measurable gauge of competitiveness such as sales growth, market share, or unit cost, let alone an explicit market valuation of the company. For the nation as a whole, the aggregation of millions of citizens who are workers, savers, investors, and consumers, millions of businesses, and numerous industries, the most direct measures would be the standard of living of the population, its growth over time, and its comparison to citizens in other countries. From this perspective, there is both good and bad news. It is not fully appreciated, but American citizens have the highest standard of living in the world, as traditionally measured by gross domestic product per capita (GDP) (see chart 1 for a comparison with Japan and Germany). But the primary foundation of improvements in standards of living are increases in productivity--output per worker. Again, the United States has the highest level of productivity in the world (see chart 2 for a comparison with Japan and Germany). But, productivity growth in the United States has been too sluggish for almost a quarter century (see chart 3).

America has a strong foundation upon which to build its future, but there are serious challenges to surmount if we are to remain the world's strongest economy.

We have to increase national saving and investment. We have to increase workers' skills and provide workers with more capital and better technology. We also have to reduce impediments to the smooth operation of markets. To achieve these goals, the President has proposed growth-oriented programs in the areas of tax policy, financial reform, health care, education, and technology. He also has moved forcefully to reduce the burden of unnecessary government regulation on the American economy.

Defining Competitiveness In a Dynamic, Evolving Economy

The term "competitiveness" has been used in many different ways by many different people, some of them embracing a comprehensive vision of the national interest, others adhering to a more narrow definition of priorities. To some, international competitiveness is measured by the ability of U.S. firms to compete successfully with foreign producers either by producing at home and exporting--so-called "trade competitiveness"--or by locating abroad and competing successfully with foreign firms. However, the competitiveness of the entire economy cannot be defined in terms of the performance of any narrow set of industries. The goods and services exported by a country depend upon its comparative advantage--based upon its resources, labor, and capital and how these are combined to produce goods at the lowest cost. In any evolving, dynamic economy, changes in supply conditions,

world demands, or technology naturally will bring about changes in the competitive performance of specific industries.

However, it can be very misleading to measure the competitiveness of an economy by its balance of trade. In conjunction with other developments, a trade surplus could be either good or bad news; a sign of strength or of weakness. Strong, prosperous countries, such as the United States in the 1980s or Japan after the oil shocks of the 1970s, periodically run current account deficits. Conversely, relatively poor countries such as Romania during the last days of the Ceaucescu regime, can run large surpluses. But I am certain that no one would want to emulate the economic policies that created Romania's surplus and eventually the legacy of poverty that confronts its people today.

Trade flows may, when used in conjunction with a wide array of other indicators, be useful in evaluating our economic performance. Trade flows are not sufficient by themselves to characterize the long-term competitiveness of the American economy, as is obvious from the example of Romania. Hence, it is best in taking a long-run view to focus on conditions across the economy and over periods of time, rather than on the situation of particular industries at a given point in time (although that may well be relevant for other purposes).

In fact, American history contains many examples of industries that have gone through remarkable changes. The cotton industry was once thought of as a preeminent industry in the United States. Its relative decline caused much concern and cries for government intervention. However, other industries, such as railways, steel, and textiles, emerged as leading sectors of the economy.

A more recent example of such change is the evolution of the typewriter industry in the United States. Typewriters were once indispensable in offices. But now, with rapid technological improvement, typewriters have been, by and large, replaced in the United States and in other industrialized nations by cost-competitive and more productive personal computers. No one would dispute the importance today of the personal computer sector--in terms of job creation, earnings, and productivity enhancement--for our overall economic performance.

The replacement of industries in which we no longer have a comparative advantage by industries in which we now have a strong advantage, as well as the rise of more technologically advanced sectors to replace previously important industries represents the natural progress and evolution of a dynamic and flexible economy. There is no doubt that one day today's personal computers will be replaced by more advanced equipment. The point is that we should not define the competitiveness of the U.S. economy exclusively in terms of the performance of some narrow set of industries.

In fact, it is the ability of our economy to respond flexibly to change that has made it the most competitive in the world today. Contrary to many claims that have been made in recent years, the American economy is not in decline, and is not being superseded by other industrial countries. But we cannot take sustained growth at rates sufficient to maintain American economic leadership for granted. It will require major changes in the economy and in economic policy.

Current Situation

With less than 5 percent of the world's population, America produces about a quarter of the world's total GDP. Our GDP per capita was $22,056 in 1990, placing the United States more than 25 percent above Germany and Japan. The United States has the highest absolute level of productivity of any country in the world, with a GDP per employed person of $45,918 in 1990.

The competitive position of the United States actually has improved over the last decade. In 1991, the United States produced a greater share of the industrial output of the OECD countries than it did in 1980.

However, America cannot take sustained, solid economic growth for granted. To maintain our competitive position, we must continue to make progress toward

increasing saving and investment, promoting technological innovation, improving our labor force, and increasing the scope for market forces in the economy.

These policies, if they are sustained, will lead to higher average rates of growth. When small increments to growth rates are compounded over many years, they lead to substantial differences in standards of living. It is the sustained application of appropriate policies that underlies long-term improvements to competitiveness.

I will now address some of the areas in which competitiveness policies can make a difference.

Increasing Saving and Investment

Long-term improvements in competitiveness require a continuing stream of new investment in new capital. Productivity growth and rates of investment are highly correlated. During 1959-73, capital per worker in the private business sector grew 2.4 percent annually while productivity grew by 2.8 percent. During 1973-89, these figures dropped to 0.8 percent and 0.9 percent, respectively. Raising investment rates will be crucial to raising future productivity growth.

High levels of investment, in turn, require high levels of saving. The gross national saving rate of the U.S. economy has declined from over 16 percent in the early 1960s to just under 13 percent in 1990. Clearly, raising national saving must be an important part of the effort to bolster our competitiveness.

One of the keys to ensuring the availability of new capital is sound monetary and fiscal policy. Low and steady inflation will reduce uncertainty and promote investment. A successful fiscal policy over the long term would release resources for private investment and lower the cost of capital. Towards that end, the President has submitted budgets with a focus on both controlling the growth of government spending and, within proposed spending categories, shifting from current consumption to investment.

Tax policies should minimize distortions to incentives to work, save, invest and innovate. The Administration has proposed the introduction of Family Savings Accounts and more flexible IRAs as ways to stimulate personal saving for pre-retirement objectives. To encourage investment, the Administration has proposed a capital gains incentive that reduces the tax on long-term gains to 15.4 percent, a new 15 percent Investment Tax Allowance, and simplified and liberalized treatment of depreciation. The Administration also has proposed the establishment of Enterprise Zones to bring entrepreneurship and opportunity to distressed areas.

Over the long term, a well functioning financial system is essential to ensure that businesses and consumers that rely on credit have access to financing. The Administration's proposals to remove archaic legal barriers, correct weaknesses in deposit insurance, and bolster the FDIC's Bank Insurance Fund were intended to help create a safer, sounder, and more internationally competitive financial system.

Promoting Technological Innovation

Economic growth can be enhanced by policies supporting the development of intellectual capital. Research and development can lead to new products and more efficient production processes that generate employment, productivity growth, and an improved standard of living.

In many areas of technology, the gains from innovation can be captured by private entrepreneurs, so that there are sufficient incentives for private R&D. In these areas, innovation is best pursued by the private sector. This ensures that R&D effort will be directed toward the most productive, market-worthy projects.

At the generic and "pre-competitive" stage of R&D, the fruits of research may be hard to capture, and in fact may benefit others who have not contributed to the cost of the research. In these circumstances, private entrepreneurs would be unlikely to undertake sufficient R&D, and this is where there is an important role for

government-funded activities or special tax provisions to account for this "externality." This year the Administration proposed a record $76 billion R&D budget both for basic research and for applied research and development. To promote private innovation, the Administration consistently has advocated making the R&D tax credit a permanent part of the tax code. Reducing the tax rate on capital gains also would improve the incentives for private R&D.

The Administration consistently has highlighted the importance of basic and applied research activities and the importance of reducing barriers to innovation. Other Administration initiatives include (1) continuing implementation of the National Cooperative Research Act (NCRA) of 1984, which enables private companies to form research alliances without fear of unwarranted antitrust uncertainty; (2) proposed legislation to expand the NCRA to include joint production ventures; and (3) redeployment of the National Weapons Laboratories' assets in favor of broader (non-defense) objectives.

As I noted earlier, when the benefits of R&D can be appropriated by private researchers, the choice and funding of research projects should be left up to the market. This will ensure that resources are channeled into the most productive research opportunities, and this allocation will be policed by the market itself. Even when the benefits to research are not appropriable by the market, this does not

necessarily mean that government should step in. The economic benefits of government-sponsored research must be weighed against their costs. Hence, the role for government-sponsored research in our economy must be considered in light of two standards: appropriability and the balance of costs and benefits.

Improving Labor Quality

Improved labor quality is, along with capital investment and technological innovation, a third major factor underlying increases in productivity. Higher and improved levels of schooling will lead to higher worker productivity. The Administration has made improvements in the nation's educational system a high priority. It has proposed a record $34.9 billion in funds for the Education Department and Head Start. The President's AMERICA 2000 education reform strategy is aimed at helping communities achieve the National Education Goals by the year 2000. The Administration has advanced various proposals to improve the quality of schooling by increasing choices of schooling available to middle and low income families.

Improving labor quality does not stop at the classroom door. Through the Job Training 2000 initiative, the Administration proposes to overhaul the current fragmented, inefficient Federal job training programs. This initiative would improve services to clients, gear training to local needs, ensure quality training and

accountability for outcomes, and allocate funding in the form of vouchers to individuals.

Strengthening the Dynamism and Flexibility of the Private Sector

At the core of the U.S. economy's dynamism and resiliency is the flexibility it derives from reliance on markets. The operation of the marketplace allows competition to determine the amount of goods and services produced and the prices at which these are bought and sold. It also promotes production on a least-cost basis, and the channelling of investment into the most productive projects.

Government rules and regulations, when applied inappropriately, can needlessly add to costs, distort the efficient allocation of resources, reduce the economy's flexibility and disrupt employment. Hence, the performance of the economy can be substantially enhanced through reform of unnecessary government economic regulations.

As part of an ongoing effort to widen the role of market forces, the Administration regularly reviews government regulations to ensure they are cost effective and to minimize the regulatory burdens on the economy. In January 1992, the President announced a 90-day moratorium on new regulations that impede economic growth, which was later extended an additional 120 days. As part of the

moratorium, all government agencies were instructed to evaluate existing regulations with regard to their effectiveness and their effect on private sector costs, and to take actions to reduce these burdens in a manner consistent with the underlying statutes and protecting public health and safety.

The economy's performance can be directly improved by reforming regulations as well as eliminating them. Regulations can be designed to give firms greater incentives to cut costs and to innovate. For example, in moving to free competition in long-distance telephone service, the FCC has tied some of AT&T's rates to an index that is adjusted for inflation minus a correction for expected improvements in productivity. If AT&T reduces its costs or improves its products, it is allowed to keep some of the profits.

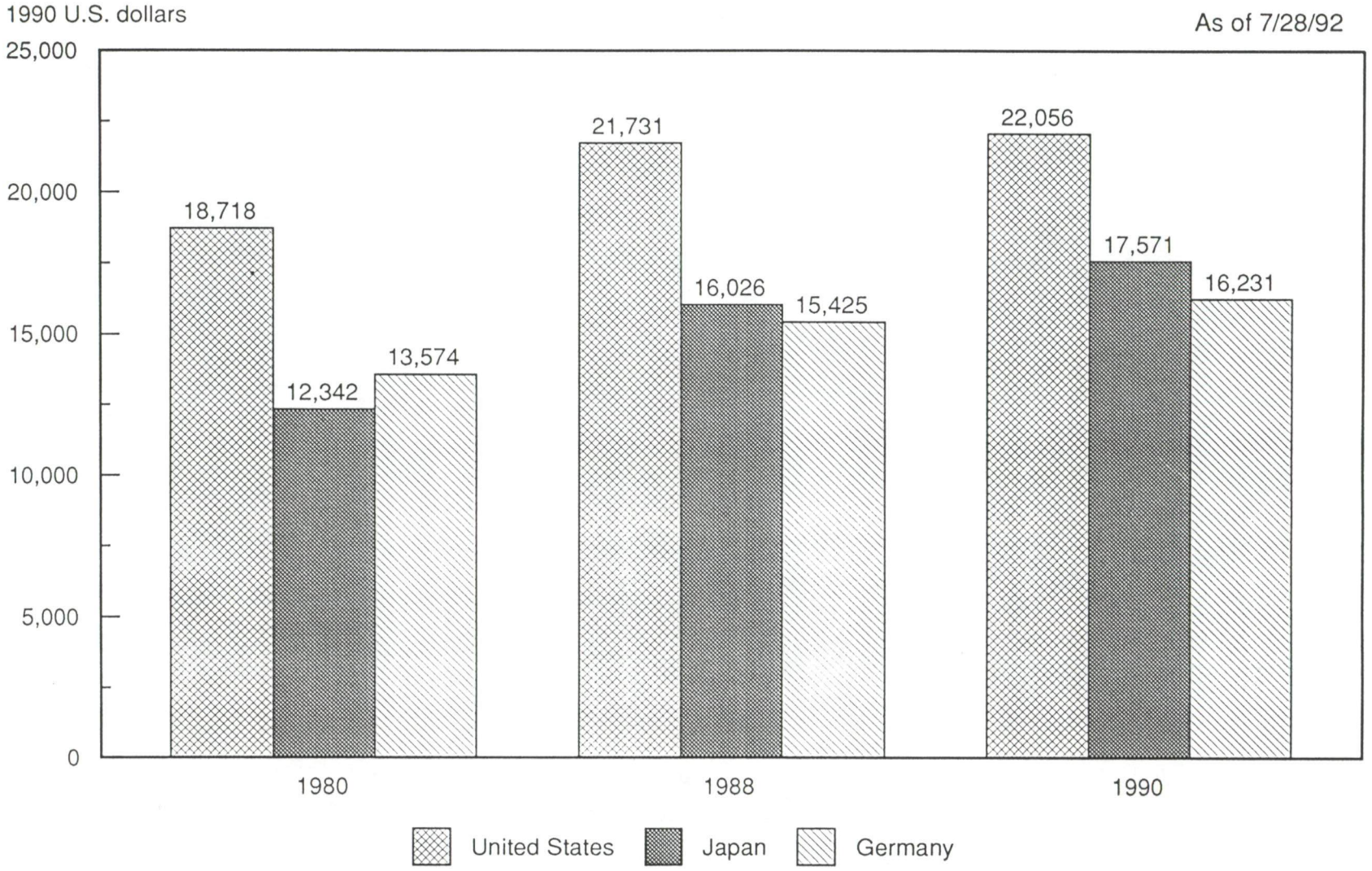
Conclusion

The American economy continues to be the largest and most productive in the world. This wealth gives America every opportunity to continue to grow and prosper in the years ahead. However, this growth cannot be taken for granted. Only if growth-oriented policies, such as those proposed by the President, are put in place and implemented on a sustained basis will our living standards continue to rise while we retain our preeminent position in the global economy.

GDP per capita

Chart 1

As of 7/28/92

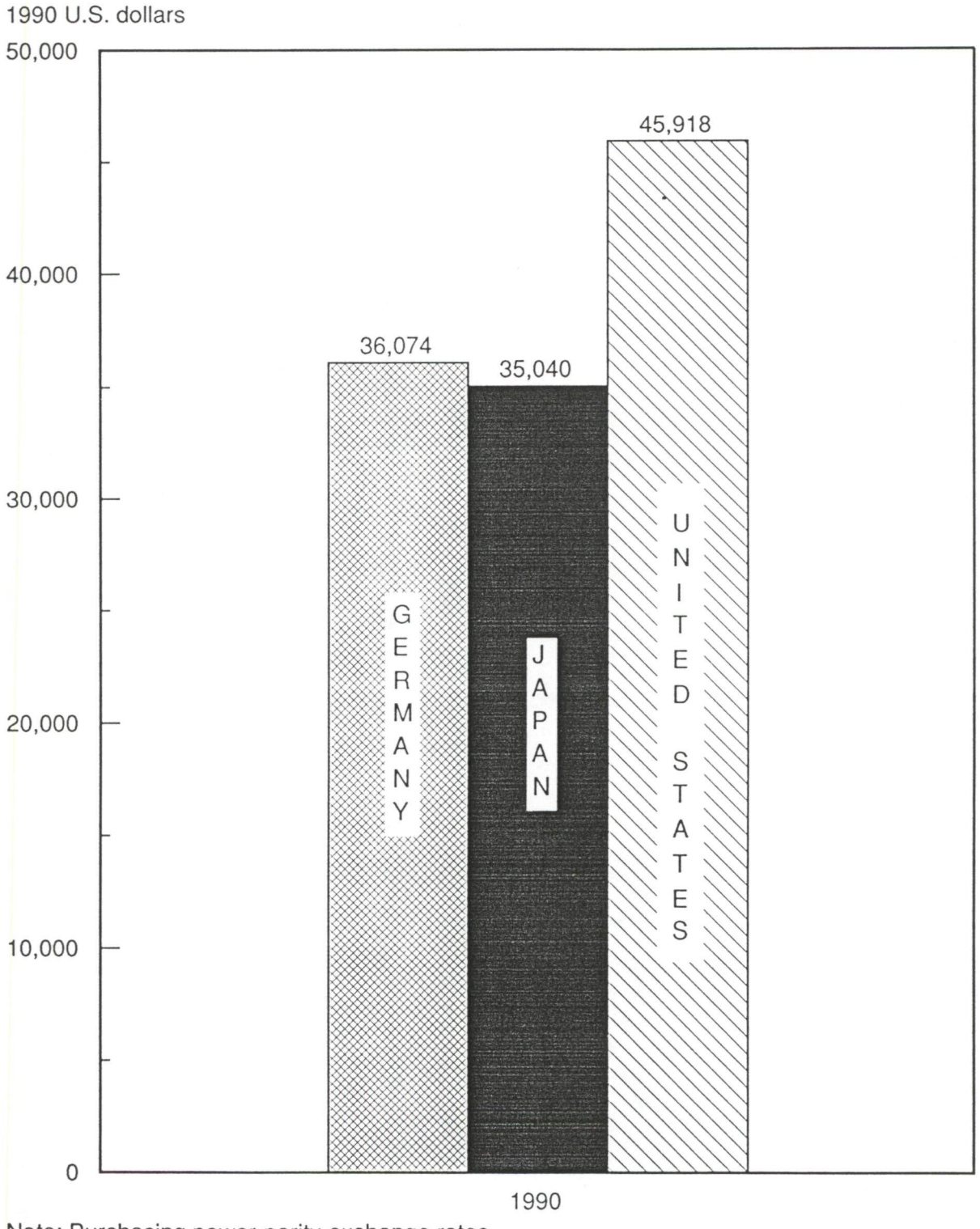


Note: Purchasing power-parity exchange rates.

Source: Bureau of Labor Statistics.

Productivity

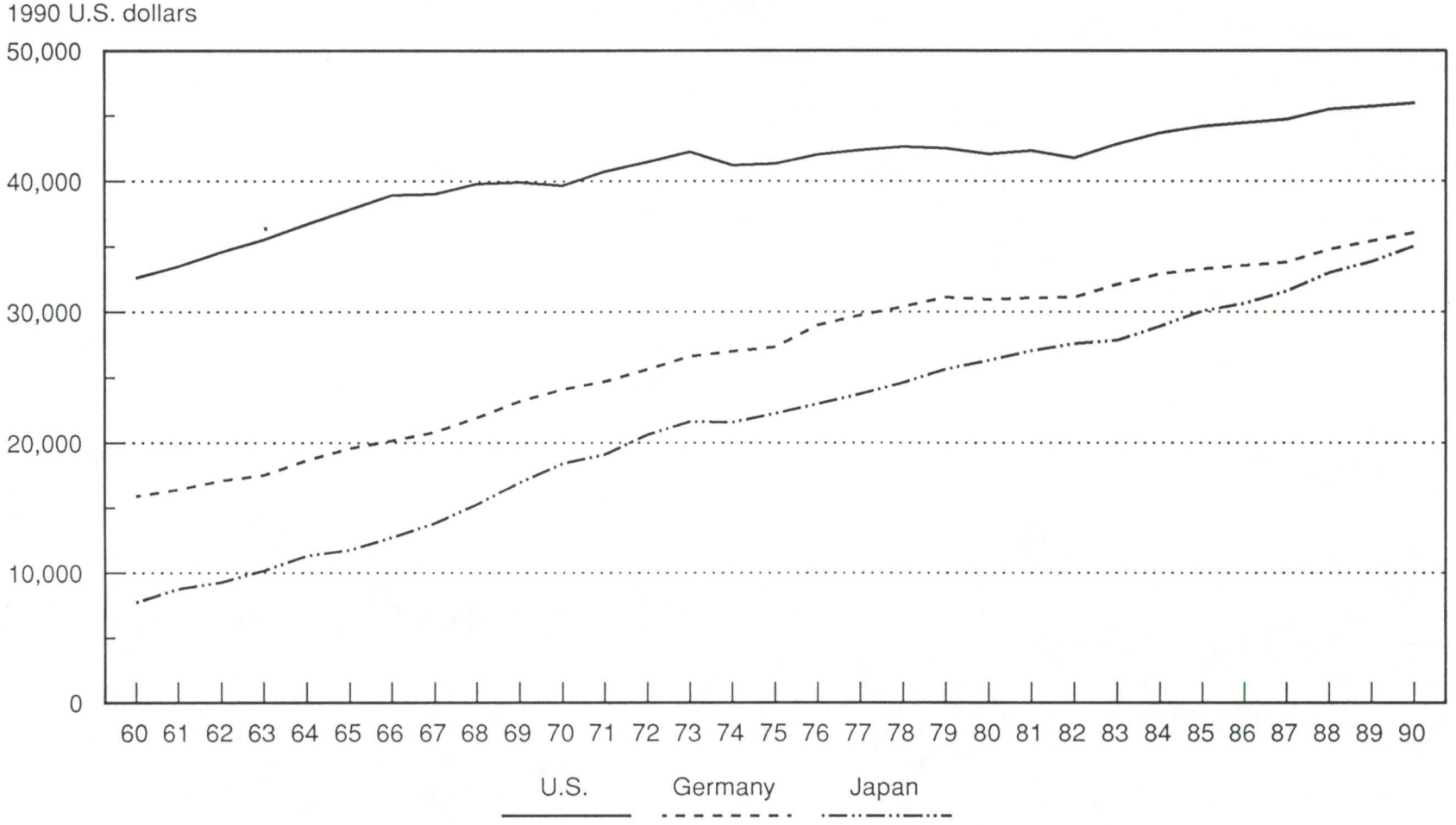
Chart 2



Note: Purchasing power-parity exchange rates.
Productivity is defined as GDP per worker.
Source: Bureau of Labor Statistics.

Trends in Productivity
1960-90

Chart 3



Note: Purchasing power-parity exchange rates.
Productivity is defined as GDP per worker.
Source: Bureau of Labor Statistics.

H.R. 5229

Fundamental Competitiveness Act of 1992

(introduced by Congressman Walker)

The following is an outline of the Fundamental Competitiveness Act of 1992, known as H.R. 5229.

Title I--Public Debt Reduction

Allows taxpayers to designate up to ten percent of their taxes toward debt reduction. For every dollar of tax revenue applied to debt reduction, there would be an equivalent reduction in Federal spending through an across-the-board sequestration excluding net interest, social security, and deposit insurance.

Title II--Capital Formation

This title provides for tax incentives that aim at encouraging private investment, especially in small firms. Provisions include:

1) Making the R&E tax credit permanent.

2) Cutting the capital gains tax through an exclusion that increases with the amount of time an asset is held. This exclusion would be 10% for assets held for only one year, but would scale up to 100% for those held for ten years or more.

3) Instituting a 50% captial gains exclusion for gains derived from initial stock offerings that are held for two years or more.

4) Indexing corporate assets to inflation.

5) Allowing the deductibility of dividend payouts. This would eliminate the present bias descending from the deductibility of interest on corporate debt.

6) An initial 10% tax credit for purchases of new machinery.

7) Treating capital losses derived from investments in manufacturing firms as ordinary losses.

8) Creation of an individual tax exemption of $2,500 for interest and dividend income.

9) Allowing new businesses to deduct capital losses from ordinary income.

Title III--Antitrust

Provisions under this title would base merger analysis on world market shares, and would allow firms participating in joint R&D under the National Cooperative Research Act to jointly produce as well.

Title IV--Business Liability

This title aims at civil justice reform. The first main subtitle deals with professional liability. It would put limits on liability unless negligence were proved, would put a cap on attorneys' fees, and would set criteria for when punitive damages could be awarded. It also encourages the establishment of alternative dispute resolution mechanisms.

The second main subtitle addresses product liability. It would set uniform standards of product seller liability and uniform standards for punitive damages. Joint liability claims would not be allowed, only several. The use of alternative disputed resolution mechanisms is encouraged.

Title V--Long-Term Investment

This title eliminates the requirement for firms to issue quarterly reports. Presumably this would encourage them to maximize in the long term.

Title VI--Competitiveness Risk Assessment

Mandates that agencies examine all costs and benefits of any regulation before its issuance.

Title VII--Department of Manufacturing and Commerce

This would rename the DOC as the Department of Manufacturing and Commerce, and would mandate it to issue a report on the feasibility of consolidating Federal agencies involved in manufacturing R&D.

Title VIII--Amendments to the Stevenson-Wydler Technology Innovation Act of 1980

Makes Technology Transfer Act of 1986 uniform across agencies, and would allow some software developed jointly with industry to be copyrighted.

H.R. 5230

American Technology and Competitiveness Act

(introduced by Congressman Brown)

The following is an annotated outline of the American Technology and Competitiveness Act, known as H.R. 5230.

Title I--General Provisions

A statement of findings, purposes, and goals. Findings include blaming foreign competition for a drop in the real standard of living during the past decade, and attributing "the passive nature of United States civilian technology policy" to the inability "of American companies to compete in certain high technology fields."

Title II--Manufacturing

This title would establish a Commerce-chaired advisory board aimed at helping the diffusion of technology. It proposes a leadership role for Commerce in assisting US industry to develop the modern manufacturing technology necessary to meet foreign competition.

Such an advisory board is unnecessary. Its purpose is served by FCCSET, the Federal Coordinating Council on Science, Engineering, and Technology.

The title would also establish a nationwide network of manufacturing outreach centers. These centers would be technological clearinghouses that would help (especially small- and medium-sized) businesses improve their means of manufacturing. Commerce would be required to submit a 5-year plan for the program to Congress. Funding would be provided by Federal, state, and local governments, and by private contributors.

This is presumably an expansion of the National Technical Information Service (NTIS). Presently, NTIS is a small agency within Commerce that serves as a clearinghouse for information regarding generic technologies. This provision would change its function sharply toward applied technologies.

There are also provisions establishing an Advanced Manufacturing Program. This program would further link the Federal government to private industry through its activities which would include research, development, training and information exchanges.

The President's 1993 proposes $321 million for non-defense Advanced Manufacturing R&D, an increase of 27% over 1992 levels. This funding is limited, however, to a) generic manufacturing technologies with broad applications, and b) technologies which are directly applicable to the procurement needs of government programs.

The Advanced Manufacturing Program proposed here would create collaborative technology development programs to develop and transfer both applied and generic manufacturing technologies.

Last, the title would expand the role of Manufacturing Technology Centers. Presently, the government funds these for up to six years; thereafter, they would be supported by industry contribution or disbanded. This title would eliminate the six-year funding limit and expand the range of services that such centers could offer.

Commerce has opposed the expansion of the MTCs on the grounds that elimination of the six-year horizon would induce the program to pre-empt, rather than enhance, research and development in the private sector.

Title III--Critical Technologies

Subtitle A--Miscellaneous

Notes the success of foreign governments in targeting critical technologies, and cites agriculture and aerospace as two areas where commercial success has resulted from strong Federal support. It further claims that there is a need for a greater Federal role in bridging the gap between the development and application of technologies.

Mandates an annual report, prepared by Commerce, of the effects of international trade negotiations on domestic R&D programs.

This report would duplicate the efforts of other agencies. Specifically, USTR already prepares a similar report.

Subtitle B--Council on Technology and Competitiveness

This subtitle would establish an Executive Office of the President group comprised of senior administration officials which would be tasked with developing a plan to ensure United States' technological leadership in critical technologies.

The CEA has already voiced opposition to this provision, on the grounds that such a council would be unnecessary and duplicative. A letter to Representative Brown has been drafted

to this effect. Interagency coordination of the Administration's R&D policy is presently carried out by FCCSET.

Subtitle C--Advanced Technology Program

The present ATP would be expanded to include "as many critical technologies as is appropriate." This subtitle would also require the establishment of two industry consortia in critical technologies. These consortia would not be limited to generic, precompetitive technology, but would include applied technology.

The ATP is an experimental program that provides matching funds to U.S. businesses for industry-led, generic, precompetitive R&D. The 1993 Budget proposed a 36% increase in the program's funding to $68 million.

Expanding the ATP to include applied technology would clearly be against Administration policy. It would almost certainly lead to "picking winners and losers" within and among industries. A draft SAP which is now circulating presently states the Administration's opposition to this provision, but does not raise it to veto threat level.

Subtitle D--Technology Commercialization Loans

This confers upon the Secretary of Commerce the authority to make loans to small and medium-sized businesses "engaged in research, development, demonstration, or exploitation of advanced technologies" at below-market rates.

Commerce has come out against Subtitle D and E on the grounds that it lacks the expertise to conduct such a financing program. It also notes that such a program already exists under the auspices of the SBA. A draft SAP is presently circulating that recommends veto of the bill unless these two subtitles are deleted.

Subtitle E--Critical Technologies Development

This is an act within an act. It addresses the "problem" of the lack of venture capital available to small R&D firms. It cites "financial distress" in the US as an impediment to the development of critical and other technologies and claims it is, therefore, of "national interest for the Federal Government to take such actions as may be necessary and appropriate" to increase the level of development of these technologies and "correct market failures."

This part of the legislation would allow small R&D firms to qualify for government support in the form of equity capital.

The government would thus subsidize small R&D firms by purchasing blocks of nonvoting, nonparticipating stock.

See above.

Title IV--International Standardization

This provision would expand the Standards Pilot Program and require that Commerce submit a report to Congress concerning the role the Federal Government should play in assisting US companies with conforming to foreign product standards and in developing global standards.

Title V--Miscellaneous Provisions

Title VI--Competitiveness Research, Data Collection, and Evaluation

This sections claims that "Federal programs to enhance competitiveness should yield a greater return on investment" than would private sector funds. It advocates a Federal research program, again directed by Commerce, "to promote innovation and development of new technologies."

Title VII--Educational and Workforce Training

Establishes the goal of furthering the industrial, technical and managerial skills of American youths. For this purpose, several Federal grant programs are proposed. These programs would be administered through the Departments of Commerce, Labor and Education, as well as the National Science Foundation.

Title VIII--Tax and Investment Incentives

Subtitle A--Tax and Investment Incentives

Provides incentives for investment in three ways: (1) the research and experimentation credit is made permanent, (2) capital gains are indexed for inflation, and (3) a 50-percent exclusion for captial gains from investments in certain small businesses is established.

Subtitle B--Revenue Provisions

This section details ways to raise revenue for the grant programs. This is accomplished mainly through taxing high-income taxpayers.

Title IX--National Security Reinvestment

Subtitle A--Advanced Manufacturing Equipment Leasing Corporation

In order to expand the commercial market for Department of Defense contractors, this section proposes the establishment of a corporation, chartered by Defense, which would buy advanced manufacturing equipment from Defense contractors and lease that equipment through the Commerce manufacturing outreach centers.

Subtitle B--Science and Mathematical Educational Reinvestment

This program would attempt to retrain and redirect those displaced military personnel and defense contractor employees into secondary and post-secondary mathematics and science teaching positions.

Subtitle C--National Security Retraining Fellowships

This proposal would again aid displaced defense engineers and scientists by establishing fellowships so that they may broaden their expertise and more easily find civilian employment.

Subtitle D--Multiprogram Laboratory Conversion

Authorizes the Department of Energy to take 10% of Federal R&D funding at multiprogram laboratories and redirect it toward joint R&D projects with private industry.

Subtitle E--Research and Development Spending

This section declares the Congressional belief that any reduction in the R&D budget for Defense should be balanced by equal increases in civilian R&D spending.

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July 9, 1992

The Honorable Michael J. Boskin
Chairman
Council of Economic Advisors
The White House
Washington, DC 20500

Dear Mr. Boskin:

We are pleased to invite you to testify before the Committee on the Administration's views and proposals on U.S. competitiveness from the most comprehensive point of view possible. The hearing can be set to accommodate your schedule before the August recess.

We are most interested in your comments and recommendations in regard to HR 5229, the Fundamental Competitiveness Act of 1992, and HR 5230, the American Technology and Competitiveness Act. These bills attempt to address the root causes of the problem and go well beyond efforts to date. The Science Committee is interested in examining the issue in its totality and not in just receiving testimony on proposals solely within its jurisdiction. This would be an important opportunity for input into an issue that Congress will consider on the floor this session. Specific recommendations regarding Congressional action would be welcomed.

Arrangements and details can be coordinated with Chris Wydler at 225-6684.

Sincerely,

George E. Brown, Jr.
Chairman

Robert S. Walker
Ranking Republican

Bush Administration Initiatives in Research and Development

BASIC RESEARCH

Superconducting Supercollider (SSC)

- o The SSC is a 54-mile circular tunnel in Texas that would enable empirical research in high-energy physics. The 1993 Budget proposes $650 million for construction. Outlays have consistently been considerably less than the President's proposed level (at 75-90%).
  - The House recently voted to discontinue the project.
  - Construction is anticipated to take ten years, if funding is appropriate as the President requests.
  - OMB estimates that construction of the supercollider would support 7,900 jobs.

National Science Foundation

- o NSF funding supports much of the scientific basic research that is conducted within America's universities.
  - One of the Administration's continuing goals has been to double the NSF budget [from what level] by 1994. The 1993 Budget proposes an 18% increase over 1992 levels to this end.
  - NSF outlays have been well over 90% of Budget proposals in each of the past three years.
  - An appropriations subcommittee has recommended $2.7 billion in funding this year, an increase of over 5% from 1992 outlays, but 10% lower than that proposed by the President.

U.S. Global Change Research Program

- o OMB calls this "the most advanced program on global change research issues in the world." This research would help broaden our understanding of such issues as global warming and ozone depletion.
  - The Budget proposes $1.4 billion, an increase of 24%, in funding for 1993.
  - To date, Congress has cut well over $100 million from the President's request.

Agricultural National Research Initiative (NRI)

- o This program funds various basic research initiatives in agriculture, centering on advances in food quality and nutrition.
  - Funding for this program began only in 1991. This year's budget proposes $150 million, an increase of $52 million over 1992.
  - A House-passed appropriations bill holds funding at 1992 levels. The bill, however, includes $36 million in specific research grants not requested by the President and not subject to peer review.

Biotechnology Research

- o Funding supports research for new biotech applications in many fields, including health, manufacturing, and the environment.
  - The Budget proposes $4 billion in funding, an increase of $271 million (a 7% increase) over 1992 outlays.
  - To date, Congress has reduced appropriations by over $40 million below the President's requested level.

Human Genome Project

- o Supports genetic research, with the goal of analyzing "the entire complement of human genetic material at the molecular level" within 15 years.
  - The Budget proposes a 7% funding increase, to $175 million.
  - To date, $7 million out of the proposed $11 million increase has been cut by House appropriation bills.

APPLIED RESEARCH

High Performance Computing and Communications (HPCC)

- o The HPCC initiative provides funding for research and academic training needed to significantly accelerate the availability of the next generation of high performance computing systems and digital communications networks. Because of the small scale of the market and the high cost of research, high performance computing has not attracted the private sector R&D investments typically seen in the broader computer industry.

  - The Budget proposes $803 million for this initiative, an increase of 23% over 1992 levels.

  - Congress has funded the HPCC initiative above the levels requested by the President ever since the program began three years ago.

  - However, House appropriations action to date has cut $82 million from the President's request.

Advanced Materials and Processing

- o This is a new initiative that would fund research on materials synthesis and processing, areas critical to the development of new materials and the qualitative improvement of old ones.

  - The Budget requests $162 million for this initiative.

  - Most of this funding has been effectively eliminated at the subcommittee level within the House.

Advanced Manufacturing R&D

- o This program supports research in non-defense manufacturing, a field that is addressed in both H.R. 5229 and H.R. 5231.

  - The Budget proposes over $1 billion in funding, including $105 for a new manufacturing research initiative under the NSF, and $27 million for National Institute of Standards and Technology (NIST) programs.

  - House appropriation committees have either cut or recommended cuts of almost $100 million to date.

Energy Technology R&D

- o Funding supports research for "high-payoff technologies and strategies to increase the efficiency of energy use." This research was elaborated in the National Energy Strategy.
  - The Budget proposes $914 million, an increase of $140 million.
  - A House appropriations bill cut $46 million from this request, including all funding for maglev train research 40% of funding for natural gas research.

Fusion R&D

- o Funding supports a research partnership with Japan, Russia, and the EC aimed at advances in science and engineering for nuclear fusion technologies.
  - The President requested $360 million for this end, an increase of $23 million over 1992 levels.
  - The House has passed appropriations of $340 million to fund this program.

Transportation R&D

- o Funding supports high priority R&D on aviation and high-speed rail projects under NASA and DOT. Aims at improvements in air traffic control, intelligent vehicle/highway systems, satellite-based navigation, etc. Funding for the National Aerospace Plane is included here.
  - The Budget requests almost $1.4 billion in funding, including $260 million for the National Aerospace Plane.
  - To date, $90 million has been cut in House appropriations committees, including all $80 million requested for NASA's portion of the NAP.

Public Health Research

- o This mainly includes biomedical research, the Women's Health Initiative, and AIDS research.
  - $4.8 billion was proposed for these projects in the budget, including over $1.2 billion for AIDS research and an 80% increase for the Women's Health Initiative.
  - No Congressional action has been undertaken to date.

Space Research and Technology

- This includes research for improvements in robotics, launch vehicles, and other space-related areas.

  - $305 million is proposed for this end, 12% more than 1992 levels.

  - Various Congressional committees have made funding recommendations regarding space research. All have been below the level requested in the Budget.

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release July 30, 1992

The Bush Administration's Policies for an American Technological Revolution

FACT SHEET

The President today met with the scientists, management and workers at the world's largest science and engineering project, the Superconducting Super Collider (SSC). He reaffirmed his continuing strong support of the federal investment in this unprecedented scientific undertaking which will provide broad societal benefits.

The Problem

Technological innovation is essential to sustained economic growth. Those nations that innovate most successfully will compete best in an increasingly integrated global economy.

International competitiveness requires needed investments in basic research and efficiently commercializing the results of that research. It involves a technology policy that recognizes the important role of entrepreneurs, and the need for flexibility in deploying resources to their most efficient uses.

The Bush Administration Principles

Since 1989, President Bush has aggressively pushed a strong science and technology agenda, and he has proposed devoting an unprecedented level of resources to R&D.

The President's science and technology agenda relies on six basic principles:

- The private sector must be free to determine its own research priorities.
- The Federal government must promote sound tax policies that stimulate private sector investment in R&D and technological innovation.
- The Federal government must assure that its regulations do not impede firms from developing products or from bringing safe, new products to market.

- The Federal government must support a strong program of basic and applied R&D, which provides broad societal benefits.

- The Federal government must work cooperatively with the private sector in the development of generic or enabling technologies.

- Federally-funded technology must be transferred swiftly and effectively to the private sector for commercialization.

The President has taken these six principles and developed a comprehensive strategy for enhancing America's technology prowess and competitiveness. It includes:

- **Opening Up Foreign Markets to U.S. Goods;**

- **Accelerating Technology Transfer;**

- **Investing in the Future: Strengthening Our Knowledge Base and Increasing Federal Support for Emerging Technologies;**

- **Educating Our Students for a World of Technology;**

- **Coordinating with the Private Sector in Consortia and Other Arrangements to Develop Generic or Enabling Technologies;**

- **Stimulating Private Sector R&D Through Sound Tax Policies; and**

- **Promoting Technology Through a Sound Regulatory System.**

Opening Up Foreign Markets to U.S. Goods

The U.S. remains the world leader in the export of scientific and technological knowledge. Our high tech exports have increased by two-thirds since 1987, and we enjoy a $37 billion trade surplus of high tech exports with the rest of the world. The President is determined to maintain this position by opening new foreign markets, and by protecting the intellectual property rights of those on the leading edge of scientific and technological innovation.

1. Bilateral Agreements with Japan. The Administration has opened Japanese markets to U.S. high tech goods through trade agreements covering supercomputers, satellites, semiconductors, and amorphous metals.

2. Intellectual Property Rights in the Uruguay Round. The Administration is currently negotiating to ensure that the U.S. science and engineering base is protected from foreign pirating of technology.

3. North American Free Trade Agreement (NAFTA). The Administration is completing the negotiations on the NAFTA which will open new opportunities for American exporters and the free flow of investment capital into the technologically intensive fields of the environment, medicine, agriculture, electronics and telecommunications.

4. U.S./Asia Environmental Partnership. This unprecedented coalition of U.S. and Asian government units, businesses, and community groups is working together to enhance Asia's environment. This will result in the greater export of American technological know-how and equipment.

Accelerating Technology Transfer

The Federal government has invested billions of dollars in creating the world's finest, most advanced research laboratories. This valuable national resource can assist civilian research efforts to investigate and develop commercially viable technologies.

- Technology Transfer. The FY 1993 Budget proposes a significant increase in technology transfer activities, including almost 1,500 Cooperative Research and Development Agreements (CRADAs) between government laboratories and private industry, an increase of 60 percent over the past two years; approximately 4,500 new invention disclosures; 2,000 patent applications; and almost 300 technology licenses awarded.

  The Administration's National Technology Initiative. Ten conferences have been held across the country, and five more are scheduled between now and December 1, 1992. These conferences act as catalysts for creating new partnerships among government, universities and American companies to better translate new technologies into marketable goods and services. A list of the conferences is attached.

- Expanding the Role of the National Laboratories. The FY 1993 Budget proposes that National Laboratories play a greater role in high priority areas of civilian applied R&D by helping to form R&D consortia and other collaborative arrangements led by industry and academia.

- Improving Linkages Between Federal and Industry R&D. Presidential initiatives proposed in the FY 1993 Budget call for increased private sector roles in setting directions for federally funded R&D in critical areas such as high performance computing, advanced materials and biotechnology.

- Fostering Entrepreneurial Activity in Small High Technology Businesses. The Administration has removed impediments to the success and growth of small high technology businesses that are responsible for a disproportionate share of new jobs and innovations.

Investing in the Future: Strengthening Our Knowledge Base and Increasing Federal Support for Emerging Technologies

The Administration remains committed to funding basic and applied research, and to working with industry to develop generic technologies but believes that the market competition is best able to identify winners and losers.

- The President's FY 1993 budget proposes $76.6 billion in research and development. This represents an increase of nearly $2 billion, or 3 percent. Federal civilian R&D would increase by 7 percent. The budget proposes over $14 billion for basic research, an increase of 8 percent, and over $17 billion for civilian applied research and development, an increase of 6 percent.

A. Initiatives in Basic Research

- Superconducting Super Collider (SSC). The FY 1993 Budget proposes $650 million to support continued prototype superconducting magnet development, and construction of support facilities and a test tunnel segment. The budget maintains the 10-year project schedule approved last year.

- Doubling the National Science Foundation (NSF) Budget by 1994. The budget proposes an increase of 18 percent for NSF, including a 21 percent increase for basic research.

- Increasing Support for Individual Investigators. The budget proposes roughly $8 billion, an increase of 9 percent, for individual investigators funded by the Departments of Health and Human Services and Energy and the National Science Foundation.

- U.S. Global Change Research Program (USGCRP). The budget proposes $1.4 billion, an increase of 24 percent, for this initiative to understand more fully the Earth's climate system and to develop sound policies concerning issues such as ozone depletion and global warming.

- Astronomy and Astrophysics. The budget proposes a total of $890 million for these programs. This proposal is consistent with the recommendations of a recent report of the National Research Council.

- Agricultural National Research Initiative (NRI). The budget proposes a 51 percent increase to fund six areas of research: natural resources and the environment; nutrition, food quality and health; plant systems; animal systems; markets and trade policy; and processes antecedent to adding value and developing new products.

- Biotechnology Research. The budget proposes $4 billion, an increase of $271 million or 7 percent, for a new coordinated Presidential initiative in biotechnology involving 12 Federal agencies.

B. Applied Research and Development

- High Performance Computing and Communications (HPCC). The budget proposes $803 million, an increase of 23 percent, for the second year of the President's High Performance Computing Initiative.

- Advanced Material and Processing. The budget proposes $1.8 billion, an increase of 10 percent, for a new Presidential initiative intended to improve the manufacture and performance of materials.

- Advanced Manufacturing R&D. The budget proposes a total of over $1 billion, including $321 million for nondefense-related manufacturing R&D.

- Energy Technology R&D. The budget proposes $914 million, an 18 percent increase, for targeted energy technologies. These investments, guided by the National Energy Strategy, will increase energy efficiency, and generate advances in new electricity technologies.

- Fusion R&D. The budget proposes a 7 percent increase for the development of energy from nuclear fusion. This initiative maintains the U.S. commitment to the International Thermonuclear Experimental Reactor (ITER) engineering design.

- Transportation R&D. The budget proposes nearly $1.4 billion, an increase of 17 percent, for transportation research and development in the fields of high-speed rail, aviation and aeronautics technologies. This proposal includes $260 million for the National Aerospace Plane (NASP) program.

- Space Research and Technology. The budget proposes $305 million, a 12 percent increase, for NASA space technology development.

- Protecting the Public Health. The budget proposes $4.8 billion for applied research and development at the Department of Health and Human Services, including over $1.2 billion for research on Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (AIDS) and an 80 percent increase for the Women's Health Initiative.

C. Expanding the Geographical Frontier of Space

- Space Station Freedom. The budget proposes $2.2 billion, an 11 percent increase, for fabrication and testing of critical components in preparation for first element launch in 1996.

- Improving Access to Space. The budget proposes $5.4 billion for civil space transportation, including the Space Shuttle, commercial expendable launch vehicle services, and other initiatives such as the SpaceHab module for microgravity research.

- New Launch System. NASA and the Department of Defense will propose $250 million for joint development of a new, more flexible and powerful launch system.

- Space Exploration. The budget proposes a total of $586 million for space exploration programs, including the planned mission to Saturn, two new robotic missions to explore the moon, and advancing key technologies needed for future missions to Mars.

Educating Our Students for a World of Technology

Our education system must produce American workers able to compete with any in the world. The National Education Goals call for U.S. students to be first in the world in science and mathematics by the year 2000.

- The President has proposed to Congress $2.09 billion for science and mathematics education programs, an increase of 7 percent over 1992.

- To enhance teacher training, the President has proposed federally-funded math and science training for 770,000 U.S. teachers, almost half of the total number of teachers in those fields.

- The President's budget proposes a series of

demonstration projects using electronic communications technologies to enhance math/science curricula.

Cooperating with the Private Sector in Consortia and Other Arrangements to Develop Generic or Enabling Technologies

It has long been recognized that it is not possible to predict where, when or to whom the benefits of basic research will flow so that no single institution can justify the necessary investment. The same argument applies to the development of generic or enabling technologies. Examples of Federal support for cooperative activity with the private sector in the development of generic technologies include:

- Sematech, a consortium in which the Federal government and the computer industry cooperate to develop technologies for semiconductor chip manufacture that will leapfrog the next generation and allow U.S. industry to recapture a substantial share of the international market for these chips.

- The Battery Consortium, involving the Federal government, major automobile manufacturers and a number of electrical battery companies, is working towards the development of storage batteries for electric automobiles.

- The Automotive Composites Consortium, involving the Federal government (through the National Institute for Standards and Technology) and major automobile manufacturers, is developing and testing composite substitutes for large metal automotive components (e.g. front-end assemblies) that will result in more fuel efficient but still safe automobiles, and technology with much wider industrial application.

Stimulating Private Sector R&D Though Sound Tax Policies

Fostering technological innovation requires tax policies that encourage research, investment, and risk-taking.

- Research and Experimentation Tax Credit. Since taking office, the President has urged the Congress to make permanent the current 20 percent research and experimentation tax credit.

- R&D Allocation Rules. The President has called on the Congress to extend the so-called section 861 R&D Allocation Rules, which foster R&D activities in U.S. labs. When Congress failed to act, the President used his administra-

tive powers to extend this important incentive for 18 months.

- Capital Gains Tax Cut. Since taking office, the President has repeatedly urged the Congress to cut the capital gains tax, which raises both the cost of developing new technologies and the cost of purchasing high tech goods.

Promoting Technology Through A Sound Regulatory System

Federal regulatory policy should protect health and safety and promote competition. Where possible, the Federal government should eliminate unnecessary regulatory burdens that stifle technological innovation and product development.

- Biotechnology. The U.S. is the world leader in biotechnology. This $2 billion domestic industry is expected to increase to $50 billion by the end of the decade. Some of the most promising advances will be in new drugs and gene therapies to treat existing diseases. Biotechnology will also produce healthier foods, safer pesticides, additional energy resources, and innovative environmental clean-up technologies.

- Drug Approval Process. On April 9, 1992, the Administration announced four actions to speed up the availability of new drugs and dramatically reduce unnecessary burdens in the drug development process: accelerated approval for "breakthrough" drugs for patients with life-threatening or serious illnesses; a new "parallel track" system under which promising new drugs for treating AIDS and other HIV-related diseases will be made widely available as early as possible; external review of some categories of new drug applications by qualified non-government experts; and, streamlined animal testing to reduce the testing time of new human drugs in animals.

- Extending the National Cooperative Research Act (NCRA). The NCRA of 1984 permitted firms to join forces on research projects without the fear of *per se* antitrust violations. The Administration supports legislation to expand the NCRA to permit firms to jointly produce goods.

- Advanced Television. The FCC is moving to promulgate new rules on a standard for high definition television. This standard will likely embrace the digital technologies pioneered by U.S. private sector firms, which has leap-frogged the analog technologies of foreign competitors.

# # #

NATIONAL TECHNOLOGY INITIATIVE CONFERENCES

DATE	LOCATION	TECHNOLOGY FOCUS
2/12/92	Cambridge, MA	Environment, Biotechnology
3/4/92	Austin, TX	Energy (Oil & Gas), Electronics
3/24/92	Orlando, FL	Aerospace, Food
4/9/92	Research Triangle, NC	Biotechnology, Environment
4/23/92	Cleveland, OH	Materials, Advanced Manufacturing
5/14/92	Seattle, WA	Transportation, Environment
5/29/92	Pasadena, CA	Aerospace, Biotechnology, Environment
6/11/92	Golden, CO	Natural Resources, Communications
6/25/92	Kansas City, MO	Agricultural Technology, Advanced Manufacturing
7/9/92	Gaithersburg, MD	Life Sciences, Information Technology
9/15/92	New Brunswick, NJ	Transportation, Electronics
9/25/92	Chicago, IL	Materials, Biotechnology
10/15/92	Palo Alto, CA	Environment, Information Technology
10/27/92	Pittsburgh, PA	Materials, Life Sciences
12/1/92	Baltimore, MD	Transportation, Aerospace

July 30, 1992

TO: MICHAEL BOSKIN

FROM: K.C. FUNG
STEVE KAMIN

SUBJECT: TALKING POINTS ON U.S. COMPETITIVENESS, DRAFT TESTIMONY, AND CHARTS

Introduction

- o Given the attention focused on short-term recovery issues currently, the opportunity to take a longer view is welcome.

- o The long-term competitiveness of the United States is best reflected by our standard of living. The U.S. remains the world's most competitive economy.

- o However, to maintain our position, we must meet serious challenges. We must promote savings, investment, technological innovation, and labor force quality, as well as expand the scope for market forces.

Our Current Competitiveness Position

- o Competitiveness cannot be defined in terms of the short-term performance of any narrow set of industries. A longer-run, economy-wide view must be taken.

- o Our history contains many examples of industries that initially were important to the U.S. economy, but subsequently were lost to us without ill effects.

  - Cotton

  - Typewriters

- o It is our economy's ability to respond flexibly to change that has made it so competitive.

- o The facts do not support the assertion that the United States is in decline. With less than 5 percent of the world's population, America produces more than a quarter of the world's total GNP.

- o Our citizens have the highest standard of living in the world.

  - U.S. GDP per capita of $22,056 in 1990, the latest year for which comparable data are

available, places the United States more than 25 percent above Germany and Japan, based on BLS data that adjust for purchasing power differences.

- The U.S. has the highest absolute level of productivity of any country in the world, with a GNP per employed person of $45,918 in 1990.

- As of 1991, the U.S. produced a larger share of the industrial output of the OECD than it did in 1980.

- The share of manufacturing in U.S. real GDP has risen from the mid-1970s to 1989, the latest available date.

- However, steps must be taken to maintain our competitive position. These will not boost our income immediately, but will make a big difference if sustained over time.

Increasing Savings and Investment

- Sustained U.S. economic growth requires a continuing stream of investment in new capital, which in turn requires a high rate of savings.

  - Productivity growth and investment rates are highly correlated. During 1959-73, capital per worker in the private business sector grew 2.4 percent annually while productivity grew by 2.8 percent. During 1973-89, these figures dropped to 0.8 percent and 0.9 percent, respectively.

  - The gross rate of savings in the U.S. economy moved from 16 percent in the early 1960s to under 13 percent in 1990.

- One of the keys to ensure the availability of new capital is sound monetary and fiscal policy. Low and steady inflation will reduce uncertainty and promote investment. A successful fiscal policy over the long term would, by balancing the budget, release resources for private investment and lower the cost of capital.

  - The President has submitted budgets with a focus on both controlling the growth of government spending and, within proposed spending categories, shifting from current consumption to investment.

- Tax policy should aim to minimize distortions to incentives to save and invest.

- The Administration has proposed the introduction of Family Savings Accounts as a way to stimulate personal saving for pre-retirement objectives.

- The Administration has proposed (1) a capital gains incentive that reduces the tax on long-term gains to 15.4 percent; (2) a new 15 percent Investment Tax Allowance; and (3) simplified and liberalized treatment of depreciation.

- The Administration also has proposed the establishment of Enterprise Zones to bring entrepreneurship and opportunity to distressed areas.

o Over the long term, a well functioning financial system is essential to ensure that business and consumers that rely on credit have access to the funds they need.

Promoting Technological Innovation

o Economic growth is enhanced by policies supporting the development of our intellectual capital.

o In areas where the gains from innovation can be captured by private entrepreneurs, so that there are sufficient incentives for private R&D, innovation is best pursued by the private sector. This ensures that R&D effort will be directed toward the most productive, market-worthy projects.

- To promote private innovation, the Administration has consistently advocated making the R&D tax credit a permanent part of the tax code.

- Reducing the tax rate on capital gains would also improve the incentives for private R&D.

o At the pre-competitive stage of R&D, when gains to innovation are hard to capture and private R&D therefore would be unlikely to occur, there is an important role for government-funded research activities.

- This year we proposed a record $76.6 billion R&D budget both for basic research and for applied research and development. (check)

o The Administration has consistently highlighted the importance of basic and applied research activities and the importance of reducing barriers to innovation. Other Administration initiatives include:

- Continuing implementation of the National Cooperative Research Act (NCRA) of 1984, which enables private companies to form research alliances without fear of antitrust violations.

- Proposed legislation to expand the NCRA to include joint production ventures.

- Redeployment of the National Weapons Laboratories' assets in favor of broader (non-defense) objectives.

o A list of technology initiative advanced by the President is attached.

o The Administration is opposed to any sort of industrial policy in which the government, not the market, would pick winners and losers.

  - The government possesses no special expertise in this area relative to the private sector.

  - We remain competitive, world leaders in many technology based industries -- pharmaceuticals, aerospace, and computers -- notwithstanding our lack of an industrial policy.

  - "Success cases" of foreign government support for particular high-technology industries are not as successful as they might appear to be.

    - For example, Airbus has become prominent at the cost of billions of dollars in government subsidies. These have benefited a small group of producers while reducing the welfare of a much larger group of taxpayers.

    - Japanese industrial policy support of the steel industrial yielded very low returns on investment in that sector.

    - For every "successful" government-supported high-technology industry, there may be various outright failures that never become publicized.

Improving Labor Quality

o Improved labor quality is considered, along with capital investment and technological innovation, to be the third major factor underlying increases in productivity.

o Higher and improved levels of schooling should lead to higher worker productivity. The Administration has made improvements in the nation's educational system a high priority.

- The Administration has proposed a record $34.9 billion in funds for the Education Department and Head Start.

- The President's AMERICA 2000 education reform strategy aims at helping communities achieve the National Education Goals by the year 2000.

- The Administration has advanced various proposals to improve the quality of schooling by increasing choices of schooling available to middle and low income families.

o Through the Job Training 2000 initiative, the Administration proposed to overhaul the current fragmented, inefficient Federal job training program.

Increasing the Role of Market Forces

o The government can substantially enhance the role of market forces through reduction of government regulation of the economy. This will allow competition to determine the amount of goods and services produced and the prices at which these are transacted. It also promotes production on a least-cost basis, and the channelling of investment into the most productive projects.

o As part of an on-going effort to widen the role of market forces, the Administration reviews government regulations to ensure they are cost effective and minimize burdens on the economy.

o In January 1992, the President announced a 90-day moratorium on new regulations (which was later extended an additional 120 days). All government agencies were instructed to evaluate existing regulations with regard to their effectiveness and their burden on private sector costs, and to take actions to reduce these burdens.

- The estimated annual cost savings from actions announced during the 90-day period ultimately should generate savings of $15 to $20 billion.

o Market forces can be given greater play by reforming regulations as well as by eliminating them.

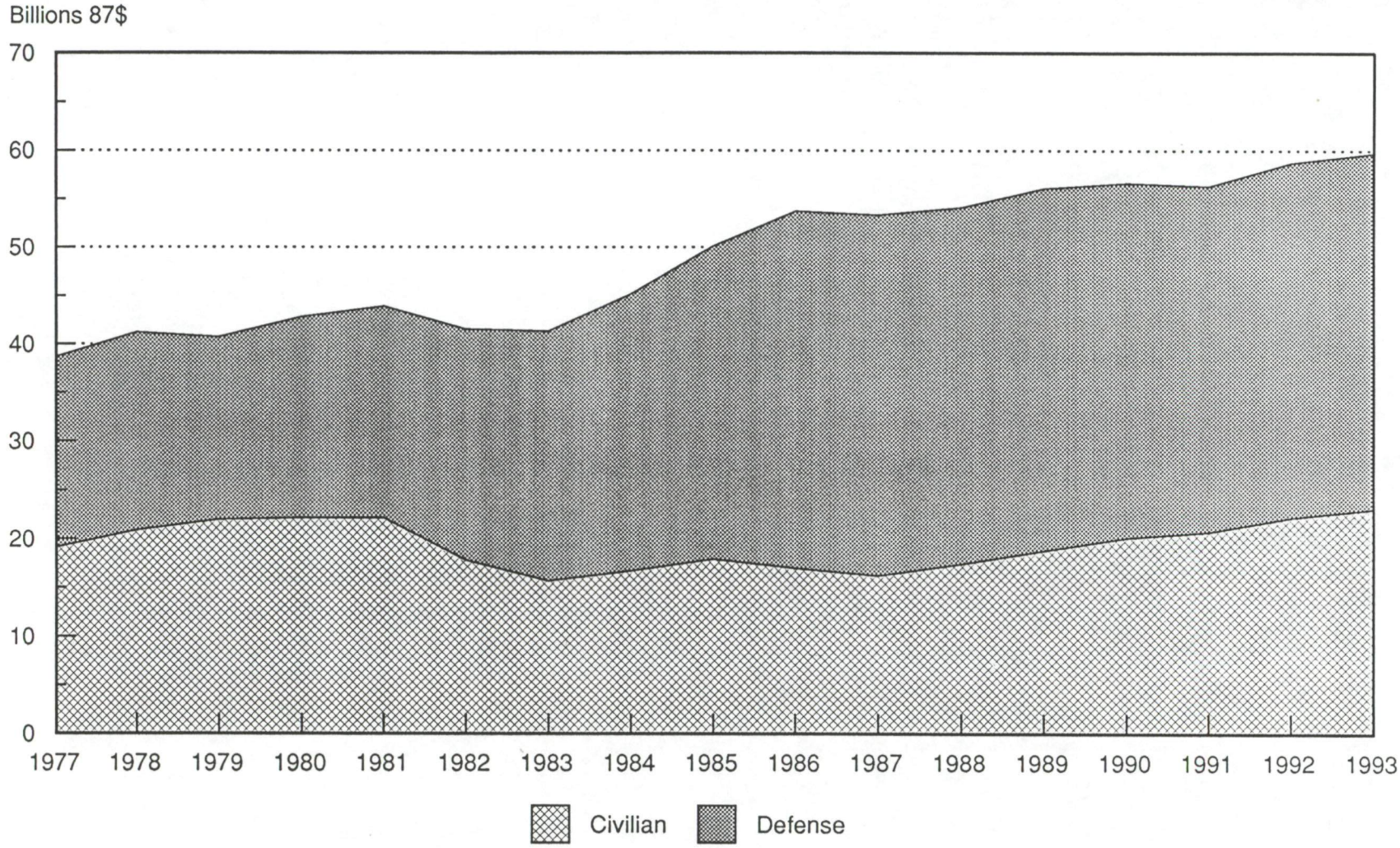
Conclusion

o Only if growth-oriented policies are in place will America retain its competitive position.

o However, not only must policies support growth, but they must be sound -- market oriented -- as well.

U.S. Federal R&D Outlays

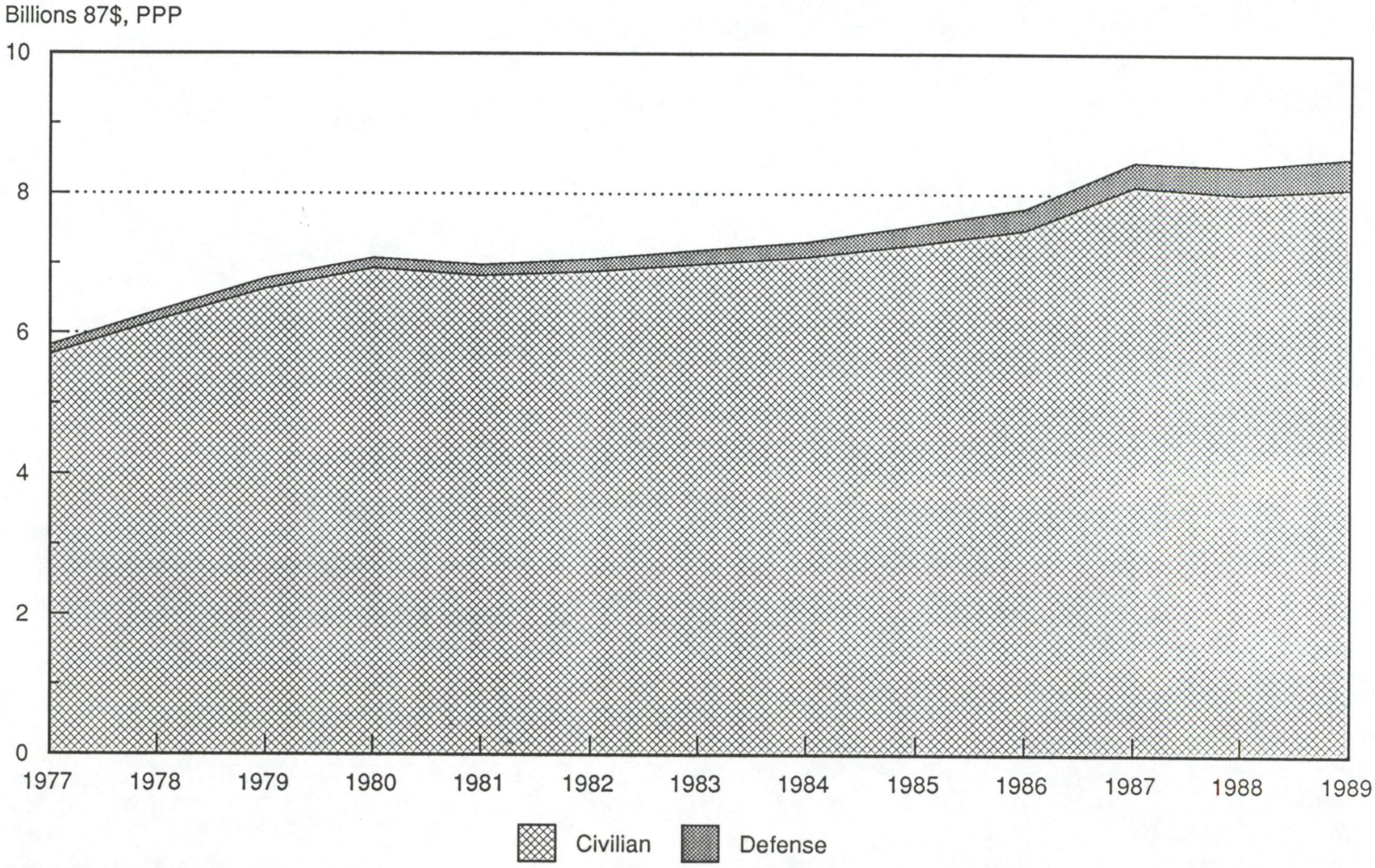
(fiscal years, in 1987 dollars)



Source: National Science Foundation, OMB.
Note: 1992 & 1993 levels are estimates.

Japanese Government R&D Expenditures

(calendar years, in 1987 dollars)



Source: National Science Foundation.

Table 6–2. THE BUDGET PROPOSES AN INCREASE OF $2.5 BILLION IN FEDERAL INVESTMENT IN RESEARCH AND DEVELOPMENT

(Dollar amounts in millions)

Department or Agency	Budget Authority					Outlays				
	1989 Actual	1992 Enacted	1993 Proposed	Dollar Change: 1992 to 1993	Percent Change: 1992 to 1993	1989 Actual	1992 Enacted	1993 Proposed	Dollar Change: 1992 to 1993	Percent Change: 1992 to 1993
Government-wide totals:										
Conduct of R&D:										
Basic Research	10,615	13,254	14,322	+1,068	+8%	10,255	12,491	13,405	+914	+7%
Civilian	9,650	12,053	13,086	+1,034	+9%	9,312	11,325	12,142	+817	+7%
Defense [1]	965	1,201	1,236	+35	+3%	943	1,166	1,263	+97	+8%
Applied Research and Development	51,298	57,839	59,302	+1,463	+3%	50,626	53,890	56,253	+2,363	+4%
Civilian	11,620	16,257	17,313	+1,056	+6%	11,030	15,132	15,958	+826	+5%
Defense [1]	39,678	41,582	41,988	+406	+1%	39,596	38,758	40,295	+1,538	+4%
Subtotal, Conduct of R&D	61,913	71,093	73,624	+2,531	+4%	60,881	66,381	69,658	+3,277	+5%
R&D Facilities	2,293	3,498	2,933	−565	−16%	2,054	3,286	3,189	−96	−3%
Total, Conduct of R&D and Facilities [2]	64,206	74,592	76,557	+1,965	+3%	62,935	69,666	72,847	+3,181	+5%
Conduct of R&D by Agency:										
Defense-military	38,031	40,043	40,509	+466	+1%	37,545	37,175	38,847	+1,672	+4%
Health and Human Services	7,894	10,216	10,649	+433	+4%	7,486	9,468	10,199	+731	+8%
Energy	5,362	6,514	6,578	+65	+1%	5,692	6,195	6,219	+23	—
National Aeronautics and Space Administration	5,303	7,706	8,673	+967	+13%	4,975	7,272	7,710	+438	+6%
National Science Foundation	1,671	1,967	2,375	+408	+21%	1,557	1,840	2,056	+216	+12%
Agriculture	1,050	1,328	1,332	+4	—	1,021	1,245	1,285	+40	+3%
Interior	467	583	552	−31	−5%	478	580	546	−34	−6%
Environmental Protection Agency	389	496	525	+29	+6%	345	454	495	+41	+9%
Commerce	417	580	614	+34	+6%	363	542	582	+40	+7%
Transportation	313	446	498	+52	+12%	322	410	457	+47	+11%
Agency for International Development	261	322	325	+3	+1%	379	314	303	−11	−4%
Veterans Affairs	212	230	245	+15	+7%	187	247	262	+14	+6%
Other Agencies [3]	542	662	750	+88	+13%	532	639	699	+60	+9%

[1] Includes the military-related programs of the Departments of Defense and Energy.

[2] Components may not add to totals because of rounding.

[3] 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.

CHECKED.

FEDERAL R&D FUNDING, 1990-1992
(fiscal years, in millions of dollars)

Government-Wide Totals: All Research and Development (Outlays, Including Defense)

	1992			1991			1990		
	Enacted	Proposed	Percent	Enacted	Proposed	Percent	Enacted	Proposed	Percent
Basic	12,491	12,414	100.62	11,597	11,886	97.57	10,961	10,878	100.76
Applied	54,052	55,650	97.13	51,839	53,745	96.45	51,124	53,540	95.49
R&D Facilities	3,286	3,264	100.67	2,845	2,738	103.91	2,590	2,315	111.88
Total	69,828	71,329	97.90	66,281	68,370	96.94	64,674	66,732	96.92

Government-Wide Totals: Civilian Research and Development (Outlays)

	1992			1991			1990		
	Enacted	Proposed	Percent	Enacted	Proposed	Percent	Enacted	Proposed	Percent
Basic	11,325	11,362	99.67	10,623	10,911	97.36	10,016	N/A	
Applied	15,132	15,503	97.61	14,045	14,449	97.20	12,321	N/A	
R&D Facilities	3,286	3,264	100.67	2,845	2,738	103.91	2,590	2,315	111.88
Total	29,743	30,129	98.72	27,513	28,098	97.92	24,927	24,752	100.71

Selected R&D Initiatives (Budget Authority)

	1992			1991			1990		
	Enacted	Proposed	Percent	Enacted	Proposed	Percent	Enacted	Proposed	Percent
Basic Research:									
Supercollider	484	534	90.64	243	318	76.42	218	250	87.20
NSF Budget	2,572	2,722	94.49	2,316	2,383	97.19	2,084	2,171	95.99
Applied Research:									
HPCC	655	638	102.66	489	469	104.26			
Adv. Materials		1,310		1,316					
HIV/AIDS		1,210		1,152					
NIST R&D	247	248	99.60	215					

R&D -- Japanese Government (billions 87$, PPP)

Year	Total	Civilian	Defense
1977	5.81	5.69	0.13
1978	6.31	6.17	0.14
1979	6.77	6.63	0.15
1980	7.09	6.93	0.15
1981	6.99	6.82	0.16
1982	7.06	6.88	0.18
1983	7.19	6.99	0.20
1984	7.31	7.09	0.22
1985	7.55	7.27	0.28
1986	7.80	7.48	0.31
1987	8.46	8.11	0.35
1988	8.39	8.00	0.39
1989	8.53	8.09	0.44
1990			

R&D -- Japanese Government (billions $)

GDP	Total	Defense	Civilian	% GDP
656.6	3.511	0.078	3.433	0.52%
738.8	4.053	0.087	3.966	0.54%
849.2	4.753	0.102	4.651	0.55%
960.7	5.39	0.117	5.273	0.55%
1089.3	5.787	0.136	5.651	0.52%
1196.2	6.24	0.158	6.082	0.51%
1270	6.52	0.182	6.338	0.50%
1371.5	6.795	0.204	6.591	0.48%
1478.7	7.209	0.271	6.938	0.47%
1550.1	7.6	0.306	7.294	0.47%
1662.2	8.463	0.354	8.109	0.49%
1823.8	8.692	0.406	8.286	0.45%
1981	9.14	0.466	8.674	0.44%
2178.5				

R&D-- U.S. Federal Government (billions 87$)

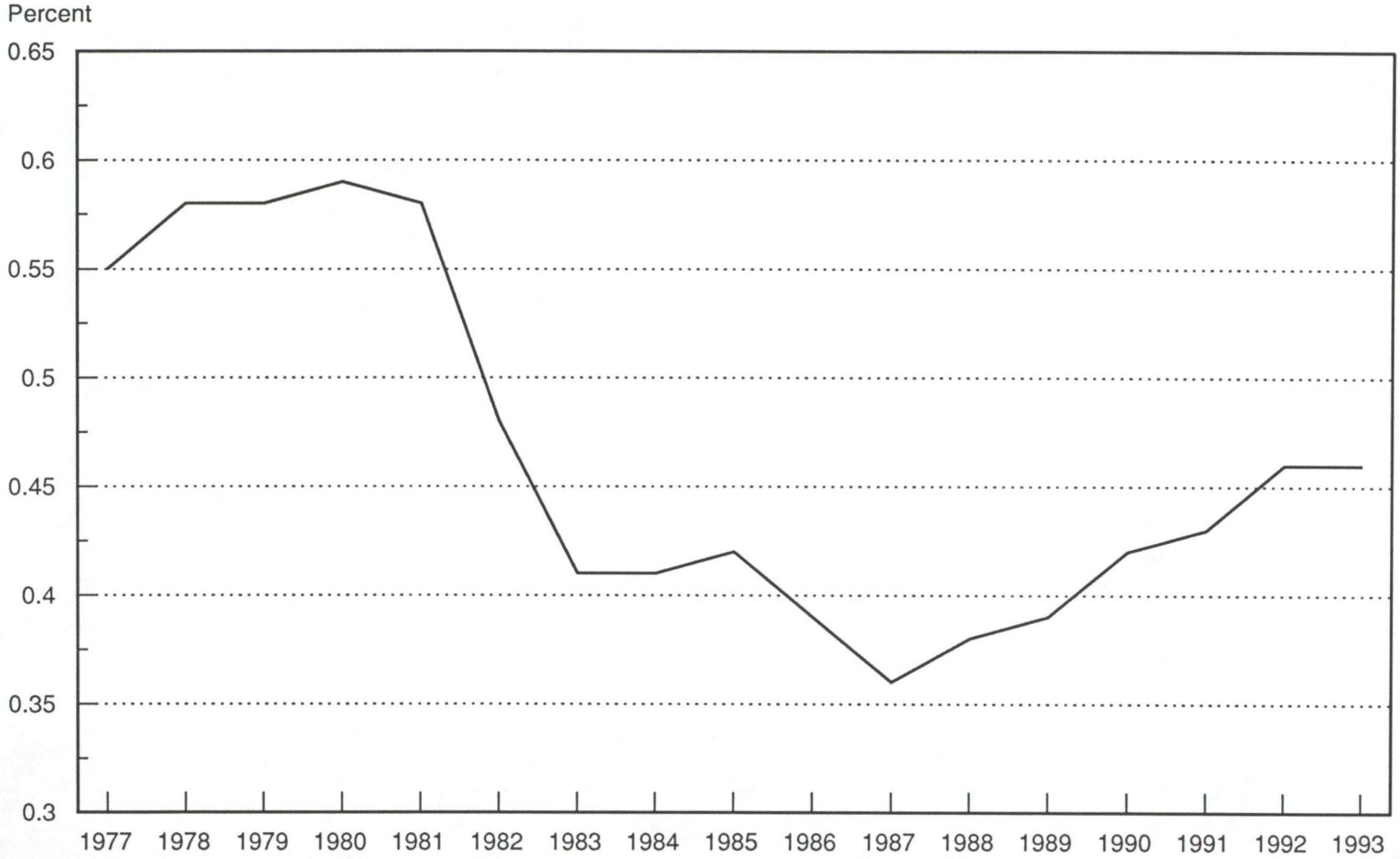
Year	Total	Civilian	Defense
1977	38.7	19.1	19.6
1978	41.2	20.9	20.3
1979	40.7	22.0	18.7
1980	42.8	22.1	20.7
1981	43.9	22.1	21.8
1982	41.5	17.8	23.7
1983	41.3	15.7	25.6
1984	45.1	16.7	28.4
1985	50.1	17.9	32.2
1986	53.7	17.0	36.7
1987	53.3	16.2	37.1
1988	54.1	17.4	36.7
1989	56.1	18.8	37.3
1990	56.6	20.1	36.5
1991	56.3	20.7	35.6
1992	58.7	22.2	36.5
1993	59.7	23.1	36.6

R&D-- U.S. Federal Government (billions $)

GDP	Civilian	% GDP
1919.7	10.569	0.55%
2156.4	12.455	0.58%
2431.9	14.196	0.58%
2644.5	15.592	0.59%
2964.7	17.231	0.58%
3124.9	14.85	0.48%
3317.0	13.602	0.41%
3696.7	15.221	0.41%
3970.9	16.856	0.42%
4219.6	16.485	0.39%
4453.3	16.159	0.36%
4810.0	18.068	0.38%
5170.1	20.394	0.39%
5459.5	22.732	0.42%
5626.6	24.296	0.43%
5865.0	26.824	0.46%
6231.6	28.847	0.46%

U.S. Federal Civilian R&D as Percent of GDP

(fiscal years)

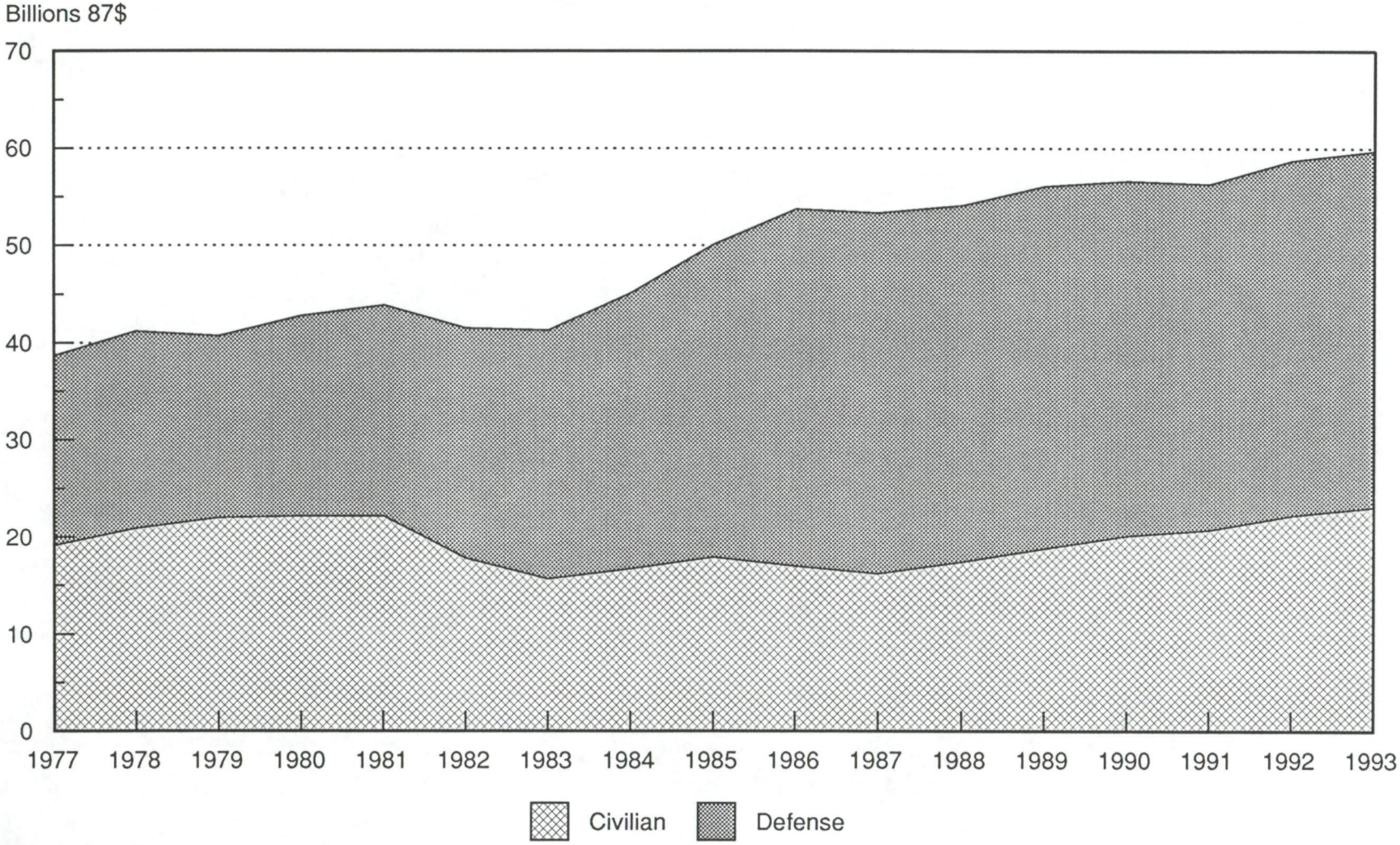


Source: National Science Foundation, OMB.

Note: 1992 & 1993 levels are estimates.

U.S. Federal R&D Outlays

(fiscal years, in 1987 dollars)

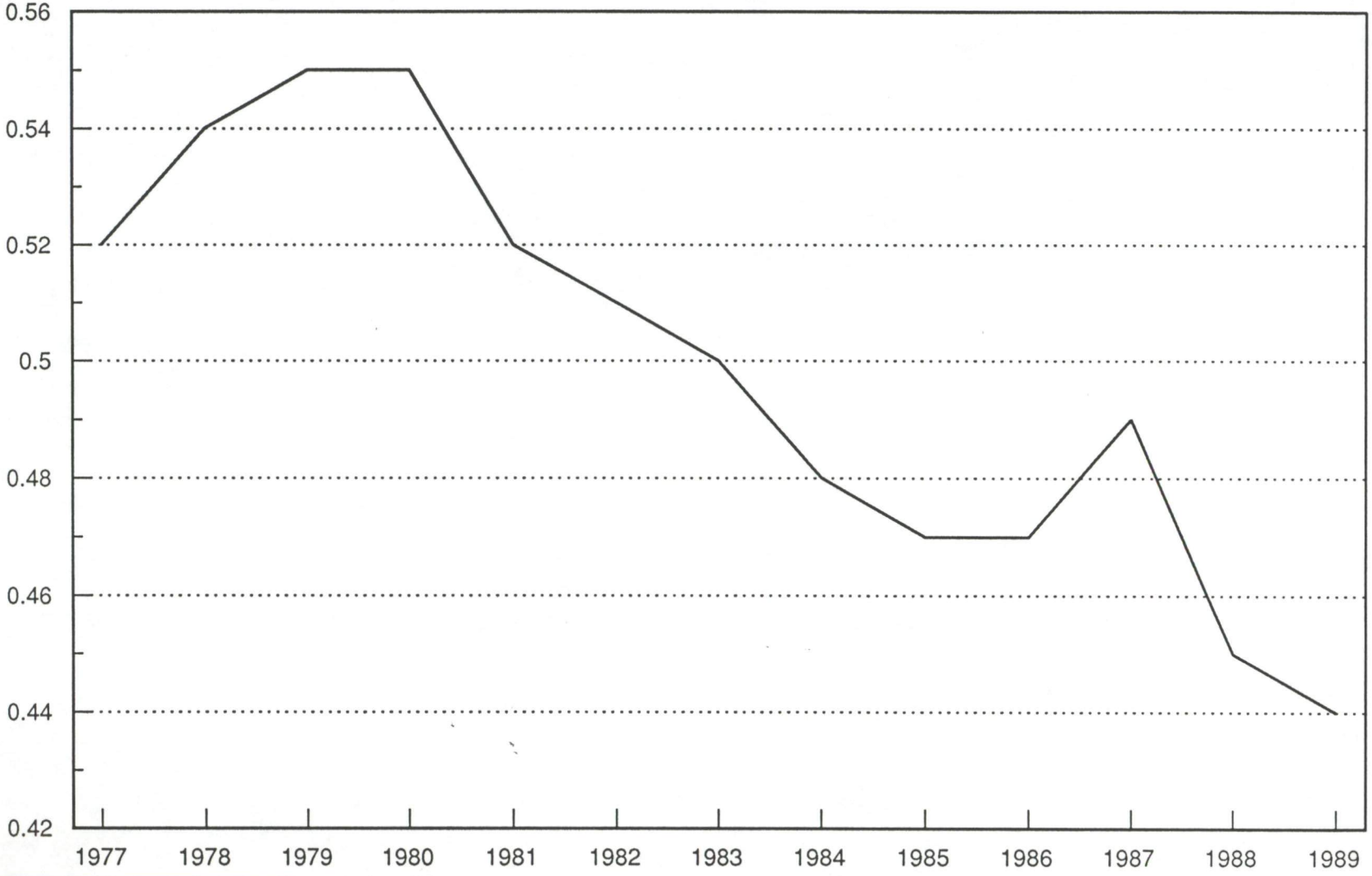


Source: National Science Foundation, OMB.

Note: 1992 & 1993 levels are estimates.

Japanese Gov't Civilian R&D as Percent of GDP

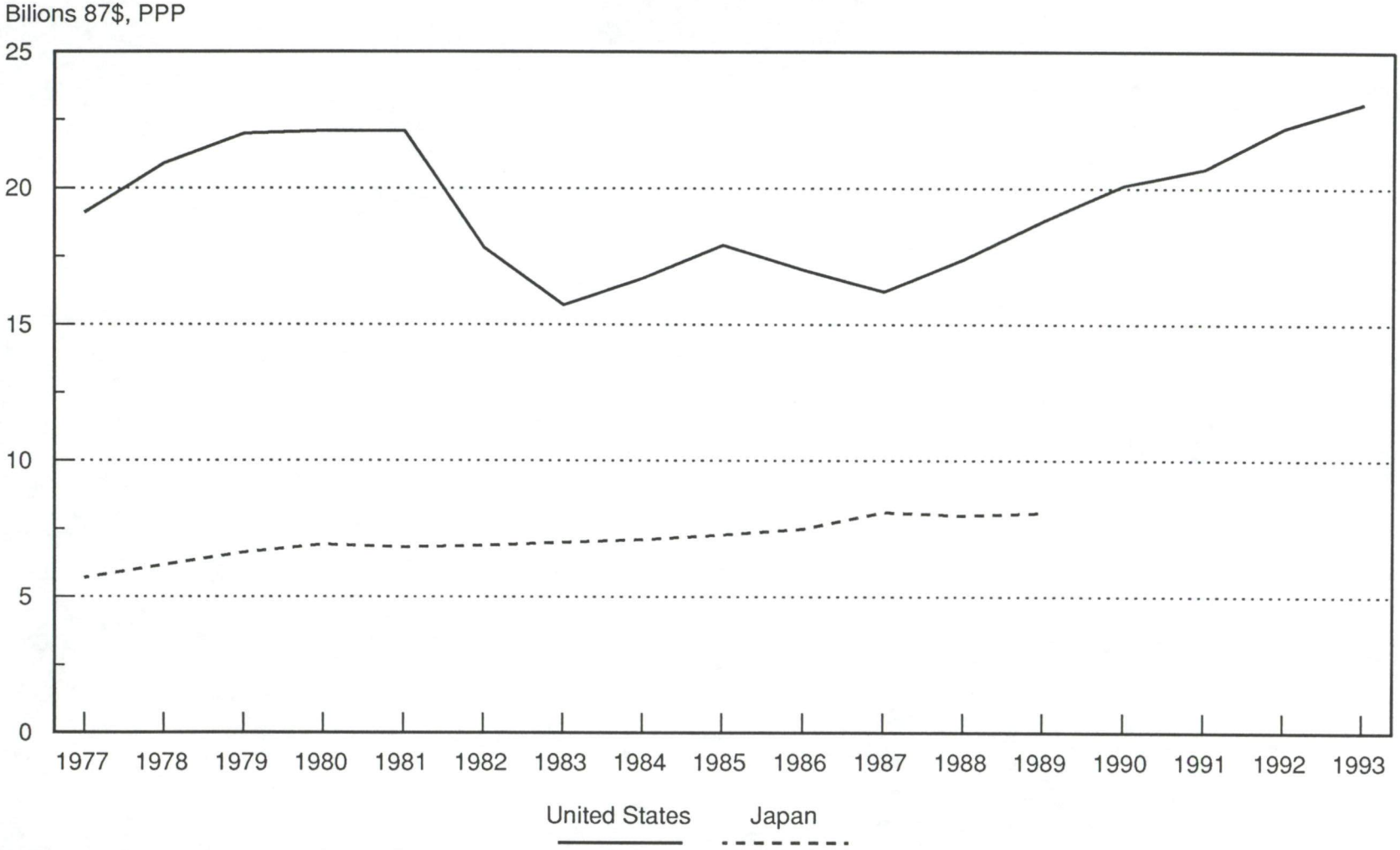
(calendar years)



Source: National Science Foundation, [Haver]

Civilian R&D Expenditures

(in 1987 dollars)

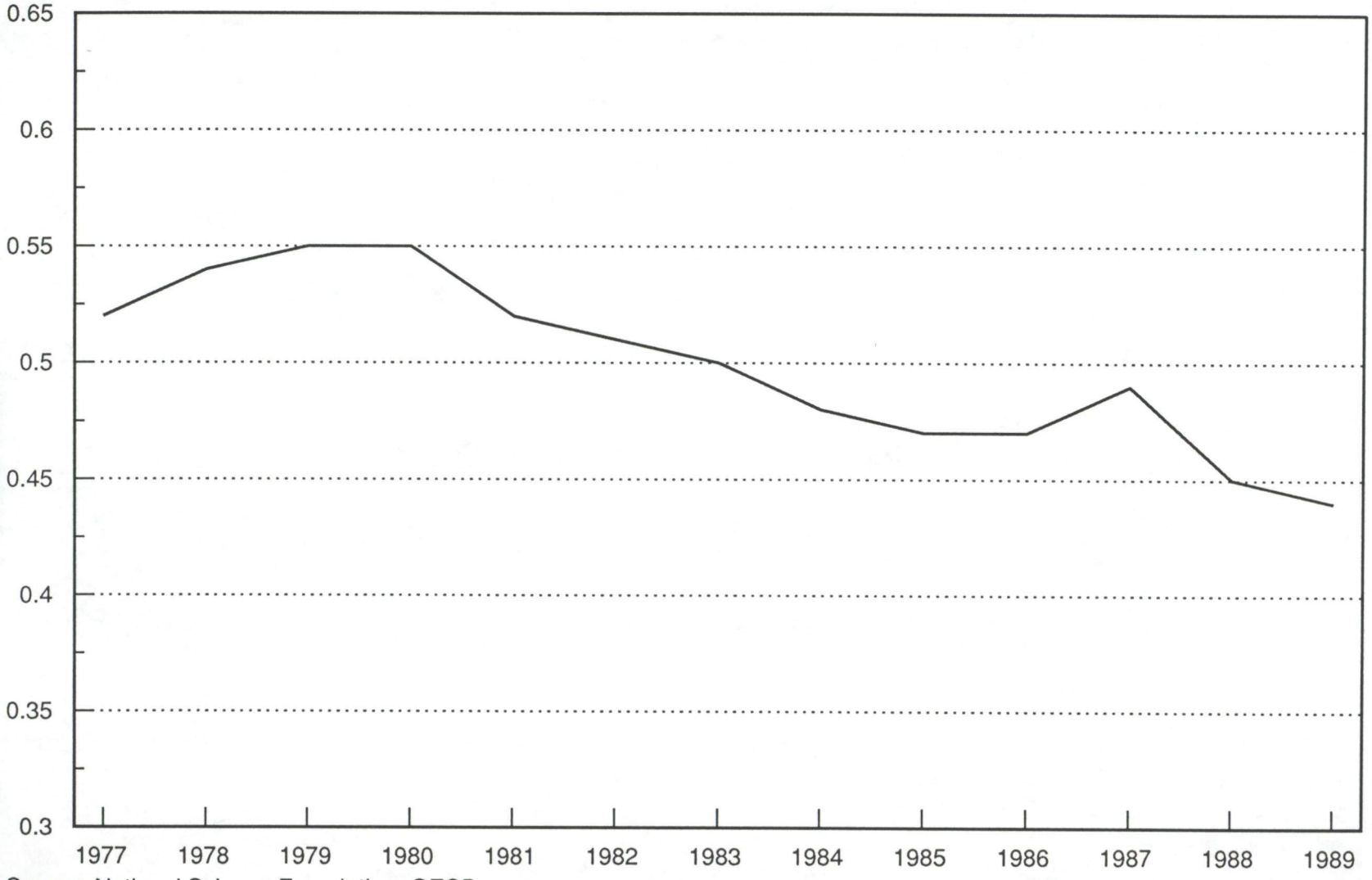


Source: National Science Foundation, OMB, OECD.

Note: 1992 & 1993 levels are estimates. U.S. expenditures are over fiscal year; Japanese are over calendar year.

Japanese Gov't Civilian R&D as Percent of GDP

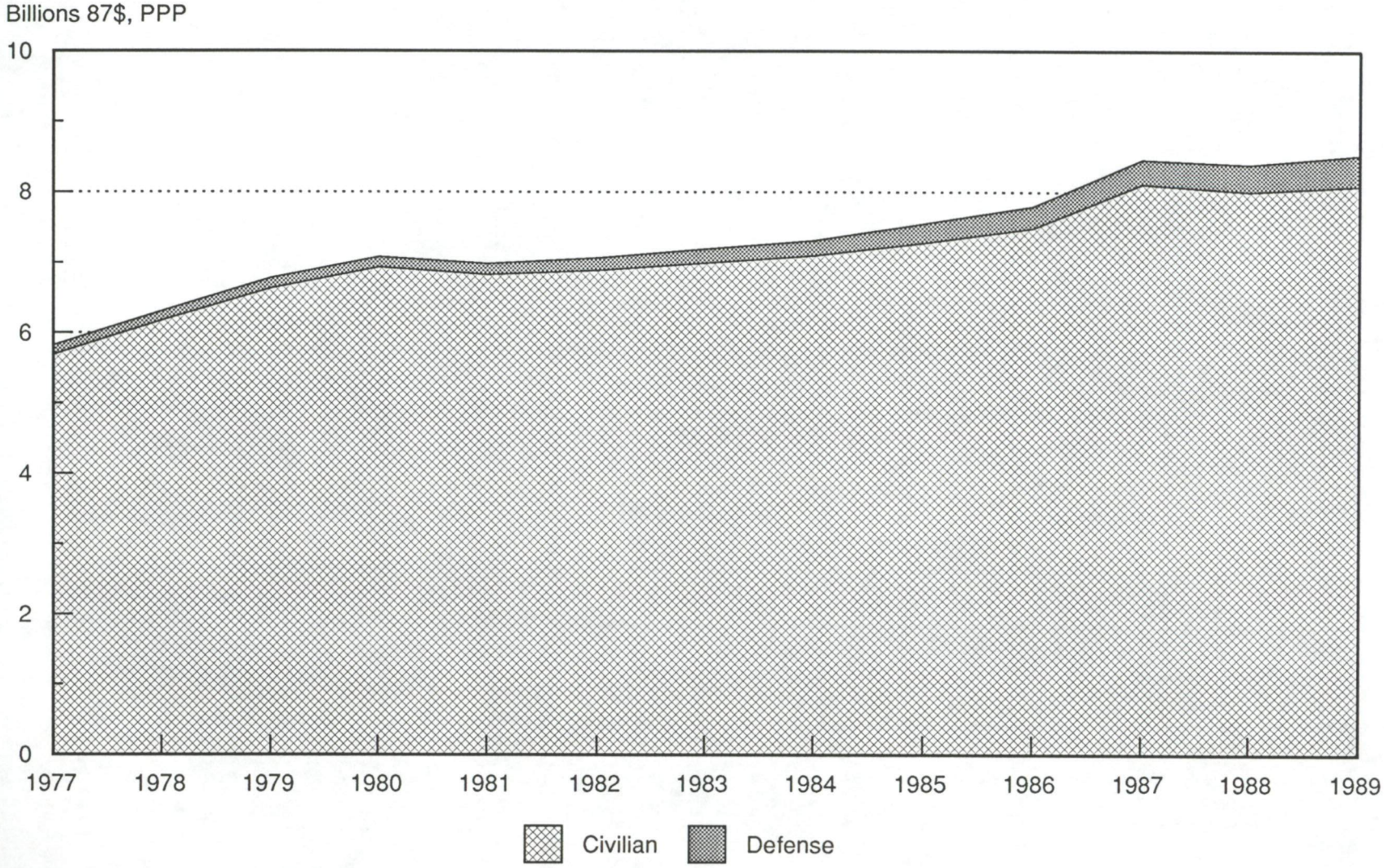
(calendar years)



Source: National Science Foundation, OECD.

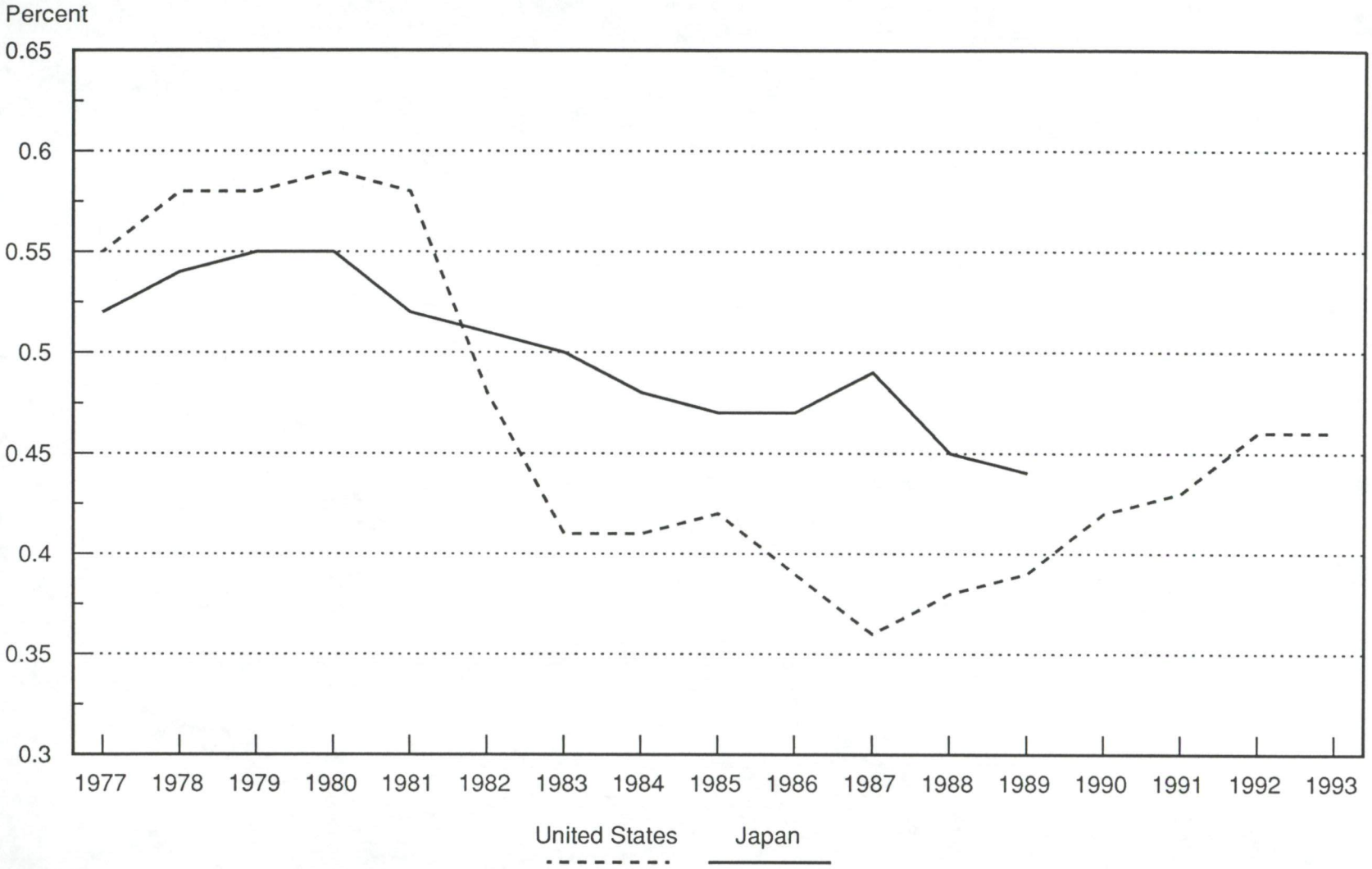
Japanese Government R&D Expenditures

(calendar years, in 1987 dollars)



Source: National Science Foundation.

Civilian R&D Expenditures as Percent of GDP



Source: National Science Foundation, OMB, OECD.

Note: 1992 & 1993 levels are estimates. U.S. figures are over fiscal year; Japanese figures are over calendar year.

Members of the Committee on Science, Space & Technology

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DRAFT

August 5, 1992
(House Rules)

H.R. 5231 - National Competitiveness Act of 1992
(Valentine (D) North Carolina and 43 others)

The Secretary of Commerce, Secretary of State, Administrator of the Small Business Administration (SBA), Chairman of the Council of Economic Advisers, and Director of the Office of Science and Technology Policy will recommend a veto of H.R. 5231 unless the technology financing provisions in Subtitles D and E of Title III are deleted. These provisions would establish, within the Department of Commerce, a technology development loan program and a high technology analogue to SBA's Small Business Investment Company (SBIC) Program.

The Administration believes these "banking" provisions are inappropriate for the Commerce Department's Technology Administration, which does not have the financial expertise needed to administer such programs. The Administration supports improvements for the SBIC program, and believes that the Commerce Department and SBA should more closely cooperate to provide technical expertise in areas of financial assistance to high technology companies.

In addition, the Administration opposes provisions of H.R. 5231 that:

- Establish a Council of Technology and Competitiveness within the Executive Office of the President. Generally, a Federal interagency group does not possess the judgment to plan the development of future technologies or to decide which technologies will be the most economically productive.

- Alter the initial intent of the Manufacturing Technology Centers program by allowing continued direct support of the centers beyond six years.

- Establish an unnecessary and undesirable set-aside for consortia within the Advanced Technology Program.

- Micromanage the National Technical Information Service (NTIS) by pressuring it to enter into a long term lease with organizations that may not meet NTIS' long-term needs in the most effective way.

DRAFT

- Authorize funding levels that, given current fiscal constraints, far exceed the anticipated Administration request.

- Extend the Baldridge Award by statute to educational institutions prior to the completion of relevant studies and discussions with the educational community.

- Require a report on positions in international negotiations affecting Federal research and development programs which would infringe on the President's exclusive authority to conduct the Nation's foreign affairs.

- Duplicate activities of other agencies by requiring a report on certain agency activities, such as specified international negotiations and the Small Business Investment Research program.

* * * * * *

STATEMENT BY

MICHAEL J. BOSKIN, CHAIRMAN

PRESIDENT'S COUNCIL OF ECONOMIC ADVISERS

Before the

Committee on Science, Space, and Technology

U.S. House of Representatives

August 5, 1992

U.S. Competitiveness

Introduction

Thank you Chairman Brown and Ranking Member Walker, distinguished members of the Committee, it is a pleasure to be with you today.

Much attention has focused recently upon the economy's short-term performance and problems, particularly the need to strengthen growth to generate jobs rapidly enough to bring down unemployment. These matters are enormously important, and I would be pleased to discuss aspects of them if Members of the Committee so wish, but I have been asked to focus on long-run U.S.

competitiveness. I appreciate the opportunity to discuss these prospects today, and I commend the Committee for taking this longer-term perspective.

The long-term competitiveness of a nation is best reflected by its standard of living. Unlike an individual firm or an industry, there is no readily measurable gauge of competitiveness such as sales growth, market share, or unit cost, let alone an explicit market valuation of the company. For the nation as a whole, the aggregation of millions of citizens who are workers, savers, investors, and consumers, millions of businesses, and numerous industries, the most direct measures would be the standard of living of the population, its growth over time, and its comparison to citizens in other countries. From this perspective, there is both good and bad news. It is not fully appreciated, but American citizens have the highest standard of living in the world, as traditionally measured by gross domestic product per capita (GDP) (see chart 1 for a comparison with Japan and Germany). But the primary foundation of improvements in standards of living are increases in productivity--output per worker. Again, the United States has the highest level of productivity in the world (see chart 2 for a comparison with Japan and Germany). But, productivity growth in the United States has been too sluggish for almost a quarter century (see chart 3).

America has a strong foundation upon which to build its future, but there are serious challenges to surmount if we are to remain the world's strongest economy.

We have to increase national saving and investment. We have to increase workers' skills and provide workers with more capital and better technology. We also have to reduce impediments to the smooth operation of markets. To achieve these goals, the President has proposed growth-oriented programs in the areas of tax policy, financial reform, health care, education, and technology. He also has moved forcefully to reduce the burden of unnecessary government regulation on the American economy.

Defining Competitiveness In a Dynamic, Evolving Economy

The term "competitiveness" has been used in many different ways by many different people, some of them embracing a comprehensive vision of the national interest, others adhering to a more narrow definition of priorities. To some, international competitiveness is measured by the ability of U.S. firms to compete successfully with foreign producers either by producing at home and exporting--so-called "trade competitiveness"--or by locating abroad and competing successfully with foreign firms. However, the competitiveness of the entire economy cannot be defined in terms of the performance of any narrow set of industries. The goods and services exported by a country depend upon its comparative advantage--based upon its resources, labor, and capital and how these are combined to produce goods at the lowest cost. In any evolving, dynamic economy, changes in supply conditions,

world demands, or technology naturally will bring about changes in the competitive performance of specific industries.

However, it can be very misleading to measure the competitiveness of an economy by its balance of trade. In conjunction with other developments, a trade surplus could be either good or bad news; a sign of strength or of weakness. Strong, prosperous countries, such as the United States in the 1980s or Japan after the oil shocks of the 1970s, periodically run current account deficits. Conversely, relatively poor countries such as Romania during the last days of the Ceaucescu regime, can run large surpluses. But I am certain that no one would want to emulate the economic policies that created Romania's surplus and eventually the legacy of poverty that confronts its people today.

Trade flows may, when used in conjunction with a wide array of other indicators, be useful in evaluating our economic performance. Trade flows are not sufficient by themselves to characterize the long-term competitiveness of the American economy, as is obvious from the example of Romania. Hence, it is best in taking a long-run view to focus on conditions across the economy and over periods of time, rather than on the situation of particular industries at a given point in time (although that may well be relevant for other purposes).

In fact, American history contains many examples of industries that have gone through remarkable changes. The cotton industry was once thought of as a preeminent industry in the United States. Its relative decline caused much concern and cries for government intervention. However, other industries, such as railways, steel, and textiles, emerged as leading sectors of the economy.

A more recent example of such change is the evolution of the typewriter industry in the United States. Typewriters were once indispensable in offices. But now, with rapid technological improvement, typewriters have been, by and large, replaced in the United States and in other industrialized nations by cost-competitive and more productive personal computers. No one would dispute the importance today of the personal computer sector--in terms of job creation, earnings, and productivity enhancement--for our overall economic performance.

The replacement of industries in which we no longer have a comparative advantage by industries in which we now have a strong advantage, as well as the rise of more technologically advanced sectors to replace previously important industries represents the natural progress and evolution of a dynamic and flexible economy. There is no doubt that one day today's personal computers will be replaced by more advanced equipment. The point is that we should not define the competitiveness of the U.S. economy exclusively in terms of the performance of some narrow set of industries.

In fact, it is the ability of our economy to respond flexibly to change that has made it the most competitive in the world today. Contrary to many claims that have been made in recent years, the American economy is not in decline, and is not being superseded by other industrial countries. But we cannot take sustained growth at rates sufficient to maintain American economic leadership for granted. It will require major changes in the economy and in economic policy.

Current Situation

With less than 5 percent of the world's population, America produces about a quarter of the world's total GDP. Our GDP per capita was $22,056 in 1990, placing the United States more than 25 percent above Germany and Japan. The United States has the highest absolute level of productivity of any country in the world, with a GDP per employed person of $45,918 in 1990.

The competitive position of the United States actually has improved over the last decade. In 1991, the United States produced a greater share of the industrial output of the OECD countries than it did in 1980.

However, America cannot take sustained, solid economic growth for granted. To maintain our competitive position, we must continue to make progress toward

increasing saving and investment, promoting technological innovation, improving our labor force, and increasing the scope for market forces in the economy.

These policies, if they are sustained, will lead to higher average rates of growth. When small increments to growth rates are compounded over many years, they lead to substantial differences in standards of living. It is the sustained application of appropriate policies that underlies long-term improvements to competitiveness.

I will now address some of the areas in which competitiveness policies can make a difference.

Increasing Saving and Investment

Long-term improvements in competitiveness require a continuing stream of new investment in new capital. Productivity growth and rates of investment are highly correlated. During 1959-73, capital per worker in the private business sector grew 2.4 percent annually while productivity grew by 2.8 percent. During 1973-89, these figures dropped to 0.8 percent and 0.9 percent, respectively. Raising investment rates will be crucial to raising future productivity growth.

High levels of investment, in turn, require high levels of saving. The gross national saving rate of the U.S. economy has declined from over 16 percent in the early 1960s to just under 13 percent in 1990. Clearly, raising national saving must be an important part of the effort to bolster our competitiveness.

One of the keys to ensuring the availability of new capital is sound monetary and fiscal policy. Low and steady inflation will reduce uncertainty and promote investment. A successful fiscal policy over the long term would release resources for private investment and lower the cost of capital. Towards that end, the President has submitted budgets with a focus on both controlling the growth of government spending and, within proposed spending categories, shifting from current consumption to investment.

Tax policies should minimize distortions to incentives to work, save, invest and innovate. The Administration has proposed the introduction of Family Savings Accounts and more flexible IRAs as ways to stimulate personal saving for pre-retirement objectives. To encourage investment, the Administration has proposed a capital gains incentive that reduces the tax on long-term gains to 15.4 percent, a new 15 percent Investment Tax Allowance, and simplified and liberalized treatment of depreciation. The Administration also has proposed the establishment of Enterprise Zones to bring entrepreneurship and opportunity to distressed areas.

Over the long term, a well functioning financial system is essential to ensure that businesses and consumers that rely on credit have access to financing. The Administration's proposals to remove archaic legal barriers, correct weaknesses in deposit insurance, and bolster the FDIC's Bank Insurance Fund were intended to help create a safer, sounder, and more internationally competitive financial system.

Promoting Technological Innovation

Economic growth can be enhanced by policies supporting the development of intellectual capital. Research and development can lead to new products and more efficient production processes that generate employment, productivity growth, and an improved standard of living.

In many areas of technology, the gains from innovation can be captured by private entrepreneurs, so that there are sufficient incentives for private R&D. In these areas, innovation is best pursued by the private sector. This ensures that R&D effort will be directed toward the most productive, market-worthy projects.

At the generic and "pre-competitive" stage of R&D, the fruits of research may be hard to capture, and in fact may benefit others who have not contributed to the cost of the research. In these circumstances, private entrepreneurs would be unlikely to undertake sufficient R&D, and this is where there is an important role for

government-funded activities or special tax provisions to account for this "externality." This year the Administration proposed a record $76 billion R&D budget both for basic research and for applied research and development. To promote private innovation, the Administration consistently has advocated making the R&D tax credit a permanent part of the tax code. Reducing the tax rate on capital gains also would improve the incentives for private R&D.

The Administration consistently has highlighted the importance of basic and applied research activities and the importance of reducing barriers to innovation. Other Administration initiatives include (1) continuing implementation of the National Cooperative Research Act (NCRA) of 1984, which enables private companies to form research alliances without fear of unwarranted antitrust uncertainty; (2) proposed legislation to expand the NCRA to include joint production ventures; and (3) redeployment of the National Weapons Laboratories' assets in favor of broader (non-defense) objectives.

As I noted earlier, when the benefits of R&D can be appropriated by private researchers, the choice and funding of research projects should be left up to the market. This will ensure that resources are channeled into the most productive research opportunities, and this allocation will be policed by the market itself. Even when the benefits to research are not appropriable by the market, this does not

necessarily mean that government should step in. The economic benefits of government-sponsored research must be weighed against their costs. Hence, the role for government-sponsored research in our economy must be considered in light of two standards: appropriability and the balance of costs and benefits.

Improving Labor Quality

Improved labor quality is, along with capital investment and technological innovation, a third major factor underlying increases in productivity. Higher and improved levels of schooling will lead to higher worker productivity. The Administration has made improvements in the nation's educational system a high priority. It has proposed a record $34.9 billion in funds for the Education Department and Head Start. The President's AMERICA 2000 education reform strategy is aimed at helping communities achieve the National Education Goals by the year 2000. The Administration has advanced various proposals to improve the quality of schooling by increasing choices of schooling available to middle and low income families.

Improving labor quality does not stop at the classroom door. Through the Job Training 2000 initiative, the Administration proposes to overhaul the current fragmented, inefficient Federal job training programs. This initiative would improve services to clients, gear training to local needs, ensure quality training and

accountability for outcomes, and allocate funding in the form of vouchers to individuals.

Strengthening the Dynamism and Flexibility of the Private Sector

At the core of the U.S. economy's dynamism and resiliency is the flexibility it derives from reliance on markets. The operation of the marketplace allows competition to determine the amount of goods and services produced and the prices at which these are bought and sold. It also promotes production on a least-cost basis, and the channelling of investment into the most productive projects.

Government rules and regulations, when applied inappropriately, can needlessly add to costs, distort the efficient allocation of resources, reduce the economy's flexibility and disrupt employment. Hence, the performance of the economy can be substantially enhanced through reform of unnecessary government economic regulations.

As part of an ongoing effort to widen the role of market forces, the Administration regularly reviews government regulations to ensure they are cost effective and to minimize the regulatory burdens on the economy. In January 1992, the President announced a 90-day moratorium on new regulations that impede economic growth, which was later extended an additional 120 days. As part of the

moratorium, all government agencies were instructed to evaluate existing regulations with regard to their effectiveness and their effect on private sector costs, and to take actions to reduce these burdens in a manner consistent with the underlying statutes and protecting public health and safety.

The economy's performance can be directly improved by reforming regulations as well as eliminating them. Regulations can be designed to give firms greater incentives to cut costs and to innovate. For example, in moving to free competition in long-distance telephone service, the FCC has tied some of AT&T's rates to an index that is adjusted for inflation minus a correction for expected improvements in productivity. If AT&T reduces its costs or improves its products, it is allowed to keep some of the profits.

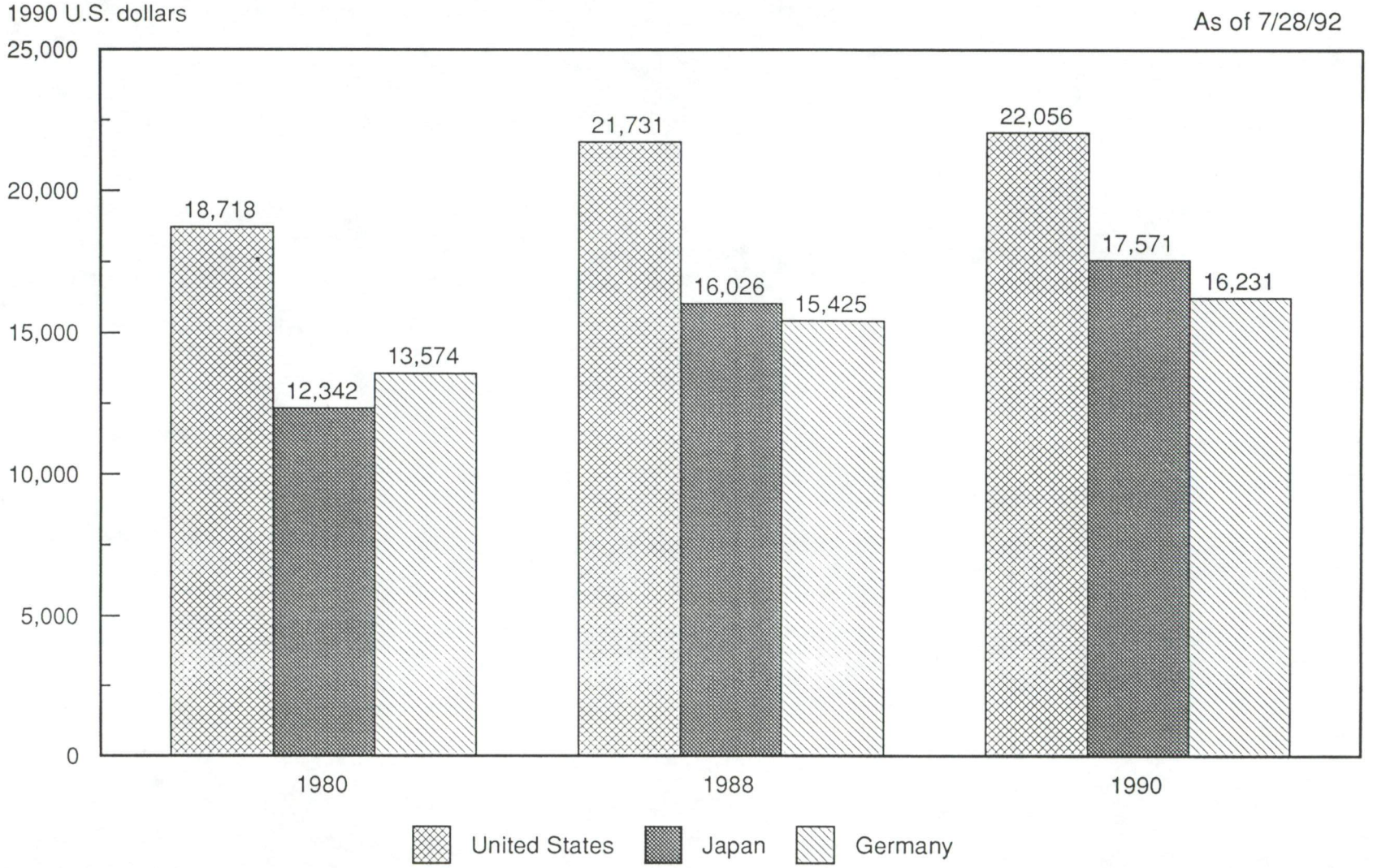
Conclusion

The American economy continues to be the largest and most productive in the world. This wealth gives America every opportunity to continue to grow and prosper in the years ahead. However, this growth cannot be taken for granted. Only if growth-oriented policies, such as those proposed by the President, are put in place and implemented on a sustained basis will our living standards continue to rise while we retain our preeminent position in the global economy.

GDP per capita

Chart 1

As of 7/28/92

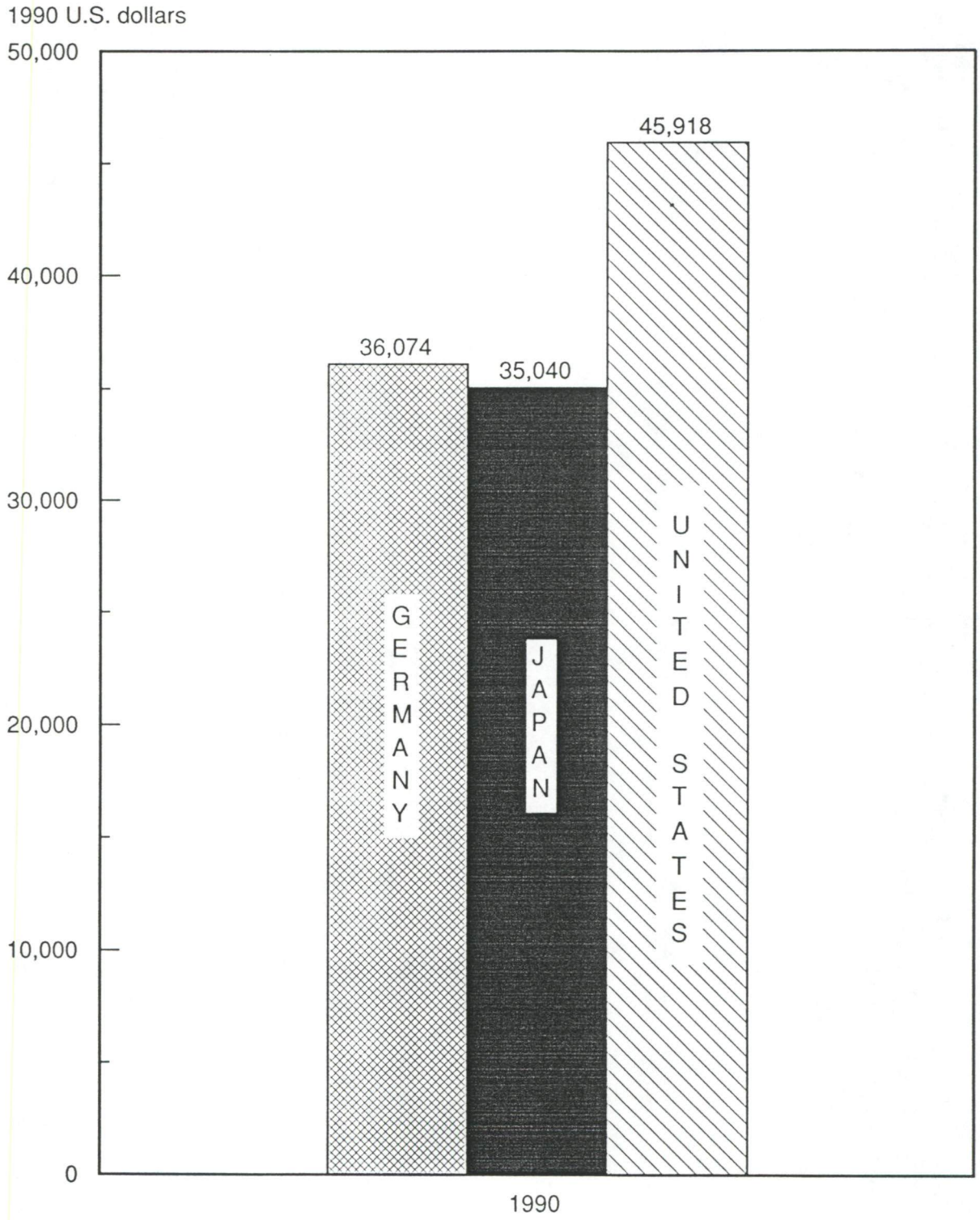


Note: Purchasing power-parity exchange rates.

Source: Bureau of Labor Statistics.

Productivity

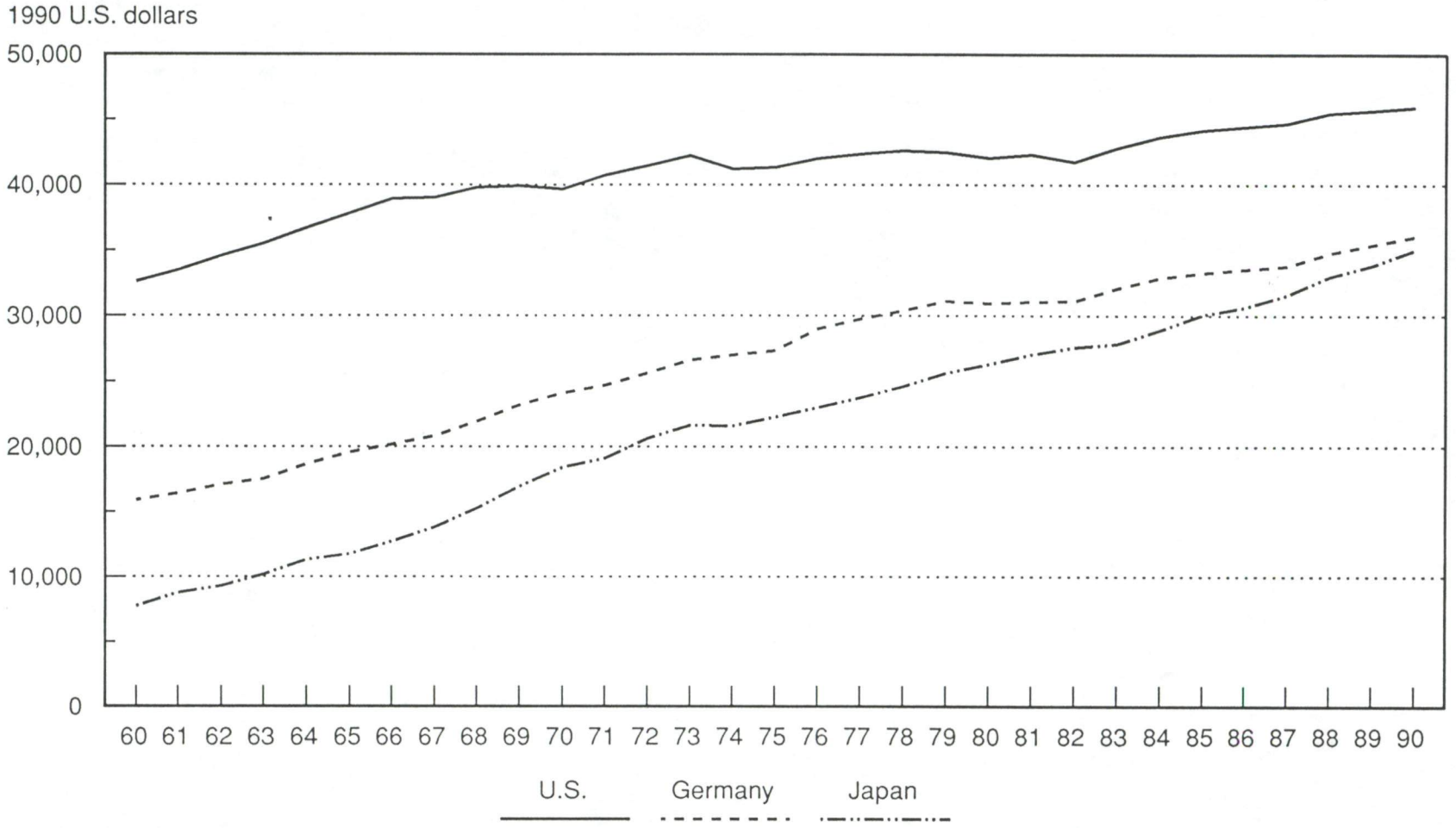
Chart 2



Note: Purchasing power-parity exchange rates.
Productivity is defined as GDP per worker.
Source: Bureau of Labor Statistics.

Trends in Productivity
1960-90

Chart 3



Note: Purchasing power-parity exchange rates.
Productivity is defined as GDP per worker.
Source: Bureau of Labor Statistics.