THE RESEARCH AND EXPERIMENTATION TAX CREDIT AND THE ALLOCATION OF RESEARCH EXPENSES UNDER INTERNAL REVENUE CODE SECTION 861

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON WAYS AND MEANS
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTH CONGRESS

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THE RESEARCH AND EXPERIMENTATION TAX CREDIT AND THE ALLOCATION OF RESEARCH EXPENSES UNDER INTERNAL REVENUE CODE SECTION 861

WEDNESDAY, MAY 10, 1995

HOUSE OF REPRESENTATIVES,
COMMITTEE ON WAYS AND MEANS,
SUBCOMMITTEE ON OVERSIGHT,
Washington, D.C.

The subcommittee met, pursuant to call, at 10:15 a.m., in room 1100, Longworth House Office Building, Hon. Nancy L. Johnson (chairman of the subcommittee) presiding.

[The advisory announcing the hearing follows:]

ADVISORY

FROM THE COMMITTEE ON WAYS AND MEANS

SUBCOMMITTEE ON OVERSIGHT

FOR IMMEDIATE RELEASE
April 19, 1995
No. OV-7

CONTACT: (202) 225-1721

JOHNSON ANNOUNCES HEARING ON THE RESEARCH AND EXPERIMENTATION TAX CREDIT AND THE ALLOCATION OF RESEARCH EXPENSES UNDER INTERNAL REVENUE CODE SECTION 861

Congresswoman Nancy L. Johnson (R-CT), Chairman, Subcommittee on Oversight of the Committee on Ways and Means, today announced that the Subcommittee will hold a hearing to examine issues relating to the research and experimentation (R&E) tax credit and the temporary rule for allocating research expenses between U.S. and foreign source income under Internal Revenue Code section 861. **The hearing will take place on Wednesday, May 10, 1995, in the main Committee hearing room, 1100 Longworth House Office Building, beginning at 10:00 a.m.**

BACKGROUND:

Section 41 of the Internal Revenue Code provides for a research and experimentation tax credit equal to 20 percent of the amount by which a taxpayer's qualified research expenditures for a taxable year exceed its base amount for that year. The R&E credit, which was enacted on a temporary basis in 1981, has been extended several times since, most recently in the Omnibus Budget Reconciliation Act of 1993 (the "1993 Act"). The credit is currently scheduled to expire after June 30, 1995.

The 1993 Act also provided a temporary rule for allocation of research expenses between U.S. and foreign source income. The 1993 Act rule generally is identical to temporary rules in effect prior to the 1993 Act for allocating research expenses, except that the portion of U.S.-incurred research expenses allocated to U.S. source income (and the percentage of foreign-incurred research expenses allocated to foreign source income) is 50 percent instead of 64 percent. The 1993 Act's temporary rule generally expires for taxable years beginning after August 1, 1994.

Chairman Johnson and Ranking Democrat Robert Matsui have sponsored H.R. 803, a bill to extend permanently the R&E credit. In announcing the hearing, Chairman Johnson stated, "Before Congress moves forward on legislation to extend the credit, I believe it's critically important to evaluate whether the credit's current structure is effective in achieving the goal of stimulating long-term research activities, and to examine proposals for improving its design to better meet the rapidly changing circumstances of global competition."

FOCUS OF THE HEARING:

The Subcommittee on Oversight will examine the effectiveness of the current credit and possible structural modifications to improve its utility in stimulating long-term research and experimentation activities. The current research credit is incremental in nature, rewarding companies for increasing their research expenditures (as a portion of gross receipts) above the average expenditures they made (as a portion of gross receipts) during the period from 1984 through 1988. To the extent that companies' current year research expenditures are significantly below or far above their base spending amounts, the credit becomes a less efficient policy tool.

In particular, the Subcommittee is interested in receiving testimony regarding the effectiveness of the current credit in stimulating long-term research and experimentation activities and regarding potential alternatives to the current structure of the credit, such as giving taxpayers some choice over their base period, or doing away with the base completely and providing a lower rate of credit on all qualified expenditures. In addition, the Subcommittee will receive testimony on whether the 1993 Act's temporary rule for allocating research expenses between U.S. and foreign source income should be extended.

SUBCOMMITTEE ON OVERSIGHT

DETAILS FOR SUBMISSIONS OF REQUESTS TO BE HEARD:

Requests to be heard at the hearing must be made by telephone to Traci Altman or Bradley Schreiber at (202) 225-1721 no later than the close of business, Friday, April 28, 1995. The telephone request should be followed by a formal written request to Phillip D. Moseley, Chief of Staff, Committee on Ways and Means, U.S. House of Representatives, 1102 Longworth House Office Building, Washington, D.C. 20515. The staff of the Subcommittee on Oversight will notify by telephone those scheduled to appear as soon as possible after the filing deadline. Any questions concerning a scheduled appearance should be directed to the Subcommittee staff at (202) 225-7601.

In view of the limited time available to hear witnesses, the Subcommittee may not be able to accommodate all requests to be heard. Those persons and organizations not scheduled for an oral appearance are encouraged to submit written statements for the record of the hearing. All persons requesting to be heard, whether they are scheduled for oral testimony or not, will be notified as soon as possible after the filing deadline.

Witnesses scheduled to present oral testimony are required to summarize briefly their written statements in no more than five minutes. **THE FIVE MINUTE RULE WILL BE STRICTLY ENFORCED. The full written statement of each witness will be included in the printed record.**

In order to assure the most productive use of the limited amount of time available to question witnesses, all witnesses scheduled to appear before the Subcommittee are required to submit 200 copies of their prepared statements for review by Members prior to the hearing. **Testimony should arrive at the Subcommittee on Oversight office, room 1136 Longworth House Office Building, no later than 5:00 p.m. on Friday, May 5, 1995.** Failure to do so may result in the witness being denied the opportunity to testify in person.

WRITTEN STATEMENTS IN LIEU OF PERSONAL APPEARANCE:

Any person or organization wishing to submit a written statement for the printed record of the hearing should submit at least six (6) copies of their statement, with their address and date of hearing noted, by the close of business, Wednesday, May 24, 1995, to Phillip D. Moseley, Chief of Staff, Committee on Ways and Means, U.S. House of Representatives, 1102 Longworth House Office Building, Washington, D.C. 20515. If those filing written statements wish to have their statements distributed to the press and interested public at the hearing, they may deliver 200 additional copies for this purpose to the Subcommittee on Oversight office, room 1136 Longworth House Office Building, at least one hour before the hearing begins.

FORMATTING REQUIREMENTS:

Each statement presented for printing to the Committee by a witness, any written statement or exhibit submitted for the printed record or any written comments in response to a request for written comments must conform to the guidelines listed below. Any statement or exhibit not in compliance with these guidelines will not be printed, but will be maintained in the Committee files for review and use by the Committee.

1. All statements and any accompanying exhibits for printing must be typed in single space on legal-size paper and may not exceed a total of 10 pages including attachments.

2. Copies of whole documents submitted as exhibit material will not be accepted for printing. Instead, exhibit material should be referenced and quoted or paraphrased. All exhibit material not meeting these specifications will be maintained in the Committee files for review and use by the Committee.

3. A witness appearing at a public hearing, or submitting a statement for the record of a public hearing, or submitting written comments in response to a published request for comments by the Committee, must include on his statement or submission a list of all clients, persons, or organizations on whose behalf the witness appears.

4. A supplemental sheet must accompany each statement listing the name, full address, a telephone number where the witness or the designated representative may be reached and a topical outline or summary of the comments and recommendations in the full statement. This supplemental sheet will not be included in the printed record.

The above restrictions and limitations apply only to material being submitted for printing. Statements and exhibits or supplementary material submitted solely for distribution to the Members, the press and the public during the course of a public hearing may be submitted in other forms.

Note: All Committee advisories and news releases are now available over the Internet at 'GOPHER.HOUSE.GOV' under 'HOUSE COMMITTEE INFORMATION'.

*****

Chairman JOHNSON. The hearing will come to order.

Good morning, ladies and gentlemen. Yesterday, the subcommittee received testimony on over half a dozen narrow provisions of the tax law which have either expired or will expire in the near future. Our mission is to review the policy objective of each provision and evaluate whether or not the provisions are meeting the objectives.

In the past, many of these were extended routinely without examining the actual structure of the provision. In fact, we never did routinely have hearings on expiring provisions. At this time in the committee's history, we are going to methodically not only hold hearings, but reevaluate the structure of the provisions and the relevance of the policy behind them, not only to this year, but to the next decade.

In the subcommittee today, we will continue this process by focusing on two very important but very complicated tax provisions which are meant to encourage research and experimentation by American businesses. Section 41 of the Internal Revenue Code provides a 20-percent tax credit for taxpayers who spend money on qualified research expenditures. The research credit first was enacted on a temporary basis in 1981. The level of the credit and the structure of the credit have been changed several times since 1981.

The challenge is twofold. First, we want to design a credit which stimulates more research activity rather than just rewarding a taxpayer for research activity which would have occurred anyway. This policy objective is what lies behind the decision to structure the credit to apply only to incremental increases in the taxpayer's research activity. The technical details of implementing this policy involve establishing base periods which serve as a reference point for measuring the amount by which a taxpayer has increased his research activity. Second, we need to be mindful of the revenue effect of the research credit.

The concept of an incremental credit and the limitation on unusually high research expenditures are both meant to hold down revenue losses. The current section 41 uses a fixed base period as the reference point to determine whether or not a taxpayer has increased his research activity enough in order to be eligible for the incremental credit. One side effect of this feature is that some taxpayers may not be able to qualify for credit because their base period is unusually high and so their current research spending never passes the incremental test in section 41. It seems unfortunate to exclude deserving research programs from the credit merely because of an accident of timing or how their law defines the base period or the economic experience of their company in succeeding years.

The subcommittee also will receive testimony regarding the rules applicable to allocating research expenditures between domestic and foreign-source income. American research activity has kept our Nation at the cutting edge of high technology. It helps maintain our high standard of living essential for our economy to grow in the 21st century.

We want to do all we can to encourage our businesses to expand their research effort and therefore we will not be looking just at renewing the research and development tax credit, but also the possi-

bilities of restructuring and the costs associated with those restructuring proposals.

I yield to my colleague and ranking member, Mr. Matsui.

Mr. MATSUI. I thank the Chair for her comments, and I appreciate the fact that she is holding these hearings on both section 861 and the renewal of the R&D credits. Since 1981, when the credit was first established in this country, it has been modified four times and extended six times. Obviously that creates major problems for U.S. businesses, in the sense of the issue of certainty. As a result of that, I welcome the opportunity to try to make these credits eventually permanent.

Almost all studies indicate that these credits reduce not only the cost of doing business, but also they stimulate over $1 for each $1 spent in terms of additional research and development over the short term. In the long term, they produce $2 for every $1 spent in the area of R&D. This obviously is an important stimulus to U.S. industry, and this credit, as a result of that, must be continued.

Thirty-four Governors have supported the credit, over 200 major companies that use the credit seek its permanent extension, and U.S. companies spend $75 million a year on R&D, and they need to continue and have an incentive to continue to be competitive in the world market.

Our major trading partners—Japan, for example, provides a 20-percent incremental credit up to 10 percent of their current tax liability; Canada provides a flat rate credit of 20 percent; and Germany provides incentives through grants, special depreciation allowances for equipment, and deductibility for their R&D expenses. So Canada, Japan, Germany, our major three trading competitors and partners, along with the United States, all have credits.

As the Chair has indicated, we must look at restructuring this credit as we make it permanent. The base period was established between 1984 and 1988, and for some research-intensive companies, this credit is not as helpful as it could be; and as a result of that, it is my hope that we could not only modify it, but also make it permanent.

In terms of the 861 allocation rules, yesterday we heard from the Treasury Department, and they have indicated that soon they will be coming out with new regulations that would be more favorable to the taxpayers than the 1977 regulations. It will be important that we hear from witnesses regarding Treasury's comments, and also, hopefully, we will be seeing Treasury's recommendations very shortly.

Again, I look forward to working with the Chair and other members of this subcommittee and the full committee on restructuring and making permanent these two very, very important aspects of U.S. competitiveness.

Thank you.

Chairman JOHNSON. I thank my colleagues for testifying today and welcome you to our hearing Hon. Anna G. Eshoo.

STATEMENT OF HON. ANNA G. ESHOO, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Ms. ESHOO. Good morning, Madam Chairwoman, and thank you to each of the members of the subcommittee for this opportunity to testify before you. I would like to commend you for holding hearings on this all-important issue on the research and development tax credit, which is of course a crucial tax provision which encourages companies to invest in new products and manufacturing technologies in return for a reduced tax burden.

I would also like to salute my colleague, Bob Matsui of California, who has been a tireless advocate of the R&D tax credit.

Last Congress, Members on both sides of the aisle succeeded in retroactively authorizing the R&D tax credit for 1 year, as well as extending it for an additional 2 years. We did this for one simple, good reason; the R&D tax credit works. It has proven to be a cost-effective way to create jobs and innovative products.

Now it is time, I believe, to make this tax credit permanent, and I am proud, Madam Chairwoman, to be an original cosponsor of your bill, H.R. 803, which would achieve this goal.

Many of us from California recognize that tax incentives create jobs and capital investment in the high technology and biotechnology industries. Many of these businesses are located in my congressional district, which is so distinguished, the home of Silicon Valley, and which boasts the most biotechnology, computer, and software companies of any region in the United States.

The tax experts of these companies have told me that when this tax credit was first implemented in 1981, they believed that they would finally receive the necessary incentives to reinvest or to invest R&D dollars at the level of their international competitors, and they were right. Today, computer and software companies reinvest on average 13 percent of their sales revenues in R&D, compared with a 7-percent average for U.S. businesses overall. The reinvestment rate is even higher for biotechnology companies, which put 30 to 60 percent of their revenues into R&D.

These investments have produced substantial economic growth, exactly the outcomes that we want to produce by keeping it on the books and also making it permanent. Between 1972 and 1992, the average growth rate for computer and software technology companies was approximately 27 percent, over nine times the growth rate of the national economy during that period. I think the figures are most provocative and tell the best story.

Not surprisingly, software, computer, medical, and biotechnology firms are driving job growth throughout the country, and these are very good paying jobs for our people. Yet with this success, the R&D tax credit has been extended for just months at a time. This is a short-term tax plan, and I think that it undermines the economic growth we are trying to promote.

Research and development requires long-term planning and financial stability in order to succeed. In other words, the companies that do this need to have something that is reliant, a reliant public policy. These legislative stops and starts weaken the high technology industry's ability to use this tax provision effectively. I urge this subcommittee to improve the effectiveness of the R&D tax

credit by removing the uncertainty which results from these short-term extensions.

I believe H.R. 803 accomplishes this goal by making the credit permanent, and I urge its swift passage.

I would also like to offer my support for two additional tax provisions important to the high technology community. The first is making retroactive, extending, and making permanent the research expense allocation rule which allocates 50 percent of U.S. research expenses to U.S. source income—this expired provision encourages companies to spend their research dollars in our country and is an important complement, I believe, to the R&D tax credit—and finally, to review the proposal to improve the existing tax credit by extending it to teams of companies and not-for-profit scientific research organizations. Because more and more research is now being done under the umbrella of not-for-profits and consortia, this could greatly improve the effectiveness of the R&D tax credit.

Let me thank you again, Madam Chairwoman, for your leadership on this issue and so many others, to all of the members of the subcommittee, and most especially for holding this very important hearing on this all-important issue for the future competitiveness and growth of our Nation.

Thank you.

Chairman JOHNSON. Thank you very much.

Mr. Neal, a valued member of our committee, a colleague.

STATEMENT OF HON. RICHARD E. NEAL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS

Mr. NEAL of Massachusetts. Thank you very much, Madam Chairperson, and members of the subcommittee.

Yesterday, Madam Chairperson, I would note that you made reference to Elvis during your opportunity to testify, and every time that Elvis had a chance, he brought up his support for making the R&D credit permanent.

Chairman JOHNSON. I am glad to know that.

Mr. NEAL of Massachusetts. We monitored that very carefully.

Let me thank you and commend you this morning, Mrs. Johnson, for holding this hearing. This credit is due to expire on June 30, 1995. You and I have worked with the New England delegation, as well as The New England Council, which deserves, I think, enormous credit for having advanced this issue as well.

Last fall, our delegation sent a letter to President Clinton requesting a permanent extension of the research and development tax credit be included in the budget. Research and development is extremely important to corporations, especially those involved in the high technology industries.

Massachusetts has the fifth highest spending on research and development in the Nation. Massachusetts is well represented at this hearing today, and you will learn from our distinguished witnesses how important research and development is to the Commonwealth of Massachusetts.

In 1981 President Reagan signed into law a 4-year R&D tax credit to help stimulate the growth and competitiveness of our technology-based economy. This program was highly successful. One dollar of R&D credit stimulates approximately one additional

dollar of private research and development spending over the short term and as much as $2 of extra R&D in the long term. Research and development investment supports thousands of highly skilled employees in some of our growth industries.

Unfortunately, the benefits of the R&D credit have been hampered by the credit's temporary nature and uncertain future. Corporations have not been able to rely on the credit and plan for long-term investment. I believe our Tax Code should provide taxpayers with certainty.

U.S.-based R&D is critical to our continued economic growth. The R&D credit provides a significant incentive for U.S. companies to perform R&D in the United States, providing high-skilled, high-paid jobs for American workers.

This credit requires companies to increase their current R&D spending above a predetermined base before they are eligible to receive the credit. Since 1981 the credit has been extended five times and changed to reduce the benefits available to certain companies. Failure to make the credit permanent has substantially reduced its value to businesses. Corporate research planners cannot rely on the incentive provided by the R&D tax credit if it is extended for 12 to 18 months at a time.

Foreign governments are competing fiercely for U.S. research investments by offering tax and other financial incentives. We can no longer assume American companies will automatically choose to site their R&D operation in the United States. A permanent and robust U.S. R&D tax credit is essential to help ensure U.S. companies keep the majority of their R&D function and R&D jobs in the United States.

New England would substantially benefit from a permanent R&D credit. New England is still trying to recover from difficult economic times. A permanent R&D credit would provide a significant incentive for New England companies to perform research and development in New England. The technological innovations perfected through research and development are necessary to assist New England companies that are undergoing defense conversion to compete in the marketplace.

The first step is to make the R&D credit permanent. I know that some of us would like to see these changes made. However, providing taxpayers certainty should be our first goal.

I look forward to hearing additional testimony over the next few days and want to thank you personally for the efforts that you have extended on behalf of the R&D credit.

Chairman JOHNSON. Thank you, Mr. Neal.

You are absolutely right about how important this is to New England. It is interesting that the first two Members are from opposite ends of the Nation; it shows how very important this is.

Mr. Meehan.

STATEMENT OF HON. MARTIN T. MEEHAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS

Mr. MEEHAN. Thank you, Madam Chairwoman, members of the subcommittee. I have been working on this issue as a cochair of the Manufacturing Task Force, which is part of the Northeast-Midwest Congressional Coalition, and we had hearings around the country.

I had no idea about Elvis' support for this, and I am glad that Congressman Neal has brought that forward.

I am pleased to offer testimony on the need to extend and improve the research and experimentation tax credit now contained in section 41 of the Internal Revenue Code.

Since the Great Depression, between 65 and 80 percent of all productivity improvements can be attributed to the use of new technology. Some studies have shown that for every $1 that an individual business realizes from the investment in R&E, society as a whole realizes $2, $3, or even more dollars.

Research plays a critical role in the competitive status of the United States. It is a downpayment on future economic vitality. Without adequate R&E, our businesses will eventually lose the race for discoveries and innovations that form the basis for new products, new services, new manufacturing processes, market share, and ultimately, world influence.

Ultimately, the United States share of R&E has fallen for the first time in 20 years, and more research is being conducted overseas by U.S. companies. As cochair of the Northeast-Midwest Congressional Coalition on Manufacturing, I hosted hearings throughout the Northeast and Midwest during the 103d Congress and had numerous meetings with manufacturers, economic development offices, economists throughout the country, to talk to them about the types of policies that would help small and medium-sized manufacturers survive and prosper. Based on these discussions, the Task Force identified the R&E tax credit as a key contributor to U.S. manufacturing success.

We also determined that its potential could be significantly enhanced if a few key modifications were adopted: First, make the research and experimentation tax credit permanent; and second, extend it to cooperative research.

A permanent R&E credit would give companies more fiscal certainty to plan for long-term expenditures and to discover and develop new products and technologies. Moreover, extending the credit to cooperative research with institutions, such as Federal labs, working with universities, would greatly encourage joint ventures in research and experimentation. The advantage of such ventures is that they would spread the risk of research, making companies more willing and able to undertake activities leading to product and process innovation.

Technology is a driving factor in enhancing productivity and prosperity. A permanent and extended R&E tax credit is essential to continue the business and employment growth that has again begun to develop in our region and my home State of Massachusetts.

Technology development is particularly critical to the firms in the Northeast. The region's high cost of living requires manufacturing firms to pay higher wages. These higher wages can only be sustained through high-value-added manufacturing that comes from research and development.

When American technology and manufacturing ruled the world, we had no need to examine how technology was produced or how it was disseminated throughout our manufacturing base. We must now carefully examine the means by which this technology, instead

of merely developed in the United States, is deployed and actually used by our small and medium-sized manufacturing base. We must work together to fashion the right mechanism whereby technology can be developed and transferred in the most economically efficient manner.

The proposed modifications will improve the credit in a fiscally responsible way. By stimulating industry-led collaborative efforts, the modified credit will maximize limited private and public sector R&E funds, and it will encourage firms to better allocate scarce research resources to projects that advance both their individual and collective goals. Throughout the Tax Code, we can construct the framework for research partnerships that are truly industry led in the most efficient manner possible.

I encourage the subcommittee to enact this important improvement to the R&E tax credit when it is considered in the coming weeks. Thank you very much. My compliments to you for having this hearing.

[The prepared statements follow:]

STATEMENT OF REP. MARTY MEEHAN AND BOB FRANKS
CO-CHAIRS OF NORTHEAST-MIDWEST CONGRESSIONAL COALITION
CO-CHAIRS OF THE NATIONAL TASK FORCE ON MANUFACTURING

Dear Madam Chairman and Members of the Subcommittee on Oversight: We are pleased to offer testimony on a matter of great importance to states in the Northeast-Midwest region and across the nation that rely on the jobs and economic activity that a healthy manufacturing base provides—the need to extend and improve the research and experimentation tax credit now contained in Section 41 of the Internal Revenue Code.

In our capacities as co-chairs of the Northeast-Midwest Congressional Coalition and the National Task Force on Manufacturing, we examined the need for a permanent and improved R&E tax credit as part of a larger assessment of tax and finance alternatives aimed at strengthening the nation's manufacturing sector. Since the Task Force was launched early in the 103rd Congress, we have heard from manufacturers and policy experts during forums we convened in Washington and around the region. During these sessions, we discussed at length manufacturing finance needs and incentives with experts such as former Senator Paul Tsongas and George Hatsopoulos, CEO of ThermoElectron in Waltham, Massachusetts, who emphasized the need for a permanent and predictable R&E tax credit. Numerous economists, economic development officers, and small and mid-sized manufacturers themselves were consulted about the types of policies that would help them survive and prosper.

Through the extensive efforts of Task Force members—such as Congresswoman Johnson—we identified the R&E tax credit as a key contributor; we also determined that its potential could be significantly enhanced if a couple of key modifications were adopted. Based on this analysis, we included the following as the fourth recommendation in the Task Force report, ***Getting Back to Work: Breathing New Life into American Manufacturing:***

> *"Make the research and experimentation tax credit permanent and extend it to cooperative research."*

We believe that such an action is important to manufacturing and important to the economy of our region. A permanent R&E credit would give companies more fiscal certainty to plan for long-term expenditures and to discover and develop new products and new technologies. Moreover, extending the credit to cooperative research with institutions such as federal labs (or universities working with the labs) would encourage a greater number of joint ventures in research and experimentation; the advantage of such ventures is that they would spread the risk of research and make companies more willing and able to undertake activities leading to product and process innovation.

As the Task Force report noted, technology—rather than labor cost—is the driving factor in enhancing productivity and prosperity. A permanent and extended R&E tax credit is essential to continue the business and employment growth that has again begun to blossom in our region. Technology development is particularly critical to firms in the Northeast. The region's high costs of living require manufacturing firms to pay higher wages. These higher wages can only be sustained through high value-added manufacturing that come from research and development. The R&E tax credit being discussed today by the committee is one of the best vehicles to encouraging this important research and development.

To further increase the benefits of a permanent R&E credit, we believe the committee should consider extending the R&E tax credit to collaborative research. We would like to submit more detailed analysis for the record on this point. Essentially, bringing together firms with similar interests and needs, federal labs, and universities could provide the catalyst for innovation and creativity that could lead to widespread economic growth. Other nations have developed and nurtured highly successful technology development and deployment mechanisms based on such collaboration, and we in the United States must begin to promote this type of environment.

In closing, Chairwoman Johnson, we urge the Committee to make the credit permanent and to increase the incentive for collaborative R&E efforts. In this way, the greatest potential can be garnered from private and public research efforts, and the manufacturers of this country can begin to regain their competitive advantage.

THE BENEFITS OF A PERMANENT, EXTENDED R&E TAX CREDIT

1. R&E Is Essential to Our National Competitiveness

Real economic growth always has been dependent on development and application of new science, innovation, and technology. Since the Great Depression, between 65 and 80 percent of all productivity improvements have been attributable to the use of new technology. Indeed, studies have shown that for every $1 dollar that individual businesses realize from their investment in R&E, society as a whole realizes $3 or more. High technology firms alone represent a significant importance to our nation. As indicated in the recent OSTP study, while high technology firms comprised only 0.7 percent of all U.S. firms (excluding sole proprietorships), their importance to the national economy far outstrips their numbers. They are the source of a disproportionately large share of employment, sales, and export growth. And they are the source of innovation from which flow much of the improvements in our nation's standard of living.

Not surprisingly, therefore, research plays a critical role in the competitive status of the U.S. It is a down payment on future economic vitality. Without adequate R&E, our businesses will eventually lose the race for discoveries and innovations that form the basis for new products, new services, new manufacturing processes, market share and ultimately, world influence.

Unfortunately, the U.S. share of R&E has fallen for the first time in 20 years, and more research is being conducted overseas by U.S. companies. Moreover, when our industries do make the necessary outlays, the commercialization of new technology and its assimilation into the manufacturing process are being accomplished more swiftly by our competitors. According to the National Science Board:

- *U.S. R&E stagnated in the late 1980s and continues to stagnate into the 1990s, showing a growth rate of only 0.4 percent, as foreign rivals increase their R&E investments.*
- *U.S. spends too few dollars on industrial R&E and makes poor use of the ones it does spend.*
- *Corporate laboratories are under severe financial stress and being forced to shift to shorter-term R&E.*

2. More Collaborative R&E on Manufacturing Process and Other R&E Must be Encouraged

There is little doubt that the current R&E credit stimulates product innovation and improvements to existing products. Accelerating advances in product design and manufacturing technology have re-shaped the manufacturing environment and the global marketplace for goods. Manufacturing firms are coping to adjust to a new environment where production runs are shorter, product cycles are quicker, and failure-free and timely production at decreasing costs is a condition for survival. The effects of these dramatic changes are intensified as an increasing number of smaller industrial firms enter the economic landscape with fewer workers with greater skill demands.

In this arena, process technology plays an increasingly prominent role. Access to and adoption of new technologies can outweigh transportation and labor considerations. Small and medium-sized manufacturers are particularly at risk due to limited technical and financial resources for acquiring and implementing off-the-shelf productivity tools.

Moreover, mere investment in new technologies may not be enough to address the challenge of international competition for domestic and international markets. U.S. companies also must benefit from instituting a continuous improvement process based on first upgrading their technologies and training. All companies must develop new expertise and integrate it with the traditional skills in order to modernize their factories with various advanced manufacturing techniques. Frequently, small companies that invest in new technology cannot afford the additional engineering talent required to organize their operations in ways that fully exploit the technologies they have adopted.

The ability to adapt to technological change is also an increasing requirement along the manufacturing food chain. Large companies, foreign and domestic, are becoming more concerned about their supplier's technological and organizational abilities. Manufacturers along the supply chain feel these competitive pressures manifested in the form of requirements for better quality, greater reliability, and more timely delivery. However, the small supplier usually cannot meet these demands without investing in new technologies. Without such investments they are operating far below their potential — their methodologies and management practices are inadequate to ensure that American manufacturing will be globally competitive.

3. *Collaborative R&E is Done To a Greater Extent in Foreign Nations*

The problem is exacerbated by the increasing tendency of foreign competitors to engage in collaborative R&E. Our foreign competitors have increased their investment in research, often acting in teams that leverage their investments. In the U.S. today, approximately 200 industry consortia have been established under the 1984 Act, and new groups are forming as companies band together to face stiff global competition. However, this represents a small amount of the R&E pool. Little over 1 percent of all research is conducted cooperatively. Of the $150 billion in research and development conducted in the United States, only approximately $2 billion is conducted by consortia.[1]

By contrast, more than four times the relative percentage of R&E conducted cooperatively in Japan is collaborative, and about one-fifth of all joint research (or 6 percent of total R&E) is "horizontal" collaboration — collaboration among competing firms. Collaborative European projects include ESPRIT in information technology, RACE in advanced communications, BRITE in advanced materials and manufacturing, VLSIC for high capacity memory chips, ICOT for the fifth generation computer, and TRC for joint research on magnetic levitation and other technologies.

The U.S. must do more to promote cooperative research if we are to keep pace with our principal trading partners.

4. *The Collaborative Credit Will Benefit Firms Not Encouraged by the Current Incremental Credit*

The proposed enhancement to the R&E tax credit will promote cooperative research. The cooperative credit will assist companies that are otherwise increasing their R&E expenditures above the "base," regardless of how that base is defined in the section 41 incremental credit. Equally important, however, it also will benefit companies that cannot take immediate advantage of the incremental credit either because they do not have taxable income against which the credit can be offset, are subject to the limitations of the Alternative Minimum Tax, or whose R&E falls below the base. It also includes smaller firms that may be disinclined to invest the needed amounts in process or other technologies not perceived to inure to the bottom line immediately but need to make the investment to remain competitive in the long-run.

The ability to share in the results of cooperative research that is "incentivized" or encouraged by the enhanced credit is a direct benefit to all participants in a cooperative venture. In essence, the leveraged research is disseminated to small and large firms alike, both profitable and currently unprofitable firms, and the indirect benefit of the credit is spread to the entire membership of the project. For firms that are below the "base," cooperation will allow them to "catch up to the fold" with immediately rewardable R&E expenditures.

The National Academy of Engineering also endorsed the idea of a collaborative R&E tax credit. Specifically, a recent Academy Study Commission, looking at various measures to increase the level of stability of R&E tax policy, recommended that the U.S.:

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[1] According to a recent survey Alliance for Collaborative Research, companies conduct research and development with consortia for four major reasons: (1) to reduce the cost of conducting research by spreading the cost, (2) to reduce the risk of conducting high-tech research in untried areas, (3) to reduce redundant research within an industry -- for example, innovations needed to meet an industry-wide standard or solve a broad problem, and (4) to conduct research which will only benefit the firm after a long period. Much of this research would not be conducted without the umbrella of the consortia because of the factors above -- risk, costs, and few short term benefits.

- 35% of consortia research reduces redundancies.
- 30% of consortia research spreads risks.
- 20% of consortia research spreads costs.
- 15% of consortia research will benefit only in the long term.

replace the current incremental Research and Experimentation tax credit with a permanent tax credit on the total annual R&E expenditure of a company to encourage an increase in the level and the stability of R&E activity across business cycles. In addition, extend the R&E tax credit to cover industry-sponsored R&E in universities, and other institutions, and the industrial contribution to R&E performed as a part of a consortium that includes government laboratories.

As the committee is actively considering changes that would reward collaborative R&E — similar to the changes contained in S. 666 introduced last Congress by Senators Danforth and Baucus — I would like to focus my comments on the credit as it relates to collaborative R&E.

5. Collaboration Encourages New R&E, which is the Purpose of the R&E Tax Credit

Collaboration in areas of engineering research, for example, often concentrates on R&E that is not being performed by the private sector on an individual firm level. For example, much collaborative R&E focuses on unit manufacturing process R&E, which has been recognized by the National Research Council as grossly underfunded at a national level. While manufacturing process R&E can significantly improve the quality of products, lower costs, reduce scrap and improve the environmental integrity of manufacturing processes, it is difficult for any single manufacturer to capture the benefits of such research as opposed to the benefits of product-specific R&E. However, over the longer term such research has long range effects on our National industrial base and our National security.

Encouraging research that would not otherwise be conducted, as the Subcommittee knows, is the underlying justification of the R&E tax credit. Stimulating a change that would enhance and encourage collaboration would greatly advance the underlying policy goals of the current law, while incorporating sound science and engineering policy considerations.

6. Collaboration Also Reduces Duplication

Changes that would accelerate growth of collaborative enterprises is one of most important steps that can be taken to stimulate R&E in our tax code. Of course, when such a modification does not stimulate new R&E, it ensures R&E will be conducted through consortia for an altogether different reason. Much of the research being performed on process or environmental technology could be streamlined through consortia, which typically provide a more efficient vehicle for R&E activity. This consideration is highly important during a period when, as the National Science Foundation points out, our private and public R&E resources are increasingly limited, and we have reduced the level of R&E as a function of GDP for the first time in more than 20 years.

7. Collaboration Assists in Technology Deployment

Finally, apart from reducing duplication of research or stimulating new R&E, consortia provide a fertile and robust environment for the deployment of technology, once developed. The consortia environment combines both suppliers and users of process R&E so the widest market for the implementation of such technology is assured.

Technology deployment is the means by which advanced manufacturing technologies, either equipment, software, processes or management techniques, find their way from development to the factory floor. Sustained, expeditious, and effective technology deployment is essential to help our manufacturing sector generate desperately needed economic development.

Beyond generalizations, the slow rate at which new technology is adopted in the U.S. is a demonstrable barrier to the deployment of new inventions and concepts into manufacturing industries. U.S. industry experts state that approximately 90 percent of new discoveries require 25 to 75 years to achieve widespread implementation in the U.S. The mean implementation time is approximately 55 years. By comparison, many of our trading partners bring new technology to fruition in much shorter time frames. This comparison is particularly salient when examining the Japanese, who claim a 400 percent faster adoption rate than the U.S. in R&E and automation.

The Committee must keep in mind that the final goal of the R&E tax credit is not merely to stimulate new R&E spending, but to commercialize or deploy technology that results from that spending.

Conclusion

When American technology and manufacturing ruled the world, we had no need to examine how technology was produced or how it was disseminated throughout our manufacturing base. We must now carefully examine the means by which this technology, instead of merely being developed in the U.S., is deployed and actually used by our small and medium-sized manufacturing base. We must look towards encouraging process R&E as opposed to simply product R&E. We must work together to fashion the right mechanism whereby technology can be developed and transferred in the most economically efficient manner. I believe a collaborative tax credit modification to existing law is a cost-effective means to achieve this objective.

The proposed modifications will improve the credit in a fiscally responsible way. By stimulating industry-led collaborative efforts, the modification credit will maximize limited private and public sector R&E funds, and it will encourage firms to better allocate scarce research resources to projects that advance both their individual and collective goals. The modification will also stimulate new research — research unlikely to be undertaken individually because it is too costly, too risky, or too long-term. Finally, by making efficient use of public and private R&E resources, the modification will fully and cost-effectively advance the main policy rationale behind the existing credit.

In today's world, maintaining latest technology is not just a question of market share, it is a question of survival. In technology-intensive industries, failure to keep up with technological advances will have immediate repercussions, not only for the firms involved, but for the entire U.S. industry. Through the tax code we can construct the framework for research partnerships that are truly industry-led in the most efficient manner possible. I encourage the Committee to enact this important improvement to the R&E tax credit when it considers the credit in the coming weeks.

Chairman JOHNSON. Thank you very much for your testimony.

This has certainly been all along a very bipartisan issue; it has been Matsui-Johnson, it has been Johnson-Matsui. We intend to work very closely on it.

I appreciate your bringing our attention to the issue of team research, and particularly as we look at the goal of a balanced budget, one of the things that does come to mind is the inefficiency of government trying to support certain kinds of research that really does need to be done, and it may be possible to use some of that money to fund a credit that would help the private sector work more creatively on some of the difficult projects that we know need to move forward.

That is by way of saying that everything that we do is going to have to be paid for; but it is also true that this law was written, now, almost 15 years ago. Companies have changed dramatically, the economy has changed dramatically; and I urge you to share with us thoughts you have about how it ought to be modernized, because we are going to look at that, we are going to cost them out, and we are going to see what are our options in terms of making this a more powerful actor in our economy for all the reasons that you so eloquently set forth in your testimony.

I thank you for your good words, your support, and your thought in this area, and look forward to working with you.

I yield to my colleague, Mr. Matsui.

Mr. MATSUI. Thank you, Madam Chair. I don't have any questions for the three witnesses. I appreciate all of their testimony, particularly Anna Eshoo who is a colleague of mine from California, who is involved with the accounting changes for the incentive stock options and helped, obviously, the high technology industry in California and nationally there. I appreciate that very much.

Of course to Rich Neal, a colleague on the committee, who undoubtedly will be very involved in this, and Marty Meehan. We want to thank all of you for your testimony today, and we look forward to working with all three of you. Thank you.

Chairman JOHNSON. Mr. Ramstad.

Mr. RAMSTAD. Thank you, Madam Chair. I would like to associate myself with the remarks of the distinguished chairwoman, as well as the ranking member of the subcommittee. I also want to thank the three witnesses for being here today. It is refreshing to work together in a bipartisan, pragmatic way on something.

If there is anything we can agree on, it is certainly the extension of this important tax credit. As one who, like the three of you, represents a high technology district, certainly 300—and my good friend and cochair of the House Medical Technology Caucus might disagree, but I think 300 of at least the finest medical technology and biotechnology firms in the world, we recognize the importance of this credit. I don't think there is anywhere else in the Federal budget that we get as much bang for our buck.

We are talking about spending, over the 6 years, given a permanent extension of R&D, of the R&D tax credit, about $8 billion—$1.1 billion this year, going up to a little over $2 billion in the year 2000.

I would like to ask if you know of any studies as far as the macroeconomic—we all know in our respective districts, high tech-

nology districts but as far as the macroeconomic effects, in terms of job creation, capital formation, what we are talking about? What does it mean, $1 returned for every $1 of tax credit?

I mean, for example, when we look at capital gains, we know—we had economist after economist come to our subcommittee, and Alan Sinai sat there and told us that the macroeconomic effect of reducing capital gains tax rates would be to create about 1.4 million new jobs over the 5 years.

Perhaps we should wait until more technical witnesses come before the subcommittee.

Mr. NEAL of Massachusetts. Mr. Ramstad, I would just offer kind of an anecdote on that.

In Massachusetts, the link between our public and private university system and, I think, the growth of the high technology industry is substantial evidence as to how these events play out. I clearly think that as we take up in this subcommittee, over the next few weeks, budget deliberations and discussions, we will have a chance to crystallize some of those issues as we determine what ought to remain and what ought to go.

But I think that I cannot emphasize enough how important this has been to our university system across the State, which has a reputation, I think most would agree, that is second to none in the country. The link between those institutions and the growth of the high technology industry offers substantial evidence in support of extending this credit permanently.

Ms. ESHOO. I was just going to add, Representative Ramstad—and thank you for your nice comments—to underscore what I had stated in my testimony, that demonstrates the extraordinary growth from 1972 to 1992 for computer and software technology companies which was approximately 27 percent—this is over nine times the growth rate of the national economy during that period.

I know that you are asking specifically for something else, and I believe in the following panel you will hear testimony taken from a study that was conducted that will, in my view, directly underscore or answer the question that you have directed to us.

Thank you anyway.

Mr. MEEHAN. I headed a study that had a 3-to-1 ratio in terms of the investment that would result.

I would point out that my emphasis here is on manufacturing jobs. I believe that manufacturing is the engine that drives the economy, and our ability to produce products and to have more people working in manufacturing is critical because of the spinoff and multiplier effect of manufacturing jobs in general. So I think it is significant.

With regard to the budget issues, having supported, myself, a balanced budget, I feel it is very important that when we make determinations about where we can cut taxes—and personally, I believe there are very, very small instances where we can—this should be a priority. We should provide the $8 to $9 billion in cuts up front to pay for it. Ultimately, as we get to a balanced budget, we will all have some very, very difficult choices to make.

I don't believe the country can afford very much in terms of tax cuts. This is one of the tax incentives that we have to find the cuts for and make it work, because it is critical.

Mr. RAMSTAD. Well, thank you again, Madam Chair.

I certainly agree with all three of you. I look forward to working together with you for enactment of a permanent R&D tax credit.

Thank you, Madam Chairman.

Chairman JOHNSON. Thank you very much.

Thank you for your interest in this. We will be looking at options, so as you think about those things, don't hesitate to bring them forward. We will also be looking at a flat credit versus the structure in the current law. We will also be looking at how to pay for it, and one of the ways to look at that is, are there other portions of the tax system we impose on business that are less important, that are less significant in terms of rewarding the kind of behavior that is going to keep us a cutting-edge nation in 10 years. So all of that is on the table, and your thoughts will be welcomed.

Thank you for your testimony.

The next panel will be Mr. Gandhi, the associate director of Tax Policy and Administration for the U.S. General Accounting Office; Christopher Anderson, the general counsel, Massachusetts High Technology Council in Massachusetts; Michael Hooker, president of the University of Massachusetts on behalf of The New England Council; Doug Olesen, president and chief executive officer of Battelle Memorial Institute in Columbus; and Judith Pensabene, director of Federal Affairs and Counsel for Baltimore Gas & Electric Co.

At this moment, I am going to yield to my colleague, Mr. Portman, for purposes of an introduction.

Mr. PORTMAN. I thank the Chairwoman. I just wanted to make a special introduction of a fellow Ohioan. Doug Olesen is president and chief executive officer of the Battelle Memorial Institute in Columbus, Ohio, which is now, I believe, Dr. Olesen, the world's largest contract research organization with offices all around the country—laboratories all around the country—but, again, headquartered in Columbus, Ohio.

Dr. Olesen has also been very involved in the community, Columbus, and statewide. I want to commend him for that and welcome him today.

Thank you, Madam Chairwoman.

Chairman JOHNSON. We will start with Mr. Gandhi.

STATEMENT OF NATWAR M. GANDHI, PH.D., ASSOCIATE DIRECTOR, TAX POLICY AND ADMINISTRATION ISSUES, GENERAL GOVERNMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE

Mr. GANDHI. Thank you, Madam Chairman.

Madam Chairman, Mr. Matsui, and members of the subcommittee, we are pleased to be here today to discuss several issues we believe are important to your deliberations on the research tax credit.

Congress created the credit in 1981 on a temporary basis to enhance the competitive position of the United States in the world economy by encouraging the business community to do more research. The credit applies to qualified research spending that exceeds a base amount. Currently, the rate of credit is 20 percent of the spending.

On the basis of our past work and newly available data, we have four major observations to make. First, the research tax credit is primarily earned by large corporations in the manufacturing sector. For example, in tax year 1992, corporations earned almost $1.6 billion of credits. Most of these credits, some 71 percent, were earned by corporations with assets in excess of $250 million. Within the manufacturing sector, which earned 76 percent of the credit, the four industries that earned the most credits were chemicals, including drugs, electronic, and nonelectronic machinery, and motor vehicles.

The amount of the credit earned is not equivalent to the revenue cost of the credit because not all of the credit earned can be used immediately. The Joint Committee on Taxation has estimated that if the credit were extended, its annual revenue cost would be approximately $2.2 billion by fiscal year 1998.

Our second observation is that the research credit is basically a transfer of money from all taxpayers to those taxpayers who exceed the base research spending. This transfer is to induce changes in the productive activities within the economy. It is commonly held that society generally benefits more from R&D spending than from nonresearch spending, but data to measure such benefits are very limited, making it difficult to determine conclusively whether the research tax credit provides a net benefit to society.

Now, the third observation. Congress in 1989 revised the rules for calculating the base. Before 1989 the base was calculated in such a way that a link was established between current spending and future base amounts. The link substantially reduced the credit that was available in the future years. In an earlier study, we estimated that, at the margin, the credit at the time provided companies a benefit of 3 to 5 cents per $1 of additional research spending. We further estimated that each $1 of taxes forgone stimulated between 15 and 36 cents of research spending. Although the amount of research spending stimulated by the credit was well below the credit's revenue cost, total benefits could have been much higher.

The 1989 revision broke the link between the current spending and the future base by creating a fixed base, as opposed to the moving average base that existed before. This revision should have increased the amount of research spending stimulated by the credit.

At the same time, available evidence suggests that the fixed base of the credit has become too generous for some corporations in the sense that a large portion of the credit they receive is for spending they would have done anyway. On the other hand, some other corporations are unable to earn any credit, resulting in less overall research being stimulated.

If the credit is extended in its current form, Congress may want to provide for reviewing and adjusting this base as needed.

Our last observation is that the research credit has been difficult for IRS to administer. This conclusion was based on a survey of IRS revenue agents who audited large companies. These agents questioned the credit claimed by 79 percent of the corporations in which the credit was audited, and 54 percent of the agents found at least one aspect of the credit difficult to audit.

About one-fifth of the agents said the definition of "qualified research" was unclear. In 1994 the Treasury Department issued final regulations that may resolve this uncertainty. However, IRS confirms we still have to distinguish innovative research from routine research. That is because innovative research qualifies for the credit; routine research does not.

In conclusion, Madam Chairman, given the lack of empirical evidence for evaluating the credit's net benefits to society, we have not taken a position as to whether the research credit should be made permanent or allowed to expire.

We have, however, concluded that if the Congress decides to extend the credit, it may also want to ensure that the credit provides an attractive incentive to most recipients at an acceptable revenue cost. One way this could be done is by requiring that the base be reviewed and adjusted as needed.

That concludes my oral statement, Madam Chairman. I request that my written statement be placed in the record. I welcome any questions that you and the other Members may have. Thank you.

[The prepared statement follows. Due to its size, Objectives, Scope, and Methodology, Appendix I, is being retained in committee files.]

ADDITIONAL INFORMATION ON THE
RESEARCH TAX CREDIT

SUMMARY STATEMENT OF
NATWAR M. GANDHI
ASSOCIATE DIRECTOR, TAX POLICY AND ADMINISTRATION ISSUES
GENERAL GOVERNMENT DIVISION
U.S. GENERAL ACCOUNTING OFFICE

Madam Chairman and Members of the Subcommittee:

We are pleased to be here today to provide information on the research tax credit and to discuss several issues that we believe are important to your deliberations on the future of the credit.

In 1981, Congress created the research tax credit to encourage business to do more research. It believed that an increase in research was necessary to enhance the overall competitive position of the U.S. economy. Since its enactment on a temporary basis in 1981, the credit has been extended six times and modified four times. The credit has always been incremental in nature. Taxpayers are to receive a credit only for qualified research spending that exceeds a base amount. The current rate of credit is 20 percent of that incremental amount of spending.

On the basis of our past work[1] and newly available data, we have the following four major observations to offer:

-- The research credit is primarily earned by large corporations in the manufacturing sector.

-- The credit's net benefit to society would ideally be evaluated in terms of the ultimate benefits derived from the additional research that it stimulates and not just on the basis of how much research spending it stimulates for a given revenue cost. However, once the decision has been made to provide some form of credit, the amount of spending stimulated per dollar of revenue cost is a relevant criterion for assessing alternative designs for the credit.

-- The revisions that Congress made in 1989 should have increased the amount of research spending stimulated per dollar of revenue cost. However, available evidence suggests that the fixed base of the credit has become too generous for some corporations, in the sense that a large portion of the credit they receive is for spending they probably would have done anyway. At the same time other corporations are unable to earn any credit, resulting in less overall research being stimulated. If the credit is extended in its present form, Congress may want to provide for reviewing and adjusting this base as needed.

-- The research credit has been difficult for the Internal Revenue Service (IRS) to administer, primarily because the definition of qualified research spending was unclear. In 1994, the Treasury Department issued final regulations that may resolve this uncertainty. However, IRS and firms will still have to distinguish innovative from routine research.

Now I will elaborate on each of these points.

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[1]Preliminary Analysis of the Research and Experimentation Tax Credit (GAO/GGD-88-98BR, June 1988); The Research Credit has Stimulated Some Additional Research Spending (GAO/GGD-89-114, Sep. 1989); Pharmaceutical Industry's Use of the Research Tax Credit (GAO/GGD-94-139, May 1994); Information on the Research Tax Credit (GAO/T-GGD-95-140, April 1995). The objectives, scope and methodology of this testimony are discussed in appendix I.

CORPORATIONS USING THE RESEARCH CREDIT

In tax year 1992, corporations earned almost $1.6 billion worth of research credits.[2] Most was earned by large corporations in the manufacturing sector--71 percent by corporations with assets in excess of $250 million and 76 percent by manufacturing corporations. Within the manufacturing sector, the four subsectors that earned the most credits were those producing chemicals (including drugs), electrical equipment, motor vehicles, and nonelectronic machinery. (See Tables 1 and 2 for more details.)

The amount of credit earned is not equivalent to the revenue cost of the credit because not all of the credits earned can be used immediately. The general business credit limits the use of the research credit by combining it with other credits for the purpose of computing an overall limit on the reduction of a company's tax liability.[3] Although corporations earned almost $1.6 billion of research credits and had other general business credits totaling $4.5 billion (including carryforwards from prior years), they were able to use only $1.1 billion of general business credits against 1992 tax liabilities. The Joint Committee on Taxation has estimated that, if the credit were extended, by fiscal year 1998, its revenue cost would be approximately $2.2 billion per year.

EVALUATING THE CREDIT

The research credit is basically a transfer of money from all taxpayers to those taxpayers who exceed their base research spending. This transfer is meant to induce changes in the productive activities within the economy. It is commonly held that society benefits more from research and development spending than from nonresearch spending. But data to measure such benefits are very limited.

If the activities encouraged by the credit are, in fact, more beneficial to society than activities discouraged by this reallocation of resources, then the credit would be considered sound tax policy. We know of no studies that show whether the credit is better than alternative forms of government incentives aimed at encouraging research. We do know that the more research spending the credit stimulates per dollar of revenue cost, the better the credit would compare to other policies.

As we explain in the next section, the base calculation for the credit has an important effect on the incentive provided for increased research spending. Other factors also affect the incentive. These include the rate at which research expenses reduce tax liability, limits on the amount of general business credits that may be claimed, reductions in research expense deductions by the amount of credit claimed, and the carryover provisions for companies without sufficient tax liability to claim the credit. These factors, which affect individual

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[2]These data were extracted from the IRS' Statistics of Income and exclude credits earned by individuals and partnerships. The data include S corporations, which represented about 30 percent of the corporations earning a credit but accounted for only 2.4 percent of qualified spending and 4.1 percent of the credit earned.

[3]The general business credit includes such tax credits as the targeted jobs credit and the low income housing credit. Research credits accounted for about 86 percent of the current year general business credits of companies earning a research credit in 1992. The general business credit cannot exceed net income tax minus the greater of (1) the tentative alternative minimum tax or (2) 25 percent of the net regular tax liability above $25,000.

companies differently, are important in determining the incentive for increased research spending provided by the credit. For example, in 1992 about 79 percent of the corporations earning research credits had accumulated more general business credits than they could use. This meant that additional research credits earned by these corporations could not be used against current tax liabilities, thus reducing the marginal incentive provided by the credit.

ISSUES RELATING TO THE BASE OF THE CREDIT

The rules for determining the base spending amount to be used when calculating the credit have a critical impact on the credit's effect.[4]

To stimulate the most research spending per dollar of tax revenue forgone, the credit should be designed to give a benefit for research spending that firms undertake above and beyond the amount they would have spent in the absence of the credit. Conversely, no reward should be given for research that firms would have undertaken anyway. Unfortunately, it is impossible to determine accurately the amount of qualified research that firms would have undertaken without the credit. When discrepancies exist between this "ideal" base for the credit and whatever base is used in practice, the result is that firms are rewarded either too much or not enough for their spending behavior.

Prior to 1990, the base of the regular credit was equal to the average of qualified expenditures for the 3 previous tax years or to 50 percent of the current year's expenditures, whichever was greater. Although this base may have been a fairly good approximation of the ideal base, it had a serious flaw. The moving average base established a link between the taxpayer's current spending and future base amounts in a manner that substantially reduced the incentive provided to many companies. Specifically, each dollar spent in any year raised the base by 33 cents in each of the next 3 years, thus reducing the credit available in those years.

In our 1989 study, we estimated that, at the margin, the previous credit provided companies a benefit of 3 to 5 cents per dollar of additional research spending. We further estimated that this incentive stimulated between $1 billion and $2.5 billion of additional research spending between 1981 and 1985 at a cost of $7 billion in tax revenues. Thus, each dollar of taxes forgone stimulated between 15 and 36 cents of research spending. Although the amount of research spending stimulated by the credit was well below the credit's revenue cost, total benefits could have been much higher.

The revision of the credit in 1989 significantly increased the effective incentive of the regular credit by breaking the link between current spending and future base amounts. For most credit recipients, this new base is related to the ratio of research spending to gross receipts during the period 1984

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[4]Corporations can receive credits three different ways. First, they can earn credits for undertaking research themselves. For convenience, we will refer to this as the "regular" credit. Corporations can also earn credits for funding basic research by qualified organizations (primarily universities). This basic research credit accounted for less than 2 percent of the total amount of research credit earned in 1992, and the rules for computing this credit are different from those for the regular credit. Finally, corporations can receive flow-through research credits from other taxpayers. Flow-through credits also accounted for less than 2 percent of total research credits in 1992. The remainder of our testimony will focus on the regular research credit.

through 1988. To arrive at the base amount, this ratio or "fixed base percentage," as it is known, is multiplied by the taxpayer's average annual gross receipts for the 4 years preceding the current tax year.

One concern about the current base is that the spending behavior that individual firms exhibited from 1984 through 1988 may not be reflective of the spending that those firms would engage in now if the credit did not exist. The current base is appropriate as long as firms' ratios of spending to gross receipts are fairly constant over time. To the extent that taxpayers change their spending behavior over time, the credit computation would be too generous for some taxpayers, resulting in undue revenue losses. At the same time, it would deny others the opportunity to earn the credit, thus stimulating less overall research. Our analysis of corporate taxpayer data indicates that the accuracy of the credit's base has eroded significantly since 1989, which suggests the need for some adjustment to ensure that the credit provides an attractive incentive at an acceptable revenue cost.

Our analysis shows that the current computation rules are too generous for most corporations that earn the credit, in the sense that a large portion of the credit they receive is for spending they probably would have done anyway. We also found some evidence that many corporations earning the credit prior to the 1989 revision were unable to earn it in 1992.[5]

Our analysis first determined how many corporations' current research spending was at least double their base amounts. Corporations in this situation become subject to a special rule, that resets their base amount equal to half of their current year's spending. Large numbers of corporations being subject to the special rule indicates a problem with the credit's design for two reasons. First, the effective incentive that the credit provides in this situation is cut in half, because each additional dollar a corporation spends raises its base by 50 cents. Second, given that other studies' most optimistic assumptions imply a stimulative effect of no more than 30 percent, it is unlikely that the credit leads corporations to come close to doubling their spending on research. Consequently, a significant portion of the credit earned by corporations whose current research expenditures are far above their bases is earned for spending that they probably would have done anyway.

We have found that, in 1992, almost 60 percent of the corporations that reported some regular research spending on their tax return were subject to the special 50-percent base rule. These corporations accounted for about 19 percent of the regular spending done and 40 percent of the regular credit earned by all corporations reporting spending. Small corporations were much more likely to be in this situation than were large corporations. We have not yet determined the reasons for this. (Table 3 provides additional information on the characteristics of these corporations.)

Our second analysis involved tracking the credit-earning experience of individual corporations from 1989 through 1992. Unfortunately, the database that we were able to construct

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[5]Although our evidence concerning cases where the base is too low is stronger than our evidence concerning the opposite problem, this may simply be due to the fact that the former situation is much easier to detect. Corporations that earn a research credit in a given year report both their current research expenditures and their base amount on IRS form 6765. However, if research spending does not exceed the base amount, no credit will be earned and, therefore, no form will be filed. IRS databases do not contain information on research spending by companies that do not file the form.

included only corporations with assets of at least $50 million, so we can provide no insight into the experiences of smaller companies. The roughly 1,600 corporations that we could examine accounted for about 73 percent of the research credit earned in 1989.

The corporations we studied exhibited a wide variety of credit-earning patterns over the 4-year period, but the percentage of them that earned a credit declined every year between 1989 and 1992. In 1989, 65 percent of these corporations were able to earn a regular credit, but by 1992 less than 54 percent of them could. We do not know how much of this decline can be attributed to the change in the credit's design after 1989, but the pattern does indicate that a growing number of large corporations are not able to surpass their historic rates of spending (see Table 4 for more details.)

ADMINISTRATION OF THE RESEARCH CREDIT

In our earlier work, we concluded that the credit was relatively difficult for IRS to administer. This conclusion was based on our survey of IRS revenue agents who audited large companies for tax years 1981 through 1986. The survey found that these IRS revenue agents questioned the credit claimed by 79 percent of the corporations in which the credit was audited, and that 54 percent of the revenue agents found at least one issue or aspect of the credit difficult to audit. Revenue agents most frequently cited the following four reasons for questioning research expenditures: Rather than for qualifying, innovative research, the expenditures were for (1) adapting existing capabilities, (2) routine or cosmetic alterations, (3) overhead and administration, or (4) ordinary testing. In general, most of these agents found it difficult to distinguish spending for new products or functions from spending that paid for routine or cosmetic changes.

Our interviews with IRS for our 1994 report indicated that this difficulty remained. IRS officials reported that they were required to make difficult technical judgments in their audits concerning whether research was directed to produce truly innovative products or processes. An IRS official stated that, although examination teams often included engineers and other specialists enlisted to address technical issues that arose, IRS still had difficulty matching the technical expertise of the companies' specialists.

In our 1989 survey, about one-fifth of the revenue agents said the definition of qualified research was unclear. One reason cited was the lack of final regulations. The succession of proposed regulations issued in 1983, 1989, and 1993 to define qualified research under section 174 of the tax code created uncertainty about the definition of qualified research and contributed to the difficulty in auditing the research credit. All research spending that qualifies for the credit must first qualify under section 174. In 1994, Treasury issued final regulations that may resolve the uncertainty about the definition of qualified research spending. However, the difficulty of distinguishing innovative from routine research remains.

Audits of the research credit can be burdensome for both IRS and the taxpayer because the audits must determine whether research expenses, such as wages and supply costs, were made in support of research activities that qualify for the credit. The taxpayer is thus required to show that expenses supported qualified research activities. Where detailed project accounting does not exist, both IRS and the taxpayer may find it difficult to separate out after the fact the cost of personnel employed in specific projects. Thus, according to an IRS official, the costs of administering the credit are substantial for both IRS and the taxpayer.

In summary, Madam Chairman, given the lack of empirical information for evaluating the credit's net benefit to society, we have not taken a position as to whether the research credit should be made a permanent part of the tax code or allowed to expire. We have, however, concluded that, if the Congress decides to extend the credit in its current form, it may also want to ensure that the credit provides an attractive incentive to most recipients at an acceptable revenue cost. One way this could be done is by requiring that the base be reviewed and adjusted as needed.

That concludes my summary statement.[6] We welcome any questions that you may have.

[6]This summary statement for the record has been abridged to meet the Committee's formatting requirements. The complete version of the testimony includes information on the history of the credit, more detailed information on industry use of the credit and on corporations subject to the base limitation, and a description of the methodology used to obtain this information. Copies of the complete version, entitled Additional Information on the Research Credit (GAO/T-GGD-95-161), may be ordered by mail from, U.S. General Accounting Office, P.O Box 6015, Gaithersburg, MD 20884-6015. Orders may also be placed by calling (202) 512-6000 or by using fax number (301) 258-4066, or TDD (301) 413-0006.

Table 1 : Number of Corporations Earning Research Credits, Amount of Qualified Spending, and Amount of Credit Earned by Asset Class, 1992

	Corporations earning research credits			Percent of total		
	Number	Qualified spending ($ million)	Credits earned ($ million)	Corporations	Qualified spending	Credits earned
Asset range						
Less than $250,000	1,615	$308	$17	14.8%	0.8%	1.1%
From $250,000 to $1 million	2,377	316	25	21.8	0.8	1.6
$1 million to $10 million	4,144	1,842	129	37.9	4.6	8.2
$10 million to $50 million	1,485	2,025	121	13.6	5.1	7.6
$50 million to $100 million	364	2,865	72	3.3	7.2	4.6
$100 million to $250 million	321	1,683	96	2.9	4.2	6.1
$250 million or more	622	30,719	1,119	5,7	77.3	70.9
Total	10,928	$39,757	$1,580	100.0	100.0	100.0

Note : The numbers are based on sample data and consequently are subject to sampling error. Totals may not equal the sum of the details due to rounding.

Source: GAO analysis of IRS statistics of income data on corporations for tax year 1992.

Table 2 : Percent Distribution of Corporations, Qualified Spending, and Credit Earned by Industrial Sector, 1992.

	Corporations earning research credits		
Industry	Percent of corporations	Percent of qualified spending	Percent of credit
Agriculture	1.2	0.2	0.3
Mining	0.2	0.4	0.2
Construction	0.5	0.1	0.2
Manufacturing	65.3	76.6	75.8
Transportation and public utilities	1.7	8.2	6.2
Wholesale trade	5.6	1.3	2.1
Retail trade	1.3	0.3	0.5
Finance	0.9	0.6	1.1
Services-medical, business	23.3	12.3	13.5
Total all industries	100	100	100

Note : The percentages are based on sample data and consequently, are subject to sampling error. Totals may not equal the sum of the details due to rounding.

Source: GAO analysis of IRS statistics of income data on corporations for tax year 1992.

Table 3: Percentage of Research Corporations Subject to the 50-Percent Base Limit, by Size of Assets, Tax Year 1992

Asset range	Corporations subject to the 50-percent base limitation		
	As a percent of all research corporations in the asset range	Percent share of regular spending done by all research corporations in the asset range	Percent share of regular credit earned by all research corporations in the asset range
Less than $250,000	83.2%	93.6%	97.9%
$250,000 to $1 million	75.5	87.3	94.7
$1 million to $50 million	56.7	64.9	77.3
$10 million to $50 million	41.5	47.7	67.1
$50 million to $100 million	40.5	49.2	68.7
$100 million to $250 million	37.0	40.0	59.9
$250 million or more	27.0	10.4	25.8
All research corporations	59.6	18.8	40.0

Note: These data exclude corporations that reported no "regular" research spending. The numbers are based on sample data and consequently are subject to sampling error. The figures for all research corporations include those for 47 corporations that failed to report valid fixed-base percentages.

Source: GAO analysis of IRS Statistics of Income data on corporations for tax year 1992.

Table 4: Percentage of Corporations in the Panel Able to Earn a Regular Credit Each Year, by Industry, Tax Years 1989 Through 1992

Industry	Number of corporations in the industry	As a percent of all corporations in the panel	Percent of corporations in the industry earning regular credits			
			1989	1990	1991	1992
Agriculture	8	0.5%	87.5%	62.5%	37.5%	37.5%
Mining	28	1.8	53.6	39.3	35.7	35.7
Construction	13	0.8	53.9	38.5	38.5	38.4
Manufacturing	1,080	68.6	69.2	63.4	59.1	57.5
Transportation and public utilities	145	9.2	52.4	43.5	46.9	46.9
Wholesale trade	95	6.0	64.2	61.1	53.7	43.2
Retail trade	31	2.0	45.1	54.8	51.6	48.4
Finance	84	5.3	42.9	28.6	31.0	38.0
Services-medical	90	5.7	66.7	61.1	63.3	54.5
Total all industries	1,575	100.0	a	a	a	a

a. The percentages for all industries were 65.0 in 1989, 58.5 in 1990, 55.5 in 1991, and 53.6 in 1992.

Note: The panel consists of large corporations that (1) were present in the Statistics of Income corporate sample every year from 1989 through 1992 and (2) reported research spending or a research credit in at least one of those years. Totals may not equal the sum of the details due to rounding.

Source: GAO analysis of IRS Statistics of Income data on corporations for tax years 1989 through 1992.

Chairman JOHNSON. Thank you very much, Mr. Gandhi.
Ms. Pensabene.

STATEMENT OF JUDITH K. PENSABENE, DIRECTOR, FEDERAL AFFAIRS AND WASHINGTON COUNSEL, BALTIMORE GAS & ELECTRIC CO., BALTIMORE, MD., ON BEHALF OF ELECTRIC POWER RESEARCH INSTITUTE

Ms. PENSABENE. Good morning, Chairman Johnson, members of the subcommittee. My name is Judy Pensabene, and I am director of Federal Affairs for Baltimore Gas & Electric Co. Prior to my joining the company, I served for 5 years as counsel to the Senate Energy and Natural Resources Committee, where we had oversight for the research and development programs at the Department of Energy.

I appreciate the opportunity to provide testimony on behalf of the member companies of the EPRI, Electric Power Research Institute, regarding the nature of collaborative research and the potential benefits of the specific collaborative R&D tax credit modification as an incentive to promote this highly efficient approach to research and development. I have filed a statement for the record, and I will try to summarize that here so that we can move ahead.

As you examine the existing R&E credit and determine whether you would like to make it permanent, we want to bring to your attention the need for collaborative research that is not specifically addressed in the credit now, and to discuss benefits that would inure if the credit were specifically expanded for that type of research.

We therefore support the inclusion of a 20-percent credit for investment in collaborative research performed by 501(c)(3) not-for-profit scientific and educational organizations as an important part of the R&E credit that you are considering. It would serve as an incentive for the private sector to maintain its commitment to collaborative research.

We are moving toward an era of increasing budget cuts and Federal challenges, funding challenges that are in the offing right now as evidenced by the recent Budget Committee proposal to cut 50 percent out of just one section of the Department of Energy's R&D budget. When we couple that with the competitive arena in which the utility industry is now moving, we are looking at a double hit, if you will, upon our R&D infrastructure in the energy related field.

The technology development programs that are at the Department of Energy are very similar to the type of thing that EPRI does. I would like to talk to you a little bit about EPRI, give you a little background on it, and then proceed to tell you why I think this collaborative research credit would be a very good way to help meet some of these downward pressures on our general R&D infrastructure funding.

EPRI was founded in 1972 by leaders of the electric utility industry in response to a proposal by Congress, at that time occasioned by rolling blackouts in the Northeast United States, to place a mandatory funding requirement on the utilities for a federally conducted research program. The utilities responded by suggesting that they form a private sector consortium to conduct this research

in order to assure relevance of the R&D with respect to the industry and its customers.

EPRI's membership includes more than 700 electric utility members, ranging from the investor-owned utilities like BG&E to public and rural electric cooperatives. They represent about 70 percent of the total electricity sales.

Contributions to EPRI are approved by public utility commissions to ensure that their activities have the broadest public benefit. EPRI manages more than $500 million in research engaging in the kind of research that a utility on its own could not engage in because it is too costly and it is too risky. By joining forces and by joining together in this collaborative effort, EPRI members conduct research such as the Department of Energy does, that is a very broadly applicable research to the electric utility industry—research that would not be undertaken by the private sector on its own.

Under the existing credit, not only is there not an incentive, but there is really a disincentive for this kind of collaborative effort. Because of the way the IRS has interpreted the rules, 35 percent of all costs for collaborative research are disallowed. They not only take the 35 percent off with respect to the contracted-out costs, but—for other reasons—they disallow additional sums against those amounts that the utility industry has paid into for the collaborative research.

We believe that it would be wise for the Congress to consider putting a real incentive into this R&E credit for collaborative research. As I have already indicated, it is the most efficient way to do this very broadly applicable type research, and given that the Federal Government is going to make broad cuts across the board in this type of research, this would be a way to create real incentives to support research vital to our infrastructure.

Thank you very much. I would be happy to answer any questions you may have.

[The prepared statement follows:]

STATEMENT OF JUDITH K. PENSABENE
DIRECTOR, FEDERAL AFFAIRS AND WASHINGTON COUNSEL
BALTIMORE GAS & ELECTRIC CO., BALTIMORE, MD.
ON BEHALF OF MEMBERS OF THE ELECTRIC POWER RESEARCH INSTITUTE

Chairman Johnson and members of the Subcommittee, I appreciate the opportunity to provide testimony on behalf of the member companies of the Electric Power Research Institute (EPRI) regarding the unique nature of collaborative research and the potential benefits of a specific collaborative R&D tax credit modification as an incentive to promote this highly efficient approach to research and development. As difficult funding decisions are being made regarding the nature and level of federal support for technology research and development, we believe it is imperative to examine appropriate ways to encourage the private sector to fund more of these activities.

Federal funding challenges coupled with the transition to a competitive market environment in the utility industry has brought about a foreseeable strain on investment in R&D. Together these factors naturally have an impact on a company's investment in longer term R&D and result in an unintentional "double-hit" to this energy R&D infrastructure. Therefore, we support the inclusion of a 20% credit for investments in collaborative research performed by 501(c)3 not-for-profit scientific and educational organizations as an important component of the R&E credit. It would serve as an incentive for the private sector to maintain its commitment to collaborative research.

An examination of the technology development programs at the Department of Energy shows that EPRI serves as the Department's direct private sector counterpart. As a former counsel on the Senate Energy and Natural Resources Committee, I was responsible for oversight of these programs at DOE, and I can affirm that EPRI has played a pivotal role in the development and deployment of renewable energy , safety enhanced nuclear, cleaner coal-burning, efficient transmission and distribution, and environmental control technologies. EPRI uses an integrated, systems-wide approach to meet the needs of the utility sector, the ultimate customers for these technologies. Due to the scale of these technology areas and their relevance to the overall utility operations, joint investment in research will continue to be necessary to produce technology advances even in light of impending historic changes within the industry. Competition occurs in the strategic application of these technologies into individual systems. BG&G and other member companies will continue to value EPRI as the organization that will take us into the next generation of utility technologies.

ABOUT EPRI

EPRI was founded in 1972 by leaders of the electric utility industry. Due to rolling blackouts in the northeastern United States, Congress was proposing a mandatory fee from utilities to sponsor a federally-conducted research program. The utility industry responded by requesting that it be allowed to establish a private consortium to conduct the research in order to assure the relevance of its R&D to the industry and its customers. Hence, EPRI was founded and has met these criteria ever since.

Membership includes approximately 700 electric utility members ranging from investor-owned, to public, and rural electric cooperatives representing approximately 70% of our nation's electricity sales. EPRI's research covers the breadth of technologies relating to the generation, transmission and distribution, and end-use of electricity. EPRI has a core program that conducts high-risk, cutting-edge science and technology development that provides the basis for new applied technologies in the years to come, as well as, an environmental and health program that distinguishes the possible risks associated with such issues as electromagnetic fields, climate change and air, land and water quality.

EPRI manages research on behalf of its members and has operated as a 501(c)3 organization for the past 20 years. This status requires EPRI to operate in a manner that allows non-discriminatory access to research results. EPRI manages more than $500 million dollars in R&D annually. Membership in EPRI is voluntary and technology priorities are set by member companies. Member company dues are approved by State Public Utility Commissions ensuring that market driven research is consistent with the public interest. EPRI conducts research that is vital to assuring the efficient and economical production and use of electricity with an emphasis on safety, health, and the protection of the environment. The founders of EPRI made a strategic decision not to develop an in-house R&D infrastructure that could become antiquated or that would determine R&D priorities. EPRI draws on the expertise of universities, small business, and many other entities to carry out research and development projects. Due to the unique nature of EPRI, it is able to conduct highly-leveraged, non-duplicative research that would very likely not be carried out by individual member companies or otherwise.

VALUE OF A COLLABORATIVE R&E TAX CREDIT

The goal of an R&E credit was not just to promote R&E but to promote technological innovations that will have a practical, positive impact on the American public's standard of living. In contemplating changes to the credit, the committee should seek to encourage firms to leverage their limited R&D dollars through collaboration. This presents an excellent opportunity to think about the best ways to structure the credit to achieve its ultimate goals.

Again, proposed federal budget cuts across the board suggest that the credit be modified to reward private R&D activities that may be able to absorb some of this research and disseminate the results to the broadest public base possible. The structure of qualified collaborative 501(c)3 research meets both the scale and public benefits tests of this potential shift in responsibility. By pooling resources for R&D, consortia leverage limited individual R&D investment.

THE CURRENT CREDIT

The R&D tax credit is equal to 20% of the excess of (i) a taxpayer's "qualified research expenses" for the taxable year over (ii) the base amount.
Under the current Internal Revenue Code for the R&E credit, "Qualified research expenses" are defined as the sum of (i) in-house research expenses and (ii) contract research expenses. In-house research expenses can be generally viewed as expenses for research directly conducted by the taxpayer (e.g., amounts paid to an employee for research and amounts paid for supplies used in the conduct of that research). Contract research expenses are amounts which will be paid by the taxpayer to a third party for research.
A taxpayer is only entitled to take into consideration for purposes of determining the amount of "qualified research expenses" 65% of the cost of the research contract. This arbitrary 65% ceiling on creditable contract research expenses reflects a decision by Congress to eliminate from the credit, amounts paid for third-party contractor overhead. In other words, Congress determined that for each dollar spent on contract research, 35 cents was for overhead and 65 cents was for qualified research expense.

The statute, however, is silent as to the treatment of membership contributions to a collaborative research consortia. The Internal Revenue Service ("IRS") has taken the position in the utility industry that membership dues paid to a collaborative research consortia should be treated as contract research expenses and thus subject to the 65% ceiling/35% reduction. However, the IRS has taken the additional step of disallowing substantially all of the consortia's overhead expenses from the calculation prior to the 65% ceiling. Instead of 65 cents out of every research dollar spent by the consortia qualifying, now only a significantly lower amount is qualified. Essentially the

IRS is eliminating the overhead TWICE: first, by excluding it from the contract research expense definition; and second, by requiring a consortia member to reduce its contract research expenses by 35% as if such expenses still contained all of the consortia's overhead. This occurs under current law despite the fact that companies do collaborative R&D precisely because it is more efficient to pool resources.

CONCLUSION

The subcommittee's re-examination of the existing R&E credit creates an opportunity to recognize the benefits and efficiencies of collaborative R&D. By stimulating industry-led collaborative efforts, the credit will leverage increasingly scarce research dollars and encourage more efficient use of R&D resources. Collaborative efforts eliminate duplicative research projects, thereby minimizing the cost of the credit to the federal government. The collaborative credit will also stimulate new research -- research unlikely to be undertaken individually because it is too costly, too risky or too long-term. Finally, by making more efficient use of private R&D resources, the collaborative credit will fully and cost-effectively advance the aim and policy rationale behind the existing credit.

Chairman JOHNSON. Thank you.

You will notice that the timing lights are in use. We have a number of panels today, and I hate to limit your comments, but if you would try to abide by the lights, I would appreciate it.

Mr. Olesen.

STATEMENT OF DOUGLAS E. OLESEN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, BATTELLE MEMORIAL INSTITUTE, COLUMBUS, OHIO

Mr. OLESEN. Good morning, Madam Chairwoman—Mr. Portman, thank you for that introduction—and members of the subcommittee. I appreciate the opportunity to be here today to testify on behalf of this very important issue to the competitiveness of this country.

As Mr. Portman indicated, my name is Douglas Olesen. I am president and chief executive officer of Battelle Memorial Institute, which is the world's largest independent research and development organization. Our business is one that serves business across the spectrum of industrial sectors of this country and around the world. We work for small businesses on the one hand, and Fortune 100 companies on the other. As such, we have, I think, an unparalleled opportunity to watch the decisionmaking process in the industrial sector as they go about allocating R&D dollars and making priority decisions among those dollars.

We also track and predict R&D spending in this country every year; we have done that for more than two decades. I have some publications here that deal with R&D spending predictions in the United States for both government and industrial spending, which I will provide to the subcommittee in addition to my prepared statement. These forecasts are published widely in the Wall Street Journal, Business Week, and a lot of other publications every year and are well known for their accuracy, their depth, and content.

What comes out of our studies of R&D is an obvious increasing level of pressure on industrial organizations because of the global competitiveness that they face. This global competitiveness is causing fundamental changes in the R&D structure of this country, much greater pressure on industry to get greater returns out of R&D spending than they ever have in their past.

Also, this greater competition fuels a demand to move more products to market faster than companies have ever done in history, and it also provides pressure to move R&D expenditures much more toward shorter term, existing product improvement kinds of R&D, and increasingly puts pressure on our ability to ensure a long-term investment in our technology base of this country, which ultimately is the base that will generate breakthrough technologies that will be able to revolutionize entire industrial sectors.

It is in this atmosphere that I certainly recommend for your consideration that we give every consideration possible to providing mechanisms by which we can enhance the private sector R&D capacity of this country; and the R&D tax credit is a given individual device by which that can be accomplished. It certainly provides incentives to pay attention to longer term commitment to R&D and will help offset the concern now being felt that long-term R&D is being sacrificed for shorter term.

I also believe that the tax credit, as it has been used, has to some extent failed to fulfill its potential because of the significant changes that have occurred and the undependability of the application of the tax credit. So I would recommend for your consideration, first, that the tax credit be made permanent so that long-term research investments can be viewed with some stability, which is absolutely required if someone is going to stick with long-term R&D.

The second change I would recommend strongly is eliminating the base amount, making the credit nonincremental so that it is based on actual expenditures over the long term.

In total, I believe that the R&D tax credit in this way can be a major incentive to producing long-term research gains which are important to the competitiveness of this country.

Thank you.

[The prepared statement follows:]

STATEMENT OF DR. DOUGLAS E. OLESEN
PRESIDENT AND CHIEF EXECUTIVE OFFICER
BATTELLE MEMORIAL INSTITUTE
COLUMBUS, OHIO

Madam Chairman and Members of the Subcommittee, I appreciate the opportunity to testify before you today on an issue that is very important to the competitiveness of this country.

My name is Douglas Olesen. I am President and Chief Executive Officer of Battelle Memorial Institute. For those of you who don't know, Battelle pioneered the concept of contract research through the vision of our founder in the 1920s. Gordon Battelle, an industrial leader from Ohio, saw the need for an independent research and development capability to serve the evolving industrial enterprise that was forming in this country in the 1920s. He directed that his estate be used to establish a not-for-profit institute to serve this need.

Over the ensuing 65 years, Battelle has grown to become the world's largest independent contract research and development organization, with many offices and laboratories throughout the United States. Our technological achievements have ranged from materials research that aided the steel and aircraft industries, to the development of the office copier (the Xerox machine), to key involvement in the development of hundreds of new products, many of which we all use every day, such as the sandwich coin, compact discs, holograms, and even golf balls that resist splitting.

In 1994, Battelle conducted nearly $1 billion in research and development for industry and government. Our industrial clients range from small businesses to the largest corporations in the Fortune 100. Many of our industrial clients look upon us as a bridge that can link basic research to a finished product on the store shelf. Putting technology to work for industry and government is our goal and the underlying basis of our business.

With our long history of working hand-in-hand with industry on practical technologies, I believe we can offer a well-informed perspective on the issue at hand. In fact, our contract research work for industry serves as the means by which many companies utilize the R&D tax credit. Additionally, since Battelle is taxed under subchapter C, just as any corporation, we have also utilized the R&D tax credit ourselves, with our own internal research projects.

In our business, it is vitally important for us to monitor industrial R&D trends. For instance, every year we produce a forecast of R&D spending in the United States. Over the past two decades, those forecasts have been reported on widely in publications such as the *Wall Street Journal* and *Business Week*, and they have come to be known for their accuracy.

One of today's most important trends affecting industrial R&D that we have witnessed is the pressure from ever-stronger global competition. This unprecedented competition from around the world has served to increase pressures for companies to maximize the return from their technology investments. Greater competition has also fueled demands to move more new products to the marketplace faster than ever, leading many companies to direct more of their R&D investments toward short-term development and immediate problem-solving to reduce costs and link R&D investments more closely to specific products. But also, the increasing global competition has led to concerns over ensuring the health of our long-term technology base and has increased pressure on many companies' ability to sustain long-term research and development programs that can lead to the breakthrough technologies that can dramatically transform an entire industry. Today, businesses must juggle these various demands--which often appear to be mutually exclusive.

In this atmosphere, we need to do everything we can to encourage the build-up of private sector R&D capacity. The R&D tax credit is a very significant element for government to provide a business climate that stimulates both short- and long-term

industrial research in the private sector. Obviously, a tax credit cannot do this job alone. In all my years in the technology business, I have never heard anyone say that they conducted any research or did not conduct a research project solely because of a tax credit. Nevertheless, the R&D tax credit represents the type of positive action that can be one of the most effective methods for government to promote industrial research and create a business environment that nurtures growth and competitive strength in the private sector.

The R&D tax credit provides an added economic incentive to invest in research and development, thereby offsetting a portion of the rising R&D costs that we will witness as technology continues to grow more complex and more expensive. Further, the tax credit can serve as a more efficient method for government to support industrial R&D than direct funding of specific R&D projects, because it allows industry to make the decisions about what technology is needed to improve our industrial competitiveness. Today, we are living in a world that has become more consumer-pull rather than technology-push. Because consumers are becoming increasingly sophisticated, technology development is more and more focused on a rapid response to consumer needs, and the leaders of industry know those needs better than anyone else. The primary goal of a government technology policy, I believe, is simply to create a business atmosphere that encourages growth, competitiveness, and technological risk-taking. In such an atmosphere, our industrial leaders are better able to make the necessary technological investments that will help keep them competitive over the long term.

By establishing this positive, risk-friendly environment, we can build competitive capacity in the private sector and establish a sound blueprint for creating jobs and sustaining economic growth.

I believe, however, that the R&D tax credit, over the past several years, has not been able to fulfill its potential. The R&D tax credit would more effectively meet its goal with two changes that I would like to submit to the Committee.

First, I recommend that the credit be made permanent.

Research is often a long-term endeavor, and a permanent R&D tax credit would better allow industry to plan long-term research investments. Since the credit has been allowed to expire five times in the past 14 years, industry has not been able to count on the credit being available for long-term R&D commitments. As a result, it has been more difficult for planned long-term R&D projects to come in line with ever-increasing business demands to lower costs and obtain a rapid return on investment.

The second change I would recommend is eliminating the base amount, making the credit non-incremental, and basing the credit on actual R&D expenditures.

Companies that maintain a constant R&D investment over a number of years should be rewarded for their long-term efforts, as well as those companies that increase their R&D investments from one year to another. It is through this long-term investment that companies can best develop the depth in their research and development efforts that will give them the capability of developing breakthrough technologies.

In conclusion, I would like to stress the importance of building competitive strength in the private sector. Over the past few years, overall industrial R&D spending has been flat or has shown only moderate increases, and R&D spending in the government sector is now on the decline. Yet, in most major industries, technology is a critical driver in today's global marketplace.

The companies that can capture the best technology and bring it to the marketplace the quickest, the companies that can use technology to offer their products and services faster, better, and cheaper—those are the companies that will have a strong competitive advantage. For today and tomorrow, one of the most effective ways to build

a solid and long-term competitive edge will be through technology. Our investments in technology are among the most critical investments we are making today.

Certainly, there are a number of government policies that affect R&D spending levels and that can help provide industry with the added incentive to increase technological investments. The R&D tax credit is one such tool that we can utilize more efficiently to establish a business climate that stimulates the development of innovative technologies, industrial growth, and economic well being.

Thank you.

Chairman JOHNSON. Thank you, Mr. Olesen.
Dr. Hooker.

STATEMENT OF MICHAEL HOOKER, PH.D., PRESIDENT, UNIVERSITY OF MASSACHUSETTS, ON BEHALF OF THE NEW ENGLAND COUNCIL, BOSTON, MASS.

Mr. HOOKER. Madam Chair, members of the subcommittee, my name is Michael Hooker, I am president of UMass, the University of Massachusetts. I am pleased to have the opportunity to testify before you this morning on an issue that I believe is critical not only to sustaining our economic recovery, but also to securing our economic prosperity in a highly competitive knowledge-based economy of the 21st century. I am testifying today on behalf of The New England Council.

The Council is the nation's oldest regional business organization comprised of the leading manufacturers, service industries, colleges and universities, financial institutions, public utilities, and technology companies in the six-State New England area.

I want to commend you, Madam Chair, for holding hearings on the need to permanently extend the R&D tax credit and for your leadership along with that of Representative Richard Neal of Massachusetts in introducing H.R. 803, a bill to permanently extend the credit.

I also want to acknowledge the efforts of Massachusetts Governor William Weld, who has been a tireless advocate and leader among the Nation's Governors for a permanent Federal increase. My remarks this morning will focus less on the structure of the credit and more on the importance of permanence for the credit.

Let me begin with some specifics of the New England economy and why research and development is so important there. To appreciate where we are, we must realize where we have been. The recession of the late eighties and early nineties was longer and deeper for New England than for any other region of the country. New England lost 850,000 jobs during this time period. This amounts to 25 percent of the jobs lost nationwide and 13 percent of our region's total employment. Only 37.5 percent of the jobs are back. While our economy has clearly improved, we still have a long way to go to get back to the prerecession levels.

When you are preparing nearly 60,000 students for the workplace, as we are this year at UMass, these employment numbers are of great concern.

Despite the results of the recession, I believe that New England can have a very bright future and a robust economy. We are home to some of the best research universities and teaching hospitals in the world, education is a major component of our economy, and we have the highest concentration of educational facilities of any region in the country. New England produces highly educated and innovative individuals.

Gone, for the most part, are the days of agriculture in New England. Today, the New England economy is based on knowledge and information. It is no coincidence that clustered around New England's educational institutions are small, startup firms and entities that grew out of the research and the work that is performed and nurtured by our institutions.

Our recovery has been fueled largely by entrepreneurship in small and medium-sized firms, many based on sophisticated technology. Absent an environment conducive to growing these kinds of new businesses, we are doomed to a prolonged period of stagnant growth and limited opportunities for this and future generations.

New England is at a crossroads. We have the potential to grow and prosper in some of the most advanced and exciting markets in the world, creating high-paying and meaningful jobs. The business climate is a critical component of our success. The Federal Government has a very important role in promoting the development of this potential. Public policies that encourage and require long-term investment are necessary for our economic future.

Incentives like the R&D tax credit have helped New England's emerging industries to grow and thrive. Our high technology, biotech, software and chemical sectors all benefit from the credit. For these industries, research activities translate directly into high-wage jobs, which is music to the ears of those 60,000 UMass students who will soon be looking for work. In fact, it is the cost of wages and salaries related to R&D that make up most of the credit-eligible expenses. Indirectly, research is the key to tomorrow's products, methods, and new sources of economic development.

Although the R&D tax credit has proven to be an effective means of increasing private sector investment and improving the Nation's overall competitiveness, its incentive value is limited because of its temporary nature and uncertain future. In order for the private sector to fully realize the benefits of this credit, it must be made a permanent feature of the Tax Code. This is the only way to encourage the long-term growth that is most needed in New England.

Most R&D projects span over 5 to 10 years. A temporary credit can actually inhibit a company's ability to judge and plan for more lengthy projects. In most cases, it is the longer term projects that are more risky, yet also that provide the most economic benefit in the years ahead.

The New England Council strongly believes that a permanent R&D tax credit will significantly enhance its incentive value and improve the competitive position of the region. In fact, the Council coordinated a letter signed by over 100 companies which was sent to the New England congressional delegation and the congressional leadership supporting permanence for the credit.

Now, more than ever, New England needs a business climate which fosters the development of new technologies and industries. Research and development can lead to advances in science and technical knowledge, which in turn lead to productivity improvements and long-term economic growth.

I urge you to enthusiastically support and enact H.R. 803.

Thank you, Madam Chair.

[The prepared statement and attachment follow:]

THE
NEW ENGLAND
COUNCIL

Testimony of Dr. Michael Hooker
President, University of Massachusetts

On Behalf Of
The New England Council

Before
the U. S. House of Representatives
Committee on Ways and Means
Subcommittee on Oversight

May 10, 1995

Madame Chair and Members of the Subcommittee, my name is Michael Hooker I am the President of the University of Massachusetts. I am pleased to have the opportunity to testify before you this morning on an issue that I believe is critical to sustaining an economic recovery not only in New England but across the nation as well.

UMASS is a public university system with facilities located on five different campuses in the state. Beginning with our flagship in Amherst we also have campuses in Lowell, Dartmouth, Boston and the Medical Center in Worcester. First established in 1863 as a land grant university, UMASS was chartered to support the state's agriculture and mechanical arts.

I am testifying today on behalf of the New England Council. The Council is the nation's oldest regional business organization comprised of the leading manufacturers, service industries, colleges and universities, financial institutions, public utilities and technology companies in the six-state area.

I want to commend you, Madame Chair, for holding hearings on the need to permanently extend the R & D tax credit, and for your leadership - along with Representative Richard Neal of Massachusetts - in introducing HR 803, a bill to permanently extend the credit. I also want to acknowledge the efforts of Governor Weld who has been a tireless advocate and leader among the nation's governors for a permanent federal credit.

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My remarks this morning will focus less on the structure of the credit and more on the importance of permanence for the credit.

Let me begin with some specifics of the New England economy and why research and development is so important. To appreciate where we are we must realize where we have been. The recession of the late eighties and early nineties was longer and deeper for New England than any other region of the country. We lost 850,000 jobs during this time period. This amounts to 25% of jobs lost nationwide and 13% of our region's total employment. Only 37.5% of the jobs are back. While our economy has clearly improved we still have a long way to go to get back to pre-recession employment levels.

Despite the results of the recession, I believe New England can have a very bright future. We are home to the some of the best universities, institutions of higher learning, teaching hospitals and laboratories. Education is a major component of our economy and we have the highest intensity of these facilities of any region in the country. New England produces highly educated and innovative individuals.

Gone, for the most part, are the days of agriculture. Today the New England economy is based on knowledge and information. It is no coincidence that clustered around New England's educational institutions are small start-up firms and entities that grow out of the research and work that is performed and nurtured by our institutions.

Many in New England believe that our recovery has been fueled by small and medium sized firms, many in high-tech, biotech and entrepreneurial ventures. Absent an environment conducive to "growing" these kinds of new businesses, we are doomed to a prolonged period of stagnant growth and limited opportunities for this and future generations.

New England is at a crossroads. We have the potential to grow and prosper in some of the most advanced and exciting markets in the world creating high paying and meaningful jobs. The business climate is a critical component of our success. The federal government has a very important role in promoting the development of this potential. Public policies that encourage and reward long term investment are necessary for our economic future.

In 1981, President Reagan established the R & D tax credit for the sole purpose of increasing U. S. productivity by spurring growth in our technology-based economy. Recognizing the importance and effectiveness of the provision, the U. S. Congress has extended the credit six times since then.

Incentives like the R & D tax credit have helped New England's emerging industries to grow and thrive. Our hi tech, biotech, software and chemical sectors all benefit from the credit. For these industries research activities translate directly into high wage jobs. In fact, it is the cost of wages and salaries related to R & D that make up most of the credit-eligible expenses. Indirectly research is the key to tomorrow's products, methods and new sources of economic development.

The importance of the credit to New England can be seen in the following statistics:

* In 1991, New England spent over $11 Billion on R & D activities;

* Massachusetts was number five in the country in total R & D investment, spending over $8 Billion in 1991;

* Top industry credit earners are computers, computer software, pharmaceuticals and biotechnology, all successful growth industries in the region;

* Although the bulk of R & D is still performed by large companies, small businesses are an increasingly important source of R & D spending and an important source of job creation in New England.

Although the R & D tax credit has proven to be an effective means of increasing private sector investment and improving the nation's overall competitiveness. Its incentive value is limited because of its temporary nature and uncertain future.

In order for the private sector to fully realize the benefits of the R & D tax credit it must be made a permanent feature of the tax code. This is the only way to encourage the long term growth that is most needed in New England. Most R & D project span over five to ten years. A temporary credit can actually inhibit a companies ability to judge and plan for a more lengthy project. In most cases it is the longer term projects that are more risky, yet also provide more economic benefit in years ahead.

The New England Council strongly believes that a permanent R & D tax credit will significantly enhance its incentive value and improve the competitive position of the region. In fact, the Council coordinated a letter signed by over one hundred companies and sent yesterday to the New England Congressional delegation and the congressional leadership supporting permanence for the credit. Madame Chair I respectfully request that a copy of the letter, along with the list of companies who have endorsed it, be made a official part of the record of this hearing. If permanent, corporations will be able to rely upon continued availability of the credit when making long term R & D investment and overall business decisions.

Now more than ever New England needs a business climate which fosters the development of new technologies and industries. Research and development leads to advances in scientific and technical knowledge, which in turn leads to productivity improvements and long-term economic growth. A permanent federal R & D tax credit will provide the necessary incentive for continued economic recovery for New England. I urge you to enthusiastically support and enact HR 803. Thank you.

THE
NEW ENGLAND
COUNCIL

May 9, 1995

The Honorable Bill Archer
Chairman, Committee on Ways and Means
1102 Longworth House Office Building
Washington, D. C. 20515

Dear Mr. Chairman:

The undersigned urge you to enact a permanent research and development tax credit as part of the Fiscal Year 1996 Budget legislation. As the present R & D credit will expire on June 30, 1995, the inclusion of a permanent credit in the FY96 Budget legislation will be a major signal to the U. S. research community and industries such as ours that the credit will continue.

We know that the Congressional Leadership considers long-term economic growth a high priority and appreciate your consistent efforts on behalf of a permanent R & D tax credit.

The six state New England region, abundant with high technology companies, universities, colleges, laboratories and teaching hospitals, is on the cutting edge of information and technology. At a time when our economy is still recovering from a prolonged and deep recession, incentives like the R & D tax credit allow companies to utilize these resources in pursuit of new products and services, while also providing high-paying jobs to highly skilled workers.

Investment in R & D has proven vital to the technical innovation and productivity enhancements that are necessary to maintain a competitive position in the world marketplace. As significant as the benefits of the credit are, they have been reduced by its temporary nature. Uncertainty over the future of the credit reduces its incentive value since most R & D projects are long-term efforts, spanning 5-10 years.

Research and development activities hold great promise for New England's high-tech economy. We are poised for significant growth provided the business climate is one which stimulates and facilitates long-term investment. We believe permanent extension of the R & D tax credit will create this kind of environment. We thank you for your past support and urge you to actively support inclusion of a permanent R & D tax credit in the FY96 Budget legislation.

Sincerely,

Richard Chapman, President & CEO, Vermont Electric Power Co., Rutland, VT
William Meagher, Managing Partner, Arthur Andersen, Boston, MA
James Manzi, President & CEO, Lotus Development Corp., Cambridge, MA
Hugh MacKenzie, President & Retail Business Group, Northeast Utilities, Hartford, CT
Joanna Lau, President & Chairman, Lau Technologies, Acton, MA
Edward Johnson, Chairman & CEO, Fidelity Investments, Boston, MA

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John Rowe, President & CEO, New England Electric System, Westborough, MA
Jack Rennie, Chairman & CEO, Pacer Systems, Billerica, MA
Anthony Dolphin, President & CEO, Springboard Technology, Springfield, MA
William Van Faasen, President & CEO, Blue Cross & Blue Shield of Massachusetts, Boston, MA
Robert Hunter, CEO, Delta Dental Plan of Massachusetts, Medford, MA
Paul Barrett, CEO, Boston Energy Group, Boston, MA
Donna DiBella, President, Patient Care of Connecticut, Wethersfield, CT
Henri Termeer, Chairman & CEO, Genzyme Corporation, Cambridge, MA
William Roland, President, Megapulse, Bedford, MA
John Hamilton, Managing Partner, Hale and Dorr, Boston, MA
Thomas May, Chairman & CEO, Boston Edison Company, Boston, MA
Ira Stepanian, Chairman & CEO, Bank of Boston, Boston, MA
Donald Reed, President & Group Executive, NYNEX Corporation, Boston, MA
Mitchell Kertzman, CEO, Powersoft Corporation, Concord, MA
Joseph Boren, Chairman & CEO, Metcalf Eddy, Wakefield, MA
Michael Hooker, President, University of Massachusetts, Boston, MA
John Kreick, President, Lockheed Sanders, Nashua, NH
Vincent Rocco, Chairman & CEO, TRC Companies, Windsor, CT
George Hatsopoulos, President & Chairman, Thermo Electron Corp., Waltham, MA
Jonathan Fleming, Proprietor, CT Defense Support & Diversification, Rocky Hill, CT
Dr. J. Richard Gaintner, President & CEO, New England Deaconess Hospital, Boston, MA
Roger Young, President & CEO, Bay State Gas Company, Westborough, MA
Kija Kim, President & CEO, Harvard Design and Mapping Company, Cambridge, MA
Marc Rosen, Vice President of Government Affairs, A T & T, Boston, MA
Preston Jordan, CEO, Blue Cross Blue Shield of Vermont, Montpelier, VT
James DiStasio, Managing Partner, New England Area, Ernst & Young, Boston, MA
William Haney, President & CEO, Molten Metal Technology, Waltham, MA
Kenneth Quickel, President, Joslin Diabetes Center, Boston, MA
William O'Neill, Jr., EVP & CFO, Polaroid Corporation, Cambridge, MA
Stephen Wilmarth, CFO, Alliance International, Deep River, CT
Frederick Lofgren, CFO, Hitchiner Manufacturing, Milford, NH
Bryan Carlson, President, Mount Ida College, Newton Centre, MA
Werner Schuele, Senior Vice President & Site Mgr., Texas Instruments, Attleboro, MA
Stephen Woodsum, Managing Partner, Summit Partners, Boston, MA
Lawrence O'Toole, President & CEO, Nellie Mae, Braintree, MA
Marianne Lancaster, President, Lancaster Packaging, Hudson, MA
Martin Kofman, Partner, Kofman & Company, Chestnut Hill, MA
Joseph Norberg, CFO, Hill, Holliday, Connors, Cosmopulos, Boston, MA
George Sage, President & Treasurer, Bonanza Bus Lines, Providence, RI
Thomas Robinson, President, The Entwistle Company, Hudson, MA
Edwin Smith, Chairman & CEO, Brockway-Smith Company, Andover, MA
Robert Fiscus, President & CFO, United Illuminating Co., New Haven, CT
Edward Shooshanian, Chairman, Shooshanian Engineering Associates, Boston, MA

Robert Morrow, Vice President, DB Riley Consolidated, Worcester, MA
John Hoy, President, New England Board of Higher Education, Boston, MA
Kenneth Kasses, Executive Vice President & President, Radiopharmaceuticles Division, The Dupont Merck Pharmaceutical Company, Billerica, MA
Marjorie Beck, President, MRB Media Services, Windsor, CT
Thomas Maloney, CFO, John Hancock Mutual Life Insurance, Boston, MA
L. Douglas O'Brien, President & CEO, First NH Banks, Manchester, NH
John Davis, President/Treasurer, American Saw & Mfg., East Longmeadow, MA
Steve Duplessie, CEO, Invincible Technologies Corp., Franklin, MA
Thomas Aceto, President, North Adams State College, North Adams, MA
John Curry, President, Northeastern University, Boston, MA
Daniel Grady, Vice President, Finance & CFO, Bose Corporation, Framingham, MA
Richard Verney, Chairman & CEO, Monadnock Paper Mills, Bennington, NH
Donald Sundberg, Interim Vice President, Research & Public Service, University of New Hampshire, Durham, NH
Russell Stephens, Senior Vice President, Continental Cablevision of NE, Andover, MA
Dean Langford, President, Osram Sylvania, Danvers, MA
Ross George, President & CEO, Simonds Industries, Fitchburg, MA
Peter Gwyn, President & CEO, Bird-Johnson Company, Walpole, MA
David Hunter, CFO, Micrion Corporation, Peabody, MA
Leon Hirsch, CEO, United States Surgical Corporation, Norwalk, CT
Michael Lucy, Senior Vice President, J. Makowski Company, Boston, MA
K. Grahame Walker, Chairman & CEO, The Dexter Corporation, Windsor Locks, CT
Michael Besson, President & CEO, Norton Company, Worcester, MA
Harron Ellenson, Harron & Associates, Boston, MA
Robert Hirschman, President, Whitman & Howard, Wellesley, MA
William Russell, CEO, Fulflex, Middletown, RI
John Kortecamp, President, The Alliance Foundation, Portland, ME
George Campbell, President, The Maine Alliance, Portland, ME
Richard Ayers, Chairman & CEO, The Stanley Works, New Britain, CT
Craig Frew, President, Iroquois Pipeline Operating Company, Shelton, CT
John Silber, President, Boston University, Boston, MA
John Mahoney, President, Health Insurance of Vermont, Colchester, VT
Daniel Hannify, President, G. S. Precision, Brattleboro, VT
Charles Drewes, President, Polymers, Middlebury, VT
Kymus Ginwala, President, Northern Research & Engineering Corp., Woburn, MA
Morris Levy, Senior Vice President, Parsons Brinckerhoff, Boston, MA
Peter D'Angelo, Executive Vice President & CFO, Raytheon Company, Lexington, MA
Peter Hunter, VP & CFO, Data Instruments, Acton, MA
Lawrence Gannon, CEO, Keyes Associates, Providence, RI
J. Thomas Robinson, President, Nyacol Products, Ashland, MA
Peggy Stock, President, Colby-Sawyer College, New London, NH
Robert Carothers, President, University of Rhode Island, Kingston, RI

Thomas Vanderslice, Chairman & CEO, M/A Com, Lowell, MA
Sheila Reney, Director of Finance, Province Automation, Sanford, ME
Richard Egan, Chairman, EMC Corporation, Hopkington, MA
Victoria Bondoc, CEO, Gemini Industries, Bedford, MA
Conrad Grondin, CEO, Prescott Metal, Biddeford, ME
Joseph Mullaney, Vice Chairman, The Gillette Company, Boston, MA
Harry Hartley, President, University of Connecticut, Storrs, CT
Betty Diener, Executive Director, Environmental Business Council, Boston, MA
Thomas Yale, President, Yale Cordage, Portland, ME
Jack Blais, President, OFC Corporation, Natick, MA
Paul Montrone, President & CEO, Fisher Scientific International, Hampton, NH
William Mitchell, President & CEO, Nashua Corporation, Nashua, NH
Harold Hitchen, CFO, Amica Mutual Life Insurance, Lincoln, RI
Ronald Cass, Dean, Boston University School of Law, Boston, MA

cc: Hon. Newt Gringrich

Chairman JOHNSON. Thank you, Dr. Hooker.
Mr. Anderson.

STATEMENT OF CHRISTOPHER R. ANDERSON, GENERAL COUNSEL, MASSACHUSETTS HIGH TECHNOLOGY COUNCIL, INC., WALTHAM, MASS.

Mr. ANDERSON. Thank you, Madam Chair, members of the subcommittee. My name is Christopher Anderson, general counsel of the Massachusetts High Technology Council, Inc. We urge you and other Members in Congress to support this very timely initiative to make the Federal research and development tax credit permanent.

I would also like to thank, in addition to your efforts, Madam Chair, the efforts of the Massachusetts delegation that have signed on as cosponsors, Congressmen Blute, Frank—we expect Marty Meehan to be an official sponsor soon—Moakley, Neal, and Studds. My plane doesn't leave until 7:30 tonight so I still have time to get a few more for you before I leave.

This is the first time the High Tech Council has testified in Washington. Our primary focus is on Massachusetts public policy issues to make Massachusetts more competitive than other States for high technology companies. Our efforts have been aided significantly by Governor Weld to help improve the climate for high technology in Massachusetts. We compete now with California, Texas, North Carolina, and other States who are becoming very aggressive.

The Federal research and development tax credit would address similar competition from other nations for our research and development activities. Therefore, the goal which you stated today, to evaluate what the policy objective is, I think is probably twofold. One is to encourage additional research and development spending in this country and see, through a policy vehicle, how the Federal Government can reduce the cost of capital and encourage further economic growth.

Providing industries that are committed to expanding their R&D commitments in the United States with a permanent extension of the Federal R&D tax incentive will help achieve both of those objectives.

Very specifically, the Massachusetts High Technology Council believes an effective research and development incentive should have two key features. It must be incremental, and it must be permanent. That view isn't shared by everyone, I understand. However, we believe that this does achieve the objective—the policy objective of creating and rewarding those industries and companies that actually do more.

Now, there are a couple of limitations, and I will divert from my written comments and request that they be submitted in the record here. Let me just comment briefly on a point that has come up and I am sure will come up again.

That point is cost. While not being from inside the beltway, and fully understanding how the game works, the static nature of revenue projections have never told the whole story in the view of the high technology community in Massachusetts. We would prefer to view incentives and evaluate them based on a more dynamic model of revenue impact; and as Congressman Meehan and others have

alluded to, there are dynamic factors, job multipliers, that do demonstrate that this is a job-generating, revenue-enhancing vehicle that proves that you can actually grow the revenue pie without raising taxes.

So we would not concede a cost, and we would rather focus on the dynamic elements of what the research and development tax credit leads to, both in terms of job growth and in terms of tax revenue.

The Massachusetts High Technology Council played a key role in the development of a permanent State-level research and development tax credit in our State, and one key distinction that we made versus similar credits adopted by other States and by the Federal Government was that it was permanent and provides investors with crucial decisionmaking factors of certainty and stability.

As Dr. Hooker mentioned, Governor Weld has played a very active and aggressive role in helping to lead the charge of the Nation's Governors to make this tax credit permanent. He sent a letter to Chairman Archer 2 days ago. I have a copy of that letter here, but I would like to officially request that it be included in the record if possible.

Chairman JOHNSON. Without objection.

[The information follows:]

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE DEPARTMENT
STATE HOUSE • BOSTON 02133
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WILLIAM F. WELD
GOVERNOR

ARGEO PAUL CELLUCCI
LIEUTENANT GOVERNOR

May 8, 1995

The Honorable Newt Gingrich
Speaker of the House
H-232 Capitol Building
Washington, DC 20515

Dear Mr. Speaker:

As you know, the federal research and development tax credit is scheduled to expire on June 30, 1995. As Governors of seven of the largest industry-based R&D states in the nation, we are writing to seek your assistance in securing a permanent extension of the federal R&D tax credit. We believe this is the type of market-based, pro-growth tax policy that our party should champion.

In 1981, President Reagan signed into law a four-year R&D tax credit to help stimulate the growth and competitiveness of our technology-based economy. The results have been impressive. Recent studies indicate that the marginal effect of one dollar of the R&D credit stimulates approximately one additional dollar of private research and development spending over the short run, and as much as two dollars of extra R&D in the long-run. Today, in our seven states, the private sector alone spends more than $60 billion per year on R&D. These investments support thousands of highly skilled employees in some of our nation's most promising industries, such as computer hardware and software, biotechnology, telecommunications, pharmaceuticals, and environmental technologies.

As significant as the benefits of the R&D credit are, however, they have been limited by the credit's temporary nature and uncertain future. Since its inception, the R&D credit has been allowed to expire five times, being renewed once retroactively. This uncertainty has hampered the private sector's ability to rely on the credit, forcing many research planners to discount its value when calculating long-term R&D related investments. Given the lengthy nature of R&D projects--frequently spanning five to ten years--permanent extension of the credit would greatly enhance its incentive value and overall effectiveness in stimulating increases in private sector R&D.

Unfortunately, the problems posed by the temporary nature of the credit are also exacerbated by our foreign competitors' generous tax incentives for R&D, including deductibility of current research expenses and special tax credits. Such incentives have caused many U.S. employers to consider the option of transferring their R&D functions overseas to remain competitive in the international marketplace. As a result, our nation runs the risk of becoming an importer, rather than an exporter, of technology and technologically advanced products in the years ahead.

We believe that the Republican Party has a unique opportunity to demonstrate to employers and the nation that we are committed to the principles of long-term economic growth and smaller government, a permanent R&D tax credit delivers both these principles. As a market-based incentive, a permanent R&D tax credit keeps Washington out of the game of picking winners and losers, while fostering an environment conducive to rewarding the patient, technologically based investments of our finest entrepreneurs. By letting the private sector do what it does best, the credit is one of the federal government's most effective means of encouraging real economic growth in the twenty-first century.

Your support is vital to enact a permanent credit in 1995. We look forward to working with you to achieve this important goal in the months ahead.

Sincerely,

Governor Bill Weld

Governor Pete Wilson

Governor George E. Pataki

Governor John Engler

Governor Christine T. Whitman

Governor Jim Edgar

Governor George W. Bush

Mr. ANDERSON. Former Senator Paul Tsongas has long advocated and recognized the value of a permanent R&D tax credit, and as a matter of fact, so too has Massachusetts Congressman Joe Kennedy, so I would expect that the meeting of the minds has been achieved here; and the real question that we ought to be asking shouldn't be, how can we afford this incentive for increased research and development activity. Instead, today, we should ask what action might we take today to provide a long-term boost to our economy.

This is such an action you should take today, and we appreciate your role and the subcommittee's role in helping make sure that this is the last hearing on an extension of the research and development tax credit, and that when the subcommittee concludes its action and Congress does, that we are talking about a permanent incremental tax credit.

[The prepared statement follows:]

MASSACHUSETTS HIGH TECHNOLOGY COUNCIL

Dedicated To Growth ... Committed To Action

Testimony of:
Christopher R. Anderson, General Counsel
Massachusetts High Technology Council, Inc.

Submitted to the United States House of Representatives
Committee on Ways and Means
Subcommittee on Oversight

in *Support* of H.R. 803 making the current
Research and Development tax incentive Permanent

Hearing Date: May 10, 1995

The Massachusetts High Technology Council urges the House Ways & Means Committee's Subcommittee on Oversight to support H.R. 803 sponsored by Congresswoman Nancy L. Johnson (R-CT) and co-sponsored by more than 50 other Representatives to make the current "job-generating" incremental research and development tax incentive permanent. This incentive, first adopted in 1981, is scheduled to expire on June 30, 1995.

Research and development is the basic ingredient in the process of innovation which leads to improved productivity, products and services which in turn result in increased efficiency, reduced costs and improved quality of life for many people throughout the world. While helping to facilitate increased research and development, a permanent, federal incremental research and development tax incentive will also have a significant and positive long-term impact on economic growth in the United States, help to create needed jobs, increase competitiveness, reduce the cost of capital, and generate revenue without raising tax rates.

There is no serious dispute among economists or policy makers about the fact that an environment that stimulates and facilitates the process of innovation is essential to continued growth. However, during the past 50 years, 40 percent of America's research and development was related to Defense Department objectives. Some of those military technologies became important civilian products, but did so as spin-offs from defense related objectives rather than by the pursuit of specific commercial and industrial objectives.

By the early 1990s, the nation's technology industries had already begun a transition away from shrinking federal defense spending. The key problem now is how to facilitate growth in important technologies to enable U.S. industries to be more competitive in a global commercial economy.

Investments in R&D and in capital equipment are the principal mechanisms by which new technology is created and deployed. The high cost of capital in the United States as compared to that of other countries, has the effect of retarding these investments and thus retarding relative

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productivity growth. Providing industries that are committed to expanding their R&D commitments in the United States with a permanent extension of the federal R&D tax incentive will help lower that cost.

Specifically, the Massachusetts High Technology Council believes an effective research and development incentive should have two key features: it must be incremental, and it must be permanent.

In urging President Clinton to support a permanent R&D tax incentive, Massachusetts Governor William F. Weld (R) said "Massachusetts has benefited greatly since we enacted the country's most generous tax incentive for research and development. We've already seen companies either move here or expand in Massachusetts to take advantage of the tax credit."

Former U.S. Senator Paul Tsongas (D-Massachusetts) said providing for a permanent research and development tax incentive "should be self-explanatory." "We can't compete long-term if we are not putting our earnings back into research and development. Such reinvestment into a company should be viewed as the corporate investment of highest priority and taxed accordingly."

U.S. Representative Joseph P. Kennedy II (D-Massachusetts) urged Congress to permanently restore the R&D tax incentive, saying "the R&D tax credit has provided a valuable economic incentive for U.S. high tech companies to increase investment in R&D in order to enhance their competitiveness in the world marketplace. The growth and prosperity of our economy here in New England and across the nation depends on the kind of investment-friendly climate that the credit provides."

The Massachusetts High Technology Council played a key role in passage of a permanent state-level research and development tax incentive in 1991. We believe Massachusetts now has the most attractive state-level R&D tax incentive in the United States. This law creates an important tax incentive for incremental increases in R&D investments in Massachusetts. For many Massachusetts employers and researchers on our public and private university campuses, this incentive is a visible change in Massachusetts tax policy which demonstrates the Commonwealth's commitment to re-establishing an investment-stimulating, job-creating, pro-research climate.

The purpose of the Massachusetts R&D tax incentive is straight-forward: it is designed to influence future decisions on where and even how much R&D is conducted. It was modeled on the federal R&D language in effect at the time, and has a number of distinct advantages over similar R&D incentives in other states. One key distinction is that it is permanent, providing investors with the crucial decision-making factors of certainty and stability.

In addition, we are currently working to amend the Massachusetts R&D incentive in two ways that could also be adopted on the federal level. One amendment would allow for a one-time election of a new 4-year base period ranging between 1983 and 1995 from which to calculate the qualifying incremental increases in R&D expenses. Another amendment would allow reductions in defense-related R&D to be excluded from the calculation of incremental growth in commercial R&D. Both of these new features will provide companies with additional flexibility to increase the "incentive" value of the credit while preserving the important "incremental" requirement and are

particularly helpful to companies making the transition from defense-related to commercial R&D activities. We urge you to consider these two features as well.

We believe a permanent, federal incremental R&D tax incentive will stimulate additional research activity, thereby increasing jobs and revenue, both in the short run and in the long run when successful new products and services are brought to market. In this context, the question shouldn't be: How can we afford this incentive for increased research and development activity? Instead we should ask: What action might we take today to provide a long-term boost to our economy? This is such an action you should take today.

We urge the House Ways & Means Committee's Subcommittee on Oversight to support H.R. 803 making the current research and development tax incentive permanent.

About the Massachusetts High Technology Council:

The goal of the Massachusetts High Technology Council is to help make Massachusetts the world's most attractive place in which to live and work, and in which to create, operate and expand high technology businesses.

The Council is a non-profit, non-partisan corporation made up of 200 entrepreneurial and respected chief executive officers of Massachusetts high technology companies -- employing more than 300,000 people.

Because it holds no political affiliation, the Council is free to focus on any issue which affects the Massachusetts economy, and to take a firm leadership role in instituting change wherever it is needed.

Since the Council's founding in 1977, it has advocated for, and ultimately influenced, state policies which have helped improve the business climate for the Massachusetts high tech industry. Today, its advice and support is sought on a wide variety of issues by members of the state legislature, the Governor's office, the national media, the education community, and other organizations, both public and private, in Massachusetts and around the world.

Chairman JOHNSON. Thank you, Mr. Anderson.

I thank the panel for your testimony.

I want to ask you all, which do you think would encourage greater research, the incremental structure that is in the current law, though possibly adjusted, or a flat tax at a lower rate?

Mr. ANDERSON. I would be willing to take a stab at that.

Chairman JOHNSON. One of the reasons this is important, I think the point that Dr. Olesen made about depth is very important, and when you look at how we can focus this in a way that it will help small business as well as big business, a flat tax on research and development investment may be more important than maintaining the incremental approach. It also may be a lot easier to administer.

But this is a fundamental issue. I want to get your input; I am going to be asking the other panels, too. We need to know whether we need to really write this all over again, or whether we need to look at base year modifications and that kind of thing.

Mr. ANDERSON. If I could just briefly respond, then other members of the panel.

We have endorsed the incremental approach. Corporations are people, they are a collective group of people, so the initial debate really is, should we tax corporations at all since the people who make up these companies end up generating wealth, paying income taxes, and generating other sources of revenue. The fact that there is a corporate income tax at all leads to this discussion of tax credits applied to the general tax.

I think in a pure environment there shouldn't be a tax on corporations and therefore the discussion ends at that point. It is not very realistic to expect a nonincremental credit, because you get around one of the key objectives of the current system, and that is to encourage incremental increases, or reward increases, and not reward those who may actually benefit from a nonincremental credit by making reductions in their research and development expenditures. So in that context, I think we would encourage remaining with the incremental nature of the credit and, as we have in Massachusetts, provide for two amendments. One is to provide an election for corporations to make a selection of what their base year period is.

I mention in my written remarks that we have a proposal in Massachusetts to allow a one-time election that will establish a 4-consecutive-year base period that slides anywhere from 1983 to 1995; that gets over some of the objections where companies are stuck at right now at a high base period.

Another option is to not count reductions in defense R&D spending against increases in commercial R&D spending, and there is a move away from defense-related R&D and toward commercial. To the extent that we should encourage corporations to move toward commercial, we should not count reductions in defense-related R&D against their increases in commercial.

Mr. HOOKER. Madam Chair, I disclaim expertise in the area of tax policy, but I do know that it is difficult to predict the behavioral effects of fundamental philosophical changes in tax policy, and we know that this current system works.

Mr. Ramstad asked for research evidence that indicates the macroeconomic effects of the policy. I have seen lots of research reports.

They certainly exist and are available to your staff, I am sure, so we know that the current program works.

We don't know what the effect would be of a flat tax. I think it would be risky. I would be in favor of extending the current approach.

Chairman JOHNSON. Thank you.

Mr. Olesen.

Mr. OLESEN. Well, as I said in my statement, we favor a nonincremental approach to the tax credit based on the fact that we see the need to build capacity across all of the industrial R&D sectors and to reward those people who have a long-term, steady commitment to R&D in the same fashion that we reward people who incrementally change their R&D. Overall, we believe that a nonincremental system would generate a healthier and more consistent long-term view of R&D, which again focuses on breakthrough kinds of technologies.

Ms. PENSABENE. With respect to the collaborative research credit, I think that the flat tax approach would obviously be better for us, particularly under the EPRI model.

The contributions to EPRI right now are based on gross sales from the utilities, and as I said, it is a 501(c)(3) corporation that does this research. There is only a minimal amount that we can, on a discretionary basis, increase those contributions because of the way the program is structured. A flat tax would be more appropriate with respect to this kind of collaborative research.

Thank you.

Mr. GANDHI. Incremental or flat, I think the key criterion that you want to keep in mind as you redesign a credit is to make sure that you target it properly; that is, we do not want to provide incentive to tax research that would have been done anyway. So if you want to target it and provide incentive for corporations to do more research, then incremental research is a better approach than flat credit.

The second thing you want to keep in mind here is, with all the problems that there are with incremental research, we are not saying that it is not working. All we are saying here is that there are problems that need to be fixed.

Now, as far as the flat credit is concerned, in appearance, it is quite even, uniform, and has an appeal, but it would miss the target, so that is the dilemma that we would have to resolve.

Chairman JOHNSON. Would a flat tax be easier to administer?

Mr. GANDHI. Flat would be easier, no question about that.

Chairman JOHNSON. When the Department issues its regulations, would you get back to us on whether or not they will make it easier to administer?

Mr. GANDHI. Sure.

Chairman JOHNSON. Because if it is easier to administer, it is also more secure for the companies to manage.

Mr. GANDHI. Right. I think the problem in the case of administration is more in terms of what is and what is not innovative research.

Chairman JOHNSON. I understand that, but that is pretty hard for the companies. If you are having a hard time determining that, it is very hard for them, too. I think if we want to encourage more

small and medium-sized business participation, we need to make this thing as clear and simple as we possibly can.

Mr. GANDHI. Yes.

Chairman JOHNSON. In that regard, do any of the panelists have any comments about how we could make this easier or more accessible to small businesses? Because it is true that, for the most part, it is a large business credit.

I am going to yield while you think that over. If you have any comments on that later on, please feel free to offer them. I am going to yield to my colleague, Mr. Matsui.

Mr. MATSUI. Thank you, Madam Chair. I think your question about the flat tax and the incremental approach is a very critical one.

Back in 1981 when we first discussed this issue, and we first talked about the R&D credit, it was so innovative that many were afraid that if we did it on a flat basis it would look like a corporate giveaway; and now perhaps there is some rationale to look at it in terms of—those that have long-term, continuing investments in R&D perhaps should receive it. I don't know if the budgetary problems will allow us to engage in that area, but certainly it is something that I think we should begin to talk about and consider for, if not this reference period, at least in the future.

What I would like is for all five of you, but those of you in the private sector particularly, and perhaps with other panels as well, given the fact that there is a lot of concern about the base period, the 1984–88 base period, perhaps some of you can come up with some alternatives.

I know the industry groups, the coalitions, are working on that now, but perhaps some of your individual companies can also come to us with that kind of information, so that we will have this data as we begin to come up with an alternative.

What I would like to do is to spend my moments asking Dr. Gandhi a couple of questions, because in your GAO report you indicate that the credit itself, in terms of its value, is not really determined. I read the Peat Marwick study—that was November 1994—and they go into a lot of detail and data. They basically say that the earlier studies may not have shown that the credit had real value, No. 1, because there was no study of the interaction between the credit and other provisions of the Internal Revenue Code; and No. 2, companies that began to use the credit in the early and mideighties, it took them time to adjust in terms of some of their long-term investments in research and development. So the positive attributes of the credit in the earlier years and as a result of the earlier studies may not have borne out the positive effect.

The studies in the Peat Marwick document are recent studies. They have studies by Bronwyn Hall, additional studies by Bailey and Lawrence, who were the original people that did these studies, Burger, and a number of others. I take it that your office, you, and your researchers have reviewed some of these studies and the more recent studies that they have done.

From what I understand, they have indicated that there is at least a one-for-one positive advantage in terms of, for each $1 of tax loss there is an additional $1 of R&D spending; and as I indicated in my opening statement, which I got from this document, in

the long term it would produce an additional $1, so you get two for each one; and other studies have shown even more than that.

Do you have any thoughts on that? Do you think it would be appropriate for the GAO—perhaps in the future, you can't do it in the short term necessarily, but perhaps to review some of the more recent data in this area, because it might then help update some of your analysis here, perhaps show that there is a positive value rather than uncertainty as you have in your study?

Mr. GANDHI. Right. Well, let me have two comments on that.

We have looked at some of those studies that you mentioned, sir. It all boils down to what methodology they use, what assumptions they use, and how optimistic their assumptions are. We have been very careful in making sure that we be optimistic about what are the multiplier effects, the spillover effects of the research credit; and even when we use the most optimistic assumptions, we would not be coming out with something like what has been suggested.

The Joint Committee came out yesterday with its own study on that, and we have assumed even more optimistic assumptions than what is contained in the Joint Committee.

But given all that, I do not think that we will be able to come up with that kind of projection in terms of the spillover effects. But nevertheless, we would go back and study a little more and then come back and answer you.

Mr. MATSUI. The only reason I suggest that, perhaps this is a common situation with GAO reports, but there are no references to how you arrive at some of your conclusions in here. As I mentioned, there are a number of—the Eisner study of 19—they don't have a date on here, but the earlier studies indicate there is uncertainty.

But the later studies almost all indicate it does have a positive value, and perhaps some of your research people can look at some of these later ones and then if in fact it requires a change, perhaps you might want to supplement this if it is permanent.

Mr. GANDHI. Yes, we will.

Mr. MATSUI. The only reason I ask this is because these are official documents, and obviously, I believe that they have positive value; a lot of people feel these have positive value. If in fact you can't say that, that is certainly appropriate, but if additional research would be helpful——

Mr. GANDHI. We are not saying, sir, that there is not a positive value here.

Mr. MATSUI. It is uncertain is what you are saying?

Mr. GANDHI. Exactly right. It is difficult to quantify them, difficult to identify all of them and difficult to quantify them, so we will go back and look at those studies one more time.

Mr. MATSUI. If you could look at specifically some of these studies here, I think they would bear it out.

I appreciate that very much. I have no further questions. Thank you.

[The following was subsequently received:]

Recent empirical studies cited in a report produced by KPMG Peat Marwick indicate that, in the long run, each dollar of tax credit generates two additional dollars of R&D spending. Can GAO comment on these new studies and determine if they show that the credit has positive value?

We will be issuing a report later in 1995 on our review of the new studies cited in the KPMG Peat Marwick report. Most of these new studies indicated that the amount of research spending generated by the research tax credit is larger than estimated by earlier studies. However, the authors of some of these studies, themselves, said their results should be used with caution and would benefit from further research. Our forthcoming review addresses the issue of whether these new studies provide evidence that the credit is of positive value and, more specifically, whether each dollar of credit generates an additional two dollars of research spending.

Chairman JOHNSON. Thank you. I have no further questions, either, but thank you for your testimony. I invite your input in the course of the weeks ahead. Thank you.

The next panel will consist of Kevin Conway, the director of Taxes of the United Technologies Corp.; Harry Penner, president and chief executive officer of Neurogen Corp.; Rudolph Penner, managing director of Barents Group, Peat Marwick; Douglas McPherson, director of Tax Affairs of Lockheed Martin Corp., on behalf of the Aerospace Industries Association; Charles Rau, vice president and tax counsel for MCI Communications; and Randall Capps, tax counsel and director of Federal Taxes, EDS, Plano, Tex., on behalf of the Information Technology Association of America.

If we could start right in, I would remind those testifying of the light system and invite your comments.

We will start with Mr. Conway.

STATEMENT OF KEVIN CONWAY, DIRECTOR OF TAXES, UNITED TECHNOLOGIES CORP., HARTFORD, CONN.

Mr. CONWAY. Thank you, Madam Chairman. Madam Chairman and members of the subcommittee, my name is Kevin Conway. I am the director of Taxes for the UTC, United Technologies Corp.

UTC provides a broad range of high technology products and support services for the building systems, automotive and aerospace industries. Our best known products include Pratt & Whitney jet engines, Sikorsky helicopters, Hamilton Standard aerospace systems, Otis elevators, Carrier heating and air conditioning systems, and UT automotive products.

At the end of 1994, UTC ranked 31st among the Fortune 500. We employed 171,000 people, and we were the Nation's 12th largest exporter. We are established in all but six countries of the world, giving us a uniquely global presence.

I appreciate the opportunity to testify today on this important topic. I prepared a statement which I am submitting for the record, and I would like to summarize my comments. I would also like to note that the statements I am submitting have been endorsed and supported by McDonnell Douglas Corp. and Compaq Computer Corp.

I think, Madam Chairman, to focus on some of the key points, during the period 1989–94, UTC spent an average of over $700 million per year on qualified research expenditures, or a total of $4.2 billion in that 6-year period on qualified research expenditures. However, during that period, because of the current structure of the credit, we were unable to claim $1 of research credit. The reason for that, Madam Chairman, is because the credit is not really a credit for increasing research expenditures. It started out that way, but as a result of changes over the years, the structure has been changed, so that in fact during the period 1989–94 we increased our research in certain years, but we were unable to claim the credit.

The reason for that is because, under the current formula, the requirement is that the rate of research spending increases at a greater rate than the historical rate during the period 1984–88. So the notion that the credit as currently structured rewards in-

creased research spending is not accurate. In fact, that is not the case.

The problem that we see with the structure of the current credit is that a company like United Technologies, which spends in excess—an average of $700 million a year—and by the way, I would like to point out that of that average $700 million, $400 million per year, on the average, represented salaries and wages for research jobs in the United States, and that is a key factor that has to be kept in mind.

The problem that we have with the current credit is that it is linked to the historical ratio of research expenditures to sales; and we would submit that rarely, if ever, is there any kind of a logical connection between research expenditures in the current year and sales. In fact, just the opposite is usually true. Sales today are the result of research efforts of the past. Research today is to generate sales in the future.

The problem we have is the linkage under the current structure of sales and research. In fact, if you look at the current structure, one could argue that it is really counterproductive. If your research is successful and your sales go up, your credit will either be reduced or eliminated under the current formula, and the reason for that is that your historical research spending rate is multiplied by the average of your past 4 years' sales. So if your sales increase dramatically, even if you have increased research spending, you will either lose a portion of the credit or all of it; and we don't think that makes any sense.

The other thing to keep in mind is that we should focus not only on the rate of research spending, but the absolute dollars. In today's environment, every dollar is viewed from the standpoint of efficiency and effectiveness, and R&D is no exception. By requiring an increased rate of research spending, the current tax policy is counterproductive to that.

In addition, a company like UTC and broad diversified companies—aerospace, for example, our R&D is going down while our sales remain constant. On the other hand, we have commercial businesses where our sales and our research are going up, and yet we have to average all of this together, and we are not entitled to the credit.

We believe that it is time to restructure the credit. We believe that a nonincremental flat rate credit is more appropriate in today's current economic environment, and we think that a flat rate credit in the range of 3 to 5 percent is absolutely workable.

The Joint Committee report that was released on March 28 in response to the request that you and Congressman Matsui made shows that a 3-percent flat rate credit would be revenue neutral with the current extension. It would also be possible to have a graduated credit up to 5 percent.

In terms of the issue as to—research spending, I would like to point out that a flat rate credit actually does—additional spending because the more dollars you spend in any given year, the more credit you would earn.

What we need to focus on is, we have to get away from this notion of linking sales to historical research, get away from this no-

tion of focusing on incremental dollars. Every $1 of research spending is important.

The point that Congressman Matsui made about other countries' research is critical. We at UTC compete not only with companies from these various jurisdictions, but the United States is competing for research dollars as a tax jurisdiction, so that we have Korea with a flat rate credit, R&D credit; we have Canada, our neighbors to the north; Japan, a major competitor, has a 7-percent nonincremental credit on depreciable expenditures; Spain has a 15- to 30-percent credit on nonincremental expenditures; Australia, Malaysia, and others. So in terms of looking at the need for change, we need not only to look internally, but in a global marketplace where we have to compete for research dollars.

In terms of simplification, I think the arguments there are very compelling. I can tell you that the incremental credit is extremely difficult to administer, even for a large company with a sophisticated tax department. Controversies abound with the IRS not only because of the definition, but because of the application of the base period rules, and also because when the credit is incremental it might cause the IRS to focus on the incremental expenditures. They might not audit all 700 million, just the incremental amount, and that creates some controversy.

So I think the need to go to a flat rate or nonincremental credit is compelling. It is clearly time to look at that; and I think by virtue of the fact that, as we indicated, our credit is comprised substantially of research salaries and wages, we can make a strong argument that that type of a credit will provide an incentive to maintain not only our technological base, but also high technology jobs in the United States.

Thank you for the opportunity to testify. I would be pleased to answer any questions that you may have.

[The prepared statement follows:]

Testimony by Kevin Conway
Subcommittee on Oversight
Committee on Ways & Means
House of Representatives
Proposal for Non-Incremental Research Credit

May 10, 1995

Madam Chairman and members of the Subcommittee on Oversight , my name is Kevin Conway. I am Director of Taxes for United Technologies Corporation ("UTC"). UTC provides a broad range of high-technology products and support services to the building systems, automotive, and aerospace industries. Our best known products include Pratt & Whitney military and commercial aircraft engines, Sikorsky helicopters, Hamilton Standard aerospace systems, Otis elevators and escalators, Carrier heating and air conditioning systems, and United Technologies Automotive components and systems.

At the end of 1994, UTC had 171,200 employees, including 95,200 outside of the United States. UTC is the nation's 12th largest exporter. We are ranked 31st among the Fortune 500 companies and had 1994 sales of $21.2 billion with international revenues accounting for 54 percent of the total. UTC is established in all but six of the world's countries, giving it unique global presence.

Thank you for this opportunity to testify on the subject of the research tax credit. I have a prepared statement I would like to submit for the record and I will summarize my remarks.

Background

This year, Congress will consider extending the research tax credit, which is scheduled to expire June 30, 1995. Since 1981, the Internal Revenue Code has provided a tax credit for increases in expenditures for research conducted in the United States. Congress enacted the credit because of its concern that private spending for research and experimentation had not been adequate, adversely affecting economic growth, productivity gains, and our competitiveness in world markets. It believed that a substantial tax credit for incremental research expenditures would overcome the resistance of many businesses to bear the significant costs of initiating or expanding research programs. It found that while such costs bore characteristics of investment activity, the relationships between the investment in research and the subsequent earnings often were less directly identifiable, so that many businesses were reluctant to allocate scarce investment funds for uncertain rewards. By making the credit incremental, Congress intended to maximize the credit's efficiency by not, to the extent possible, allowing credits for research that would have been undertaken in any event.

Impact of the Current Incremental Research Tax Credit

In its present form, Section 41 of the Internal Revenue Code provides for a credit equal to 20 percent of the excess of a company's qualified research expenses ("QRE") over its "base amount" for that year. The base amount is intended to approximate the amount of research that a company would undertake without the incentive of the credit. The base amount is equal to the company's ratio of QRE to gross receipts for the base period 1984-1988 (its "fixed base percentage"), multiplied by the company's average gross receipts for the four years preceding the year for which the credit is being calculated.

This formula reflects an assumption that a company's average ratio of research expense to sales in the five-year period 1984-1988 is the ratio that will always be appropriate for that company, absent a tax incentive, in every subsequent year. The ratio of research expenses to sales that makes the most sense for a company may vary from year to year, however. For instance, external business conditions may dictate a decrease in the rate of spending on research compared to sales.

Examples of such business conditions follow:

A. An aerospace company might decrease its research spending rate to reflect the expectation of reduced sales in future years resulting from increased international competition and the end of the Cold War.

B. Successful research may result in a rapid, but brief, rise in sales. During the time sales are rising at an unusually high rate, however, the company will not qualify for the credit if its research expenses do not rise at the same rate.

C. Following a period of intensive research spending, a start-up company may enter a "mature" phase when it cannot match the higher rate of spending that was required to get the business going.

D. A company may consolidate and streamline its research operations as part of a larger downsizing that is required for the company to remain competitive, but its cost-saving efforts may cause it to lose the research credit.

The incremental nature of the credit also creates a competitive disadvantage for affiliated groups of companies or a single entity which conducts different businesses. A single credit calculation must be made for such a group, treating all members of the group as a single taxpayer. That means that for a group that includes some companies whose rates of research spending, considered separately, are rising, and also includes other companies whose rates of research spending are falling, the companies with rising rates may not get any research credit because their rising rates must offset the falling rates of other companies in the group. If the companies were not affiliated, the companies with rising rates would be entitled to the credit, while the companies with falling rates would not. If one commonly-held business is an aerospace company that is decreasing its R&D expenditures relative to sales to reflect an expectation of decreased future sales, that policy, appropriate for that business, could prevent an affiliated company, in a different industry, whose rate of research spending is increasing, from receiving any incentive to further increase its spending.

Proposal for a Non-Incremental Credit

Whether or not a company is increasing or decreasing its rate of research spending relative to sales, the incentive of the research credit can be an effective way to induce that company to increase its research expenditures above the amount it would have incurred in the absence of a credit. To make the research credit as effective as possible, Congress should induce the maximum number of businesses to incur research spending, by replacing the current incremental credit with a non-incremental credit with a reduced rate. We believe that a non-incremental credit at a flat rate of 3% or a graduated rate up to 5% would not result in a significant increase in revenue cost. The Joint Committee released a report on March 28, 1995 which indicated that a non-incremental credit with a flat rate of 3% would be revenue neutral with the current incremental credit.

We recognize that giving all taxpayers the option of electing either a reduced-rate non-incremental credit or the current 20% incremental credit would result in a greater revenue loss. Because some companies have reasonably relied on the continuation of the current structure of the credit in planning for future research expenses, however, we propose that companies who have previously elected the incremental credit be given the option of continuing to claim it, with the option of electing a reduced-rate non-incremental credit. Once made, such an election would be binding for all future years.

Benefits of a Non-Incremental Credit

Providing a non-incremental credit would greatly simplify credit calculations for taxpayers, and make the Internal Revenue Service's job of auditing the credit easier. The fact that the amount of the credit depends in part on a taxpayer's gross receipts in a given year undermines the incentive effect of the credit because taxpayers cannot know in advance whether they will qualify for the credit in a given year.

Global Competition

Providing a non-incremental credit would also strengthen the ability of U.S.-based companies to compete with companies based in countries with more generous tax incentives for research. Many other countries offer credits for research expenses, some much more generous than the U.S. incremental tax credit.

Canada, for instance, offers a 20 percent non-incremental credit. The province of Quebec offers an additional 20 percent non-incremental and refundable credit for qualified wages.

Spain has offered a non-incremental credit (in addition to an incremental credit) of 15 percent for non-capital expenses and 30 percent for fixed asset acquisition expenses.

Japan provides a non-incremental credit of 7 percent for the cost of depreciable property used in basic research (subject to a limit of 15 percent of current tax, when combined with the incremental credit).

Korea provides a 5 percent non-incremental credit.

Australia allows a 150 percent deduction for research expenses.

Singapore and Malaysia allow 200 percent deductions for certain non-capital research expenses.

Several countries also offer generous incremental credits, sometimes in addition to a non-incremental credit:

France provides a 50 percent incremental credit (subject to a cap of approximately $8,250,000 per year);

Japan, a 20 percent incremental credit (subject to a cap of 10 percent of current tax) in addition to the 7 percent non-incremental credit;

Korea, a 50 percent incremental credit in addition to the 5 percent non-incremental credit;

Spain offers, in addition to its non-incremental credits, incremental credits of 30 percent for non-capital expenses and 45 percent for fixed asset acquisition expenses.

Conclusion

United Technologies' average QRE have exceeded $700 million per year during the period 1989-1994, but we have not been able to claim any research credit because of its current incremental structure. This structure significantly reduces the overall effectiveness of the research credit as an incentive to incur research expenditures and locate research facilities in this country. A non-incremental credit would encourage more companies, of all sizes and in many different industries, to retain or increase research activities in the U.S. At the same time, it would simplify the structure of the credit substantially, making it easier for more companies to claim the credit. We believe that today it is especially appropriate to consider this change to make the credit more effective because of the increasing international competition faced by many U.S.-based businesses and the increased competition for research investment by different countries. The ultimate benefit would be increased innovation and productivity in the U.S. economy, the strengthening of the U.S. technology base, and the preservation and expansion of job opportunities in this country.

Madam Chairman, I would like to state for the record that the points set forth herein are endorsed and fully supported by McDonnell Douglas Corporation and Compaq Computer Corporation.

United Technologies Corporation, McDonnell Douglas Corporation, and Compaq Computer Corporation appreciate your interest in this important issue, and I would be pleased to answer any questions.

Chairman JOHNSON. Thank you, Mr. Conway, for addressing many of the issues that we have raised to this point. I appreciate that.

Mr. Penner.

STATEMENT OF HARRY H. PENNER, JR., PRESIDENT AND CHIEF EXECUTIVE OFFICER, NEUROGEN CORP., BRANFORD, CONN., ON BEHALF OF THE BIOTECHNOLOGY INDUSTRY ORGANIZATION

Mr. HARRY PENNER. Thank you. Good morning, Madam Chairman, and members of the subcommittee. I am testifying today in support of the R&E credit both on behalf of Neurogen in Branford, Conn., and also the BIO, Biotechnology Industry Organization.

We strongly support H.R. 803, which is legislation introduced by you, Congressman Johnson, and you, Congressman Matsui, to make the R&E credit permanent. We very much appreciate the leadership you both have shown in behalf of America's research-intensive entrepreneurs, and we strongly urge the Congress to enact this legislation before the credit expires on June 30, 1995.

We also support restructuring the credit so it is available as a more effective incentive for most biotechnology companies.

Let me briefly describe Neurogen and its research and development program, then focus on our proposals to restructure the credit. Neurogen is an emerging neuropharmaceuticals company engaged in the design of breakthrough small-molecule drugs to treat a variety of neuropsychiatric disorders.

My company was formed in 1987, went public in 1989, and has grown to more than 80 employees. Some 35 percent of our employees hold doctoral degrees. We have spent more than $35 million since our founding on research. We spent $13 million on research last year. We have no product revenues, and we possibly won't have any until as late as 1999.

The drugs used currently to treat neuropsychiatric disorders are a bit like taking a shotgun to target practice. They hit the neurotransmitter, the receptor in the brain that you want to hit to improve the condition, but they also hit a variety of things around it. These are translatable readily into side effects.

Our technology, which is very novel, enables us to basically take a rifle to the receptor and not only improve the condition but virtually eliminate the possibility of side effects. In the clinic, we have patients taking a nonsedating and nonaddictive anxiolytic drug. We have in human trials a breakthrough treatment for schizophrenia, which is, we believe, going to prove free of side effects so problematic in current medications that as many as 50 percent of schizophrenic patients are not well treated; and we have a drug candidate for eating disorders.

Some 50 to 100 million people in the United States are impacted dramatically by neuropsychiatric disorders. On the one hand, we think ourselves quite special because of what we do, but on the other hand, Neurogen is really quite typical of America's 1,300 biotechnology companies. The biotech industry is the most research-intensive industry in the civilian sector.

The average biotech company spends about $68,000 per employee per year on research. My company spent over $170,000 per em-

ployee on research last year. This is many times the U.S. corporate average of $7,500 per employee. In a 1994 survey by Business Week, 6 of the top 10 firms in the United States in terms of research expenditures per employee were biotech companies.

This industry holds tremendous promise for the improved health and productivity of our citizenry. Already 27 breakthrough products have emerged from biotech R&D. Many more are in clinical trials.

The R&E credit has represented a powerful statement by the Congress in support of our work, in support of high technology in general, and in support of investment in this country's future. It also represents a significant economic incentive to our companies. But almost ironically, biotech companies tend to lose this credit just when they finally manage to bring products to the market and to generate revenue. The problem arises from the unusual economics of our industry—huge research expenditures, long development times, no revenues for many years, followed hopefully by substantial revenues. While the economics of our industry are unusual, I hope you will agree that the biotech industry is exactly the kind of research-intensive industry to which the R&E credit should apply.

We have two proposals to restructure the credit. Let me just mention them briefly. They are explained in more detail in my full statement.

No. 1, we recommend the fixed-base percentage limitations be reduced from 16 to 8 percent. No. 2, we recommend the minimum 50-percent base rule for R&E credits be eliminated. These two proposals will solve the problem with the credit; they will not create any new problems for any other industry. We don't want biotech companies like Neurogen to lose the credit just when they finally manage to bring a product to market and begin to generate revenue.

Let me summarize by stating that failure to provide viable incentives to technological advancement risks U.S. competitiveness, the viability of high technology-based businesses in this country, new jobs which are almost always higher paying—it is a higher paying end of the spectrum—future increases in taxable income, and perhaps even, most importantly, advances in the health and productivity of our citizens.

Thank you very much, and I will be happy to answer any of your questions.

[The prepared statement and attachments follow:]

TESTIMONY OF
HARRY H. PENNER, PRESIDENT AND CEO
NEUROGEN CORPORATION
ON BEHALF OF THE
BIOTECHNOLOGY INDUSTRY ORGANIZATION (BIO)
BEFORE THE OVERSIGHT SUBCOMMITTEE
HOUSE WAYS AND MEANS COMMITTEE
REGARDING THE
RESEARCH AND EXPERIMENTATION
TAX CREDIT
MAY 10, 1995

Madam Chairman and members of the Subcommittee. My name is Harry H. Penner, Jr. and I am President and CEO of Neurogen Corporation of Branford, Connecticut.

I am testifying today regarding the Research and Experimentation Tax Credit (R and E Credit) on behalf of Neurogen and the Biotechnology Industry Organization (BIO).

BIO represents more than 570 biotechnology companies, academic institutions, state biotechnology centers and related organizations in 47 states and more than 20 nations. BIO members are involved in the research and development of health care, agricultural and environmental biotechnology products.

As entrepreneurs must do, let me start with the bottom-line: we support H.R. 803, legislation introduced by Congresswoman Nancy Johnson and Congressman Robert Matsui, to make the R and E Credit permanent. We very much appreciate the leadership they have shown for America's research-intensive entrepreneurs. We urge the Congress to enact this legislation before the Credit expires on June 30, 1995. We also support restructuring the Credit so it is available as an effective incentive for most biotechnology companies.

Furthermore, we recommend that the Congress consider the R and E Credit and the Orphan Drug Tax Credit in tandem. The two Credits are interrelated; both should be made permanent and restructured. We appreciate the support which Congresswoman Johnson and Congressman Matsui have given to making the Orphan Credit permanent and restructuring it and we strongly support H.R. 1560, the bill they have introduced to this end.

Let me first talk about Neurogen and its research and development program, the R and E Credit, the biotechnology industry, and our proposals for restructuring the Credit.

Neurogen and Research and Development

Neurogen is a leading neuropharmaceuticals company engaged in the design and development of breakthrough small molecule psychotherapeutic drugs.

My company was formed in 1989, went public in 1989, and has grown to more than 80 employees, some 35% of whom hold doctoral degrees.

Our company has spent more than $35 million on research since it founding, $13 million last year alone. We have no revenue yet from product sales and do not expect any revenue from product sales until 1999. We have some revenue from other sources. We find that the R and E Credit is a tremendous incentive for investments in research.

Neurogen has integrated its proprietary understanding of neurobiology and molecular biology with cutting edge medicinal chemistry technologies to pioneer the synthesis of new generation of highly receptor specific compounds. This unique series of drug candidates promises improved treatment for a broad range of neuropsychiatric disorders, including anxiety, schizophrenia, epilepsy, dementia, depression, and sleep, eating and stress disorders. More than fifty million persons in the U.S. alone suffer from these disorders and the global market exceeding $12 billion.

Neurogen is pursuing major design and development programs based on the modulation of GABA, dopomine, and neuropeptide receptors. Using computational chemistry, the company is also developing, both for its internal use and for other biotech and pharmaceutical companies, an extensive library of high quality small molecule compounds which are designed to exhibit drug-like characteristics.

One of the molecules we have developed, NGD 91-1, has been shown to be as effective as 10 mg of Valium but with no sedation or alcohol interaction. Additional targets for this compound are dementia and sleep disorders. Another molecule, NGD 94-1, is a highly specific dopomine D4 antagonist for psychosis, or schizophrenia. We have two broad spectrum anti-psychotics, NGD 94-2 and NGD 93-1. Finally, Neurogren's neuropeptide research targets the neuropeptide associated with eating disorders, hypertension, and depression.

We are proud of the research we are doing, its importance for the well being of patients, and positive economic impact we have had on the State of Connecticut.

The R and E Tax Credit

The R and E Credit provides a 20% tax credit for qualifying research and development expenditures. It is an incremental, not a flat rate credit, and the calculation of the credit amount is complex. Not all research is included in calculation of the Credit, in fact, our industry finds that only about half of the research expenses are covered. With a 20% credit for qualified research, and at most 50% of our research covered, the true value of the credit to those companies which can claim it less than 10%.

The Orphan Credit is an alternative to the R&E Credit. Both credits are incremental credits and both are incentives for research. Firms receive only one credit for their research depending on whether it is or is not related to research on cures and therapies for "orphan" diseases or conditions (rare diseases where there is a limited patient population and limited commercial potential). The Orphan Credit is 50% for qualified research. Again, however, at most half of the research expenses are covered, and other sharp limitations apply, so the true value of the credit for the companies which can claim it is less than 25%.

We urge the Subcommittee to consider the two Credits in tandem; they are intimately related and complementary.

Economics of the Biotechnology Industry

The importance of the R and E Credit and our restructuring proposals become immediately apparent when one understands the economics of the biotechnology industry.

The biotechnology industry is one of the most research intensive industries in the civilian manufacturing sector. The average biotechnology company spends $68,000 per employee on research, more than nine times the U.S. corporate average of $7,500. In a 1994 survey by *Business Week*, six of the top ten firms in the U.S. in terms of research expenditures per employee were biotechnology companies, including Biogen ($208,724), Genentech ($117,594), and Genetics Institute ($107,657). Ernst & Young[1] reports that biotechnology companies spent $7 billion on research and development in 1994, up $1.3 billion over 1993.

Bringing a biotech drug product to the market today is both a lengthy and expensive process. From the initial testing of the drug to final approval from the Food and Drug Administration can take 7-12 years, and this process can cost anywhere from $150 to $359 million. Both the length and cost of this process are a tremendous impediment for small biotechnology companies attempting to bring a product to the market.

There are currently 28 biotechnology therapeutics and vaccines on the market. Ernst & Young reports that there are 270 in human clinical development, and over 2,000 in early research stages. As products move into clinical trails, expenses increase. The need for capital for

[1]A fiscal year for Ernst & Young is from July 1 through June 30. Therefore, 1994 indicates July 1, 1993 through June 30, 1994.

biotechnology companies to fund research is increasing right at the time when the industry is coping with a financial crisis.

The biotechnology industry experienced a net loss of $4.1 billion in 1994, and has lost over $11 billion in the last three years. In addition, biotechnology companies raised only $278 million during the first quarter 1995, compared with $762 million in the first quarter of 1994, a 63% decline.

The value of the stock of the publicly traded biotechnology companies has declined precipitously. Since January 1993 the American Stock Exchange (AMEX) biotechnology index has declined by approximately 54% and the index for biotechnology firms traded on the Chicago Board of Options Exchange (CBOE) has declined by 34%.[2] This decline over the past 28 months is due to a variety of factors, including the proposals for controls on prescription drug prices by the Clinton Administration and others during the health care reform debate, disappointments in human clinical trials, and regulatory, tax, patent and litigation issues.

A September 1994 Ernst & Young report finds that biotech companies, on average, have 25 months of capital left at their current burn rates (the rate at which capital is being expended).[3] According to a March 1994 report by Dr. Robert Goldberg of the Gordon Public Policy Center at Brandeis University, 75 percent of biotechnology companies have 2 or fewer years of capital left.[4] Ernst & Young estimates that there are 1,311 companies. If 75% have 2 or fewer years of capital left at their current burn rates, a staggering 983 companies would need to return to the market for more capital.

This capital crunch means that in the struggle to survive, companies must focus on the technology which is closest to the marketplace. They may be interested in other, longer-term projects, but they need revenue to survive. Only when they have revenue can they avoid the need to raise capital from investors.

Impact of the R and E Credit on Biotechnology Research

There can be little doubt that investment in research and development is the answer to keeping the United States economy powerful during this decade and the next century. And, surely, there can be no doubt whatsoever that America's continued economic leadership is indispensable to our national security and freedom. It is the research-driven industries which traditionally have enabled the United States to meet the rapidly intensifying industrial challenge from the rest of the world.

Biotech companies are precisely the type of companies that should be given every incentive to fully explore the technology they have invented. Such companies are beyond the start-up stage, but their revenues and corresponding research budgets are growing rapidly.

These companies are the heroes of the American private sector. If anything, they should be singled out for emulation and given added stimulation. The structure of the current R and E (and Orphan) Credit does the opposite; companies often lose the credit just when they begin to market their first products. Why take away an incentive to keep spending a large portion of revenues on research just when these companies are beginning to be successful? Why force them to reduce their research?

For the biotechnology industry to maintain its leadership in light of increased competition from Japan and Europe, the U.S. industry must compete and win in terms of research breakthroughs, which translates directly into substantial, sustained investment in research and

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[2] These percentage declines are different because these indexes include the stocks of different biotech companies. The most current figures are provided. In addition, the BioCentury 100 (TM) Indicators for a group of publicly traded biotechnology companies has declined by 40% from January 1994 through the first quarter of 1995.

[3] "Biotech 95: Reform, Restructure, and Renewal," Ninth Annual Report on the Biotechnology Industry, Ernst and Young (September 1994).

[4] "Price Controls and the Future of Biotechnology: The Results of a Survey," Dr. Robert Goldberg, Senior Research Fellow, Gordon Public Policy Center, Brandeis University (March 1994).

development. Biotechnology is barely a decade old and already it faces formidable international competition.

The fundamental purpose of the R and E Credit is to provide an incentive to private companies to conduct accelerated research -- research which will maintain our dominant position in critical industries which first emerged in the United States. After eight years of sporadic temporary measures, legislation is needed to offer a permanent tax credit for R&E activities. By its nature, R&E spending requires long-term commitment and planning. The various temporary measures in place since the previous law expired have not provided the stability needed to fully stimulate maximum research and development.

When a permanent R and E Credit is finally enacted, careful thought should be given to making the bill a complete mandate for maintaining America's leadership in vital industries. It is crucial to give the maximum incentive to emerging companies in relative new industries, such as biotechnology. In the case of biotechnology, these R&E investments will translate into dramatically improved health care for generations to come.

The R and E Credit is important to fast-growing R&E-intensive companies. For these emerging, high-growth companies, an incentive to increase investment in research and development makes the difference as to whether research projects are continued or dropped. The biotechnology industry provides a good illustration of this point.

As I have said, it takes ten to twelve years and hundreds of million dollars of R&E investment to successfully develop one new biotechnology drug. Each drug candidate faces numerous scientific and regulatory hurdles, in addition to normal competitive risks, before a biotech company can market a new prescription drug. In addition, new drugs face unprecedented price and competitive pressures due to the new health care environment. This means that a biotechnology company that is successful in commercializing its first new drug cannot sit back and enjoy its success but must continue to invest ever-increasing funds in new R&E to discover new products and grow the business. This is why the Business Week survey listed biotechnology companies as the most research-intensive companies in the country.

The need to be research intensive poses a dilemma to management. It must fund high-risk research over a long period of time while showing a profit to raise equity to fund the required R&E. This requires management to keep marketing expenses, administrative expenses, and non-research costs at an absolute minimum, as well as make difficult and painful decisions on which research projects to fund and which to drop. Given the very lean marketing and administrative levels at which these companies operate, R&E becomes the swing item in the budget. Thus management is constantly forced to drop some of its promising but higher risk projects on diseases like AIDS and breast cancer in order to meet their minimum profit targets. Once the minimum profit level is met, every additional dollar of revenue can be reinvested back in R&E.

The R and E Credit is critical to these companies. An R and E Credit directly reduces the company's tax expense and thereby increases earnings. These earnings can then be reinvested back in R&E while maintaining the company's profit level. The Credit has supported research on diseases like breast cancer, cystic fibrosis, and AIDS that would otherwise not be done. A permanent credit is particularly important to the biotech industry since its research horizons are so long term. Knowing a credit will be there for the next five years allows the companies to include it is in their long-range plan and support the continuation of high-risk projects.

Some argue that the Credit is not needed since the R&E would be done in any event. That is simply not true for the biotechnology and similar emerging research-intensive industries. It very well might make the difference between finding cures for Alzheimer's, AIDS, breast cancer, blindness and similar diseases, or not.

Restructuring the R&E Credit

BIO supports H.R. 803 and supports making the R and E Credit permanent. We also support restructuring the Credit so that most biotechnology companies qualify for it.

The problems our industry has with the current R and E Credit stem largely from the fact that the Credit is a ratio of research expenditures (the numerator) to the firm's gross receipts (the

denominator). Most biotechnology companies have no revenue, no gross receipts, but they have very large research expenditures. So, the numerator is large and the dominator is zero. As, soon as the firm begins to generate receipts, the denominator becomes a positive figure and it grossly distorts the fraction, the ratio, which determines the firm's R and E Credits.

This is a peculiar problem which does not exist for mature firms, or firms which have revenue at all times in their history. It is a unique problem which stems from the economics of our industry -- huge research expenditures, long development times, no revenues for many years, followed hopefully by revenues commensurate with the considerable risk which our investors have taken in funding the research. We believe that the economics of the biotechnology industry should be rewarded, not penalized by the R and E Credit. To avoid penalizing our industry, the Credit must be restructured.

BIO recommends that the R and E Credit be restructure in two ways:

1. Fixed-Base Percentage Limitation: The fixed base percentage limitation be reduced from 16% to 8%. The 16% maximum base percentage is the limitation on qualifying research (as a percentage of sales) which may be used to calculate the R&E Credit. Many biotech companies' research and development-to-sales ratio often exceeds 16% in their early years before the company's R&E results in a product. For these companies the 16% limitation is far too high.

As biotech companies mature and begin to generate sales, their research-to-sales ratio begins to move closer to the average for pharmaceutical companies, about 15%. This pharmaceutical average ratio is itself three times higher than the all industry average, so you can see how high the ratio is for biotech companies.

The problems with the 16% fixed base limitation is compounded by the fact that roughly 50% of a biotech company's financial statement R and D expenses do not qualify for the R&E Credit. Overhead and other costs of R and D do not qualify for the R&E Credit. A 16% limitation, therefore, requires a biotechnology company to invest over 32% of its sales in R and D (per its financial statement) to get any R&E Credit. This is clearly too high. The practical effect is that the most biotech companies will never receive an R&E Credit once they are mature, even if they invest far more revenue in R and D than any other type of company.

To correct the inequity of the current law, the 16% fixed base limitation should be reduced to 8%. This will still require biotech companies to spend at least 16% of sales on R and D in order to qualify for the R&E Credit.

2. Eliminate Minimum 50% Base Rule: The minimum 50% base rule for R&E Credits should be eliminated. It makes no sense that biotech companies which finally do qualify for the R&E Credit should be hit with a cap on their Credit.

The rule actually deters and penalizes significant growth in R&E expenditures by limiting the increment on which a credit can be given once the increment is equal to 50% of the current-year spending (or once the current year spending equals twice the baseline amount). The effect of the limitation is to bring the marginal incentive effect of the credit down from the statutory 20% to only 10%. If a company has a base of $10 million increases its R&E expenditures to $20 million, the full amount of the increase. But, if it increases its R&E expenditures to $30 million, the credit will be available only on the difference between the $30 million and the artificially assigned minimum base of $15 million, not the full increase of $20 million. This is contrary to the whole purpose of the R&E Credit.

It makes no sense to limit the credit for the firms which increase their R&E expenditures the most, but this is what the minimum 50% base rule does.

Robert Eisner, Steven Albert, and Martin Sullivan have analyzed the current R&E Credit and made some recommendations for its reform. Specifically they have suggested certain reforms which would increase the credit's effectiveness. Their first recommendation is to "eliminate the 50 percent floor to the base." They argue that, "While this limitation does not apparently relate to a large

proportion of R and D, its negative incentive effects can be considerable when it comes into play."[5]

Cost-Effectiveness of the Credit to U.S. Competitiveness

The Joint Committee on Taxation has found that making the Credit permanent will cost approximately eight billion dollars over five years. It has not yet provided estimates of the cost of these two restructuring proposals. The Credit is a sound investment for the country in the long-term competitiveness of a critical American industry.

In 1991, the Office of Technology Assessment (OTA) found that Australia, Brazil, Denmark, France, South Korea and Taiwan (Republic of China) all had targeted biotechnology as an enabling technology. Furthermore, in 1984, the OTA identified Japan as the major potential competitor to the United States in biotechnology commercialization.[6]

The OTA identified the manner in which Japan had targeted biotechnology. Its report stated,

> In 1981, the Ministry of International Trade and Industry (MITI) designated biotechnology to be a strategic area of science research, marking the first official pronouncement encouraging the industrial development of biotechnology in Japan. Over the next few years, several ministries undertook programs to fund and support biotechnology.

The Japanese Ministry of Health and Welfare instituted a policy whereby existing drugs would have their prices lowered, while allowing premium prices for innovative or important new drugs, thus forcing companies to be innovative and to seek larger markets.[7]

It is widely recognized that the biotechnology industry can make a substantial contribution to U.S. economic growth and improved quality of life. For example:

* The National Critical Technologies Panel, established in 1989 within the White House Office of Science and Technology Policy by an Act of Congress,[8] calls biotechnology a "national critical technology" that is "essential for the United States to develop to further the long-term national security and economic prosperity of the United States."[9]

* The private sector Council on Competitiveness also calls biotechnology one of several "critical technologies" that will drive U.S. productivity, economic growth, and competitiveness over the next ten years and perhaps over the next century.[10]

* The United States Congress Office of Technology Assessment calls biotechnology "a strategic industry with great potential for heightening U.S. international economic competitiveness." OTA also observed that "the wide-reaching potential applications of biotechnology lie close to the center of many of the world's major problems -- malnutrition, disease, energy availability and cost, and pollution. Biotechnology can change both the way we live and the

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[5] "The Incremental Tax Credit for R and D: Incentive or Disincentive," Robert Eisner, Steven Albert and Martin Sullivan, 37 National Tax Journal No. 2, at 181.

[6] U.S. Congress, Office of Technology Assessment, Biotechnology in a Global Economy 243 (October 1991).

[7] U.S. Congress, Office of Technology Assessment, Biotechnology in a Global Economy 244-245 (October 1991).

[8] National Competitiveness Technology Transfer Act, Pub. L. No. 101-189, 103 Stat. 1352 (42 U.S.C. §6681 et seq.).

[9] White House Office of Science and Technology Policy, Report of the National Critical Technologies Panel 7 (1991).

[10] Council on Competitiveness, Gaining New Ground: Technology Priorities for America's Future 6 (1991).

industrial community of the 21st century."[11]

* The National Academy of Engineering characterizes genetic engineering as one of the ten outstanding engineering achievements in the past quarter century.[12]

The importance of the biotechnology industry to America's competitiveness warrants making the R and E Credit permanent and restructuring it.

Detailed explanations of the fixed base limitation and minimum 50% base rule appear in the appendixes to my testimony.

Conclusion

BIO's first priority is to make the Credit permanent, but restructuring the Credit will ensure that it provides an effective incentive for research by biotechnology companies as they begin to market products, a critical time in the life cycle of a company.

BIO's proposals are for amendments to existing tax incentives, not enactment of new tax incentives. It should not be surprising that the tax code does not recognize the special strengths and needs of entrepreneurs. The tax code is old and relatively inflexible and it reflects the values of our economy as it was in the past. The problems entrepreneurs have with the tax code are similar to the problems they have with agency regulations. In both cases the terms of the law may be well intentioned, but they do not work well in the real world. BIO urges this Subcommittee to look at the tax code much as are other committees which are developing a regulatory relief program and ensure that the tax code does not unintentionally discriminate against entrepreneurs.

Thank you very much. I am ready to answer any questions you might have.

Appendixes:

Explanation of the Fixed-Base Percentage Limitation
Reducing Fixed Base Percentage Limitation from 16% to 8%
Eliminating the 50% Minimum Base Rule

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[11] U.S. Congress, Office of Technology Assessment New Developments in Biotechnology: U.S. Investment in Biotechnology-Special Report 27 (July 1988).

[12] National Academy of Engineering, Engineering and the Advancement of Human Welfare: 10 Outstanding Achievements 1964-1989 2 (1989).

Explanation of the Fixed-Base Percentage Limitation

In restructuring the R&E Credit, BIO recommends that the fixed-base percentage limitation be reduced from 16% to 8%. Following is a detailed explanation of the fixed-base limitation:

The Revenue Reconciliation Act of 1989 made some basic changes to the computation of the credit for research activities as defined in Internal Revenue Code Section 41 for taxable years beginning after 1989. For such taxable years, a 20% tax credit is available for qualified research expenditures paid or incurred in a trade or business before July 1, 1995.

The tax credit is based upon the difference between a company's qualified research expenditures for the current year over a company-specific base amount.

The fixed base percentage is a key component factor in the computation of the credit for research activities.

The **credit for research activities** is currently calculated as the sum of:

1. 20% of the increase in qualified research expenses (QRE) for the current year over a base amount, and

2. 20% of the university basic research payments.

The fixed base percentage is one of two factors used in the calculation of the **base amount.**

Base amount = fixed base percentage x average gross receipts for the four tax years preceding the credit year

The **fixed base percentage** of an existing company (except for start-ups) is a ratio. Assuming a calendar year taxpayer, the ratio would be:

Fixed base percentage = $\frac{\text{the taxpayer's aggregate QRE for 1984-1988}}{\text{aggregate gross receipts of taxpayer for same years}}$

The fixed base percentage (for non start-ups) cannot exceed 16%.

Therefore, if the computed ratio is more than 16%, the fixed base percentage "limitation" is imposed and the base amount will be calculated as 16% times the average annual gross receipts for the four tax years preceding the credit year.

Reducing Fixed Base Percentage Limitation from 16% to 8%

BIO's recommends that the 16% maximum fixed base percentage be reduced to 8% because the 16% maximum prevents certain R&E-intensive firms from receiving any R&E Credit. Following is the explanation of this recommendation.

The R&E Credit is based on increases in the amount of sales reinvested in current year "tax qualified"[1] R&E ("R&E") compared to the average amount of sales reinvested in R&E during the 1984-1988 period ("fixed base amount"). For example, if a company reinvested an average of 2%[2] of sales in tax-qualified R&E during 1984-1988, it will receive an R&E credit only if it invests more than 2% of its sales in current year R&E expenditures.

An R&E-intensive company's R&E-to-sales ratio will ' unsustainably high during its formative years as it invests in R&E in anticipation of future sales. As documented in a June 27, 1994 Business Week article, this is particularly evident in certain industries like biotech, where it can take over twenty years before a company has enough products on the market for its R&E-to-sales ratio to begin normalizing. The article lists six biotech companies as having "book" R&E-to-sales ratios of over 35% in 1993, the highest in the country. These ratios compare to the overall industrial

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1. Industrials invest approximately 2% of their sales in "tax qualified" R&E. (Tax qualified R&E excludes depreciation on R&D buildings and equipment and other expenses. It is approximately 50% of financial statement R&E.)

[2] The industrial average on a "tax qualified" R & E basis.

average of approximately 4%.

As these emerging companies become successful in developing new products, their R&E-to-sales ratios must decline and become closer to industry averages if they are to be profitable over the long term. Unless their fixed base amount is adjusted, however these R&E-intensive companies will not receive any R&E credit in future years since their future R&E-to-sales ratios will be lower than that of the 1984-88 period. This is clearly an unfair result.

To provide partial relief to early stage R&E-intensive companies, current law provides that the "fixed base amount" cannot be greater than 16%. This can be illustrated by the following example:

		1984-1988 (Average)
Sales		$25
R&E Expenses per Financials		$25
Actual % of Book R&E to Sales		100%
"Tax R&E" Eligible for Credit[1]	(A)	$12.50
% of "Tax" R&E to Sales (A/Sales)	(B)	50%
Fixed Base Amount (Lesser of B or 16%)		16%

The 16% limit is based on tax qualified R&E. Since only approximately one-half of book R&E qualifies for the R&E Credit, the 16% limit, therefore, effectively requires companies to invest over 32% of future sales in book R&E to get any credit in the future. This is an impossible base amount to exceed on a long-term basis, since the industry average is only about 4% and as shown in the Business Week survey, no industry averages over 11% on a book basis.

It is recommended that the 16% amount be reduced to 8%. The 8% amount will still require these companies to invest over 16% of sales in book R&E to be eligible for a credit. This level of R&E investment would still be more than most major R&E spenders invest, but at least would be a more reasonable "barrier" to get the credit. This can be illustrated as follows:

	Late Stage Development Company					
	8% Base			16% Base		
Sales		$100			$100	
R&E Expenses per Financials	$26			$26		
Actual % of Book R&E to Sales		26%			26%	
"Tax adjusted R&E"	$ 13	A		$13	A	
% of "Tax" R & E to Sales (A/Sales)	13%	B		13%	B	
Fixed Base Amount[4]		8%	C		16%	C
Qualifying R&E ([B-C] x A)	$5	D		$0	D	
R&E Credit (13%[3] x D)	$0.65	E		$0	E	

Eliminating the 50% Minimum Base Rule

BIO recommends that the 50% minimum base rule be eliminated. Following is a detailed explanation of the 50% minimum base rule:

The "minimum base rule" is a misnomer. The rule actually is an incremental limitation which deters and penalizes significant growth in research expenditures by limiting the increment of which a credit can be given once the increment is equal to fifty percent of current-year spending (or once the current year spending equals twice the baseline amount). the effect of the provision is to bring the marginal incentive effect of the credit down from the statutory twenty percent credit rate to only 10 percent. For example, assume a company with a base of $10 million is contemplating current-year research expenditures of $20-30 million. If the company increases its expenditures to $30 million, the credit will be available only on the difference between the $30 million and the artificially assigned minimum base of $15 million, not on the full increase of $20 million. thus, contrary to the general Congressional intent of stimulation innovation and productivity, the minimum base puts

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[1] Approximately 50% of book R & E qualifies for the credit.

[4] Assumes actual R & E to-sales ratio exceeding 16% in 1984 through 1988 period.

[3] Adjusted for Section 280C (20% vs. 65%).

constraints on those companies that want to make the greatest research efforts.

There is no policy justification for exacerbating the disincentive effect of the minimum base provisions. Many start-up and emerging growth companies would be even more adversely affected by the increased limitation than they are under the present-law rules. These smaller companies typically reinvest a significant portion of their cash in additional research. Taking away R&E Credits from these companies will make it more difficult for them to remain independent and compete in the global marketplace.

Chairman JOHNSON. Thank you for your testimony. We are pleased to have two Connecticut companies so dedicated to leadership through R&D.

Dr. Penner of Barents Group.

STATEMENT OF RUDOLPH G. PENNER, PH.D., MANAGING DIRECTOR, BARENTS GROUP, KPMG PEAT MARWICK, ON BEHALF OF WORKING GROUP ON RESEARCH AND DEVELOPMENT

Mr. RUDOLPH PENNER. Thank you, Madam Chair. I am pleased to appear before the subcommittee this morning on behalf of the Working Group on Research and Development to discuss the importance of making the R&E tax credit permanent before it expires on June 30 of this year.

It is clear that the credit is now generally regarded as an effective means of stimulating domestic R&D spending. Its effectiveness has been demonstrated by several recent independent economic studies. Nevertheless, its current temporary nature and uncertain future status make the credit less effective than if it were a permanent feature of the Tax Code. Ironically, because the Congress has extended the credit every year—albeit, sometimes retroactively—this short-term approach has yielded no reduction in the credit's actual costs; only its benefits have been reduced.

It is generally recognized that any tax incentive that is designed to encourage long-run investments will be more effective where taxpayers have some certainty regarding its continued availability. Perhaps the single most important reason why the credit has not been made permanent to date has nothing to do with the effectiveness of the credit. Rather, the key issue is revenue. A permanent extension of the credit may cost roughly $8 billion over the next 5 years according to the JCT. However, as just noted, assuming that Congress will otherwise continue to temporarily extend the credit on a short-term basis, no net revenue is actually preserved over the long term. Instead, the credit is simply made less efficient. That is, investors do not fully trust that the credit will always be available. As a result, this uncertainty is likely to lead investors to demand higher rates of return on their R&D investments than would be necessary with a permanent credit. Consequently, the periodic short-term extensions themselves impose a cost in the form of reducing the credit's effectiveness.

I would now like to turn very briefly to the key findings in a report we prepared last fall for the Working Group on Research and Development. In brief, these findings are, No. 1, that R&D is important to the Nation's long-run economic growth. In every theory of economic growth that I know, technological change is the source of a major portion of economic growth, and R&D furthers technological change or else companies would not finance it.

No. 2, there is a tendency for the private sector to underinvest in R&D. The rewards to R&D are difficult to protect using patents and other devices. Innovators are often copied. This copying increases the benefit to society but reduces the reward to the innovator. A tax credit can compensate for this failing of the marketplace.

No. 3, R&D growth has been sluggish in recent years and is lagging behind that of some of our major international competitors.

That is made clear, Madam Chair, in my full testimony in figures 1 and 3.

No. 4, evidence collected over the past several years has shown the credit to be quite effective in stimulating increased R&D spending. As has already been noted in these hearings, earlier studies did not show high effectiveness, but they didn't have much data to work with. More recent academic studies show a very high impact.

No. 5, our analysis indicates that the credit can be made more effective if permanently extended, as I have said several times. I think that point is fairly obvious. A credit that businessmen can rely on will have a much greater impact on their decision process than one that is uncertain. That is especially true when their investment decisions are made for the long run and there is already considerable uncertainty about the payoff to R&D. There is no need to add further to the risk with uncertain tax law.

Thank you very much, Madam Chairman.

[The prepared statement follows:]

STATEMENT OF RUDOLPH G. PENNER, PH.D.
MANAGING DIRECTOR, BARENTS GROUP
KPMG PEAT MARWICK
ON BEHALF OF WORKING GROUP ON RESEARCH AND DEVELOPMENT

Good morning, my name is Rudolph Penner. I am a Managing Director at Barents Group LLC, a wholly owned subsidiary of KPMG Peat Marwick LLP. I direct the Firm's practice in performing economic analysis of tax and budgetary policies. I am pleased to appear before the subcommittee this morning on behalf of the Working Group on Research and Development to discuss the importance of making permanent the research and experimentation tax credit before it expires on June 30 of this year. It is clear that the credit is now generally regarded as an effective means of stimulating domestic R&D spending. Its effectiveness has been demonstrated by several recent independent economic studies. Nevertheless, its current temporary nature and uncertain future status make the credit less effective than if it were a permanent feature of the tax code. Ironically, because the Congress has extended the credit every year (albeit sometimes retroactively), this short-term approach has yielded no reduction in the credit's actual costs — only its benefits have been reduced.

It is generally recognized that any tax incentive that is designed to encourage long-run investments will be more effective where taxpayers have some certainty regarding is continued availability. Perhaps the single most important reason why the credit has not been made permanent to date has nothing to do with the effectiveness of the credit. Rather, the key issue is revenue. A permanent extension of the credit may cost roughly $8 billion over the next five fiscal years, according to the Joint Committee on Taxation. However, as just noted, assuming the Congress will otherwise continue to temporarily extend the credit on a short-term basis, no net revenue is actually preserved over the long term. Instead, the credit is simply made less efficient. That is, investors do not fully trust that the credit will always be available. As a result, this uncertainty is likely to lead investors to demand higher rates of return on their R&D investments than would be necessary with a permanent credit. Consequently, the periodic short-term extensions themselves impose a cost in the form of reducing the credit's effectiveness.

I would now like to very briefly discuss a few of the key findings in a report we prepared last fall for the Working Group on Research and Development.[1] In brief, these are:

- R&D is important to the Nation's long-term economic growth.
- There is a tendency for the private sector to under-invest in R&D.
- R&D growth has been sluggish in recent years and is lagging behind that of some of our major international competitors.
- Evidence collected over the past several years has shown the credit to be quite effective in stimulating increased R&D spending.
- Our analysis indicates that the credit can be made more effective if permanently extended.

R&D is Important to Long-Run Economic Growth: Advances in scientific and technical knowledge are important factors explaining improvements in productivity and long-run economic growth. Innovations resulting from successful research and development (R&D) increase productivity, which contributes to increasing wages and standards of living. And,

[1] "Extending the R&E Tax Credit: The Importance of Permanence," Policy Economics Group, KPMG Peat Marwick LLP, November 1994.

numerous economic studies over the past 20 years have documented a strong link between R&D activity and productivity growth.

There is a Tendency to Under-invest in R&D: R&D activity contains a substantial "public-good" element: The benefits of R&D are not fully reflected in private rates of return, which leads to under-investment in research. Social rates of return to R&D investments are typically about twice as high on average as private rates of return. Examples of the private and social rates of return to R&D for five research-intensive industries are given in Table 1. Documented cases of a particular industry or innovation for which the social rate of return to R&D was less than the private rate of return are quite rare. The difference between the two rates of return represents the benefits to innovation that the innovator is unable to capture — typically referred to as a spillover effect: companies can often piggyback on the R&D successes of others by copying their products and production processes. The resulting competition drives down prices, which pushes the private rates of return below the social rates of return. Similarly, cost-reducing innovations in one company or industry can lead to cost reductions in other companies or industries. The existence of such spillovers implies that there is a tendency to under-invest in industrial R&D. This classic public-good problem is the fundamental justification for government intervention in the R&D market: a tax credit for R&D lowers the cost of private R&D investment, and helps to bring such investment up toward the socially desirable level.

The computer and semiconductor industries abound with examples of spillovers. The development by one manufacturer of a faster and more powerful microprocessor quickly leads to imitation by other manufacturers. Similarly, the development by one wordprocessor software company of a handy new feature — such as graphics capabilities or little buttons that automate complicated tasks — quickly leads to imitation by competitors. A similar process occurs in the pharmaceutical industry. This imitation cuts down the time period over which the original innovators can earn a return to their inventions. There are other broader kinds of spillovers, as well. The availability of increasingly inexpensive, powerful and user-friendly computers has had a broad impact on most industries — both high- and low-tech. There are a host of other more mundane innovations that have had a broad impact on society in excess of the returns to their inventors: hybridized fruits and vegetables that reduce demands on the water supply and reduce the need for pesticides; new kinds of thread that reduce the cost of textile manufacturing; new metal alloys that make cars and bicycles lighter and faster; and so on.

Table 1: Estimated Rates of Return to R&D Investments

Industry	Private Rate of Return	Social Rate of Return
Chemicals	13.3%	29.1%
Non-electrical machinery	24.0%	45.0%
Electrical products	22.4%	30.2%
Transportation equipment	11.9%	16.3%
Scientific instruments	16.1%	128.9%

Source: Jeffrey I. Bernstein and M. Ishaq Nadiri, "Interindustry R&D Spillovers, Rates of Return, and Production in High-Tech Industries," *American Economic Review Papers and Proceedings*, May 1988.

U.S. R&D Growth is Sluggish and is Lagging Our Competitors: The U.S. has not been faring well against its main competitors in terms of R&D effort. By virtue of its sheer size, the U.S. still dominates its major competitors in terms of total dollars spent on R&D. However, recent national and international trends in R&D spending show cause for concern about our continued competitiveness in research and development. First, the growth in real U.S. non-defense R&D spending has stagnated in recent years, as shown in Figure 1. The total and non-defense R&D spending growth rates are summarized in Table 2. This R&D slowdown is not due solely to the drop in federal R&D spending: real *industry-funded* R&D has shown slower growth in recent years. This is illustrated in Figure 2, which shows total U.S. R&D spending as a percentage of GDP, broken down by source of funds. Second, the U.S. is falling increasingly

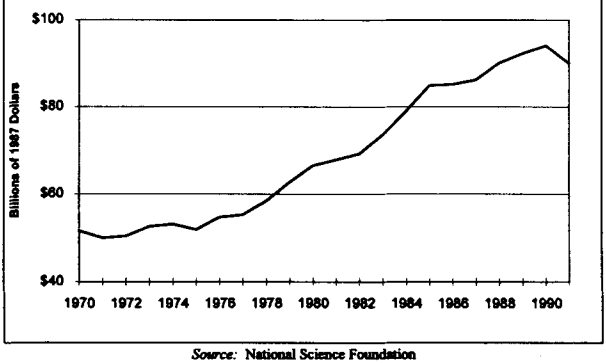
behind both Japan and Germany in terms of non-defense R&D intensity (R&D as a percentage of GDP). This trend is shown in Figure 3. In 1991, the most recent international data that we have, the U.S. spent 1.9 percent of its GDP on non-defense R&D, compared to 2.7 percent for Germany and 3.0 percent for Japan. The U.S. is gradually falling further behind: U.S. R&D intensity has remained flat since 1986, while that of Japan and Germany has continued to rise. The U.S. remains even with France (1.9 percent) and ahead of the UK (1.7), Italy (1.3), and Canada (1.4).

Table 2: Growth Rates of U.S. R&D and GDP, 1970-1991

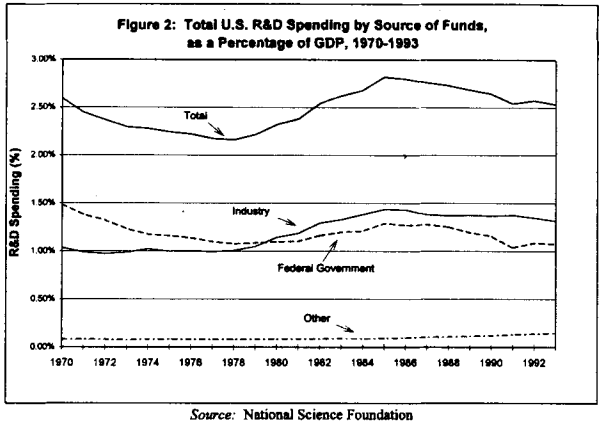
	1970-1980	1981-1990	1981-1985	1986-1990
Total R&D Growth Rate	1.6%	3.9%	6.5%	1.4%
Non-Defense R&D Growth Rate	2.5%	3.5%	4.9%	2.1%
GDP Growth Rate	2.5%	2.6%	2.5%	2.6%

Source: National Science Foundation

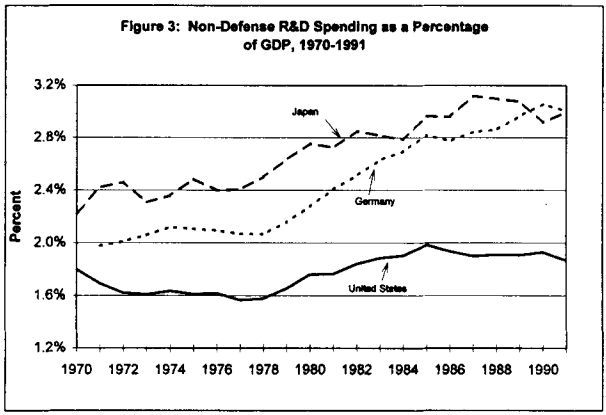
Figure 1: U.S. Constant-Dollar Non-Defense R&D Spending, 1970-1991



Source: National Science Foundation

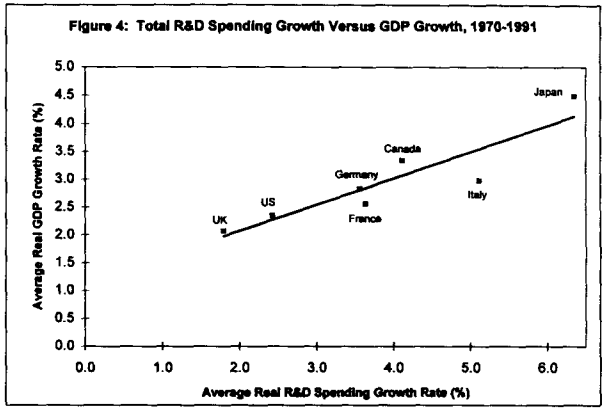


Source: National Science Foundation



Source: National Science Foundation

The importance of R&D to economic growth is illustrated in Figure 4: Across countries, faster growth in national R&D spending is generally associated with faster growth in GDP. While this diagram by itself does not demonstrate causation, several economic studies have concluded that measures of technological innovation (such as aggregate R&D spending) are important factors explaining the differences in economic growth among countries. Certainly, there are many other factors that determine an economy's growth rate, but R&D spending growth seems to be an important part of the mix.



Source: National Science Foundation

The R&E Tax Credit Has Been Quite Effective: The R&E tax credit has been shown to be effective in compensating for the tendency to under-invest in research. Several recent studies have documented the credit's effectiveness. On average, it increases R&D investment by approximately $1 for each $1 of credit in the short run, and by as much as $2 over the longer run. This evidence stands in sharp contrast to the information available in 1989, when the R&E credit underwent its last major review. As summarized in the GAO's 1989 report on the credit, early studies from the first few years of the R&E credit indicated that one dollar of foregone tax revenues only stimulated between 15 and 36 cents of additional research spending. These early studies were rather limited in that they only had available a short time-span of data to examine. They were further limited in that they did not take complete account of the interactions of the credit with other provisions of the corporate tax code. The most recent studies cover the first ten years of the credit's history and are more credible on a technical level. They indicate that the additional research spending stimulated by the credit equals or exceeds its revenue cost.

The R&E Credit Should Be Made Permanent: Making the R&E credit permanent is justified. Permanence is necessary to realize the full potential effectiveness of the R&E credit. Its effectiveness will be further enhanced if the continual uncertainty regarding its future is removed. It is important to realize that R&D funding decisions involve consideration of the long-term costs and benefits of multi-year research projects. Research plans have long horizons and long gestation periods. They are also generally risky investments — all the more so because of their long-term nature. The lack of permanence of the credit adds to the riskiness, because businessmen become more uncertain regarding the after-tax cost of R&E expenditures. Furthermore, firms appear to face longer lags in adjusting their R&D plans compared, for example, to adjusting their investments in physical capital. In the pharmaceutical and biotechnology industries, the duration of the research process itself is compounded by the lengthy process of clinical trials and FDA approval. For highly competitive industries such as computer software, electronics and semiconductors, the effects of long gestation on the R&D decision process may be compounded by relatively short pay-back periods: new products can quickly become obsolete, or must be continually improved through an on-going research program. In addition, there is some evidence in studies of the credit's effectiveness indicating lags of several years in the adjustment of companies to R&D tax incentives. This lag appears mainly to be due to the long-term nature of R&D plans.

If investors in long-term research projects cannot count on the availability of the credit over the lifetime of those investments, they will discount the future benefits that might be realized from the R&E credit and their investment levels will undoubtedly be lower than

otherwise. In fact, we have worked with some large, research-intensive companies who base their R&E investment decision on enacted law only. That is, they do not take the R&E credit into account in their investment decisions for years after the date at which the credit is scheduled to expire. Since such budgeting decisions are often made one- to two-years in advance, they have already reduced their planned R&E spending for 1995 and 1996 based on the enacted expiration of the credit as of June 30, 1995. They are engaging in less R&E spending than would be the case if future credits were assured. The more uncertain companies are about the long-term future of the credit, the smaller is its potential to stimulate increased research now and in the future. Permanence will remove that uncertainty and make the R&E credit more effective.

Chairman JOHNSON. Thank you, Dr. Penner.
Mr. McPherson.

STATEMENT OF DOUGLAS McPHERSON, DIRECTOR OF TAXES, LOCKHEED MARTIN CORP., BETHESDA, MD., ON BEHALF OF AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.

Mr. MCPHERSON. Thank you, Madam Chair. My name is Doug McPherson. I am director of Taxes for Lockheed Martin Corp., which is a Maryland-based multinational, primarily engaged in the space, electronics, aeronautical, and information and technology services business, with sales to the Department of Defense comprising approximately 60 percent of its business. But I am here today representing the Aerospace Industries Association of America, Inc., which in 1994 the industry provided approximately 836,000 U.S. jobs, and certainly R&D is the lifeblood for its continued success. Rather than read the testimony, I would merely like to place it in the record and make a few comments if I could.

Chairman JOHNSON. That is fine. Thank you.

Mr. MCPHERSON. First of all, the current credit does not work for most companies in our industry. Second, making it permanent without other changes will not help most of the companies primarily doing business in the defense arena.

As you may know, the defense budget has been reduced in the last 10 years by 35 percent. More importantly, the procurement section of the defense budget has been reduced by more than 70 percent, and that is where the R&D comes from; and as I understand it, it may be further cut. Consequently, the current incremental credit denies or works against the industry as it downsizes, mergers occur, and we reengineer ourselves to conduct R&D in a more cost-effective manner.

We think the country needs to maintain its technological superiority, as was so clearly shown in the gulf war. If so, and R&D is an important part of that, the system needs to be changed to encourage more R&D, and one way is through the tax system.

As I indicated in my statement, the merger of Lockheed and Martin Marietta, which is now a $23 billion in sales company, was for the purpose of becoming more cost efficient and thus able to spend R&D moneys and other things in a more efficient manner. If you assume a similar amount is spent on R&D by the combined companies as what they spent when they were separate, more R&D will be performed, but the combined company will still not benefit from the credit. So because the incremental credit works against us, or does not help us in any event, we would recommend that taxpayers be permitted to elect a change from the current 20-percent incremental approach to a 5-percent credit on all qualified R&D expenditures; and that election could be made once every 5 years, and once it is made, it is binding for all future years.

In response to some of your previous questions, we certainly think a flat rate credit is the way to go. It benefits us. We also believe it is much simpler to administer. It is easier for the IRS to audit. If it is permanent and a flat rate, it is much easier for our people to predict what benefit it may have in the future so that you can plan, because you don't plan your research and development for only 2 months in advance; it goes out quite a ways.

So we need to have some certainty in that area. If we get that, then it permits companies to perform properly.

So I just want to thank you for the opportunity to appear before you today and welcome your support for this initiative.

[The prepared statement and attachment follow:]

STATEMENT OF DOUGLAS MCPHERSON
ON BEHALF OF AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.

May 10, 1995

Introduction

My name is Douglas McPherson. I am Director of Taxes for Lockheed Martin Corporation, a Maryland-based multinational primarily engaged in the space, electronics, aeronautical, and information and technology services businesses with sales to the Department of Defense comprising approximately sixty (60%) percent of its business. I am here today representing the Aerospace Industries Association of America, Inc. (AIA).

AIA is the non-profit trade association representing the nation's manufacturers of commercial, military and business aircraft, helicopters, aircraft engines, missiles, spacecraft and related components and equipment. With a membership of more than fifty of the nation's largest manufacturers, AIA represents every significant employer in this industry.

The forces of international competition and the end of the Cold War continue to converge on the U.S. aerospace industry. Its members have been and continue to downsize - in 1994 U.S. aerospace sales fell 9 percent, investment in new plant and equipment fell 8.4 percent, employment fell 7.8 percent and industry's trade surplus fell 5.5 percent. In spite of this decline in business fortunes, the aerospace industry still remains an important segment of the U.S. economy. In 1994 it provided 836,000 U.S. jobs and $38.5 billion of exports from the U.S. Research and development (R&D) is the lifeblood for continued success of the U.S. aerospace industry. R&D is what I would like to talk about today.

The R&D Tax Credit and Its Implementation

A U.S. tax credit is currently provided under Section 41 of the Internal Revenue Code for increasing R&D expenditures on an incremental basis. Taxpayers only obtain the credit to the extent their current year's ratio of R&D expenditure to sales exceeds that same ratio for the base period 1984-1988. When calculating the current year's ratio of R&D expenditures to sales, the sales figure that must be used is the average annual gross receipts for the prior four years.

Most aerospace companies are denied the R&D credit because of the base period limitation. This limitation works against the industry in several ways.

1. As the industry downsizes, R&D as a percentage of sales is static or declining.

2. As the industry mergers occur, multiple R&D programs are being combined and economies of scale are reducing total dollars expended.

3. As the industry "re-engineers" itself to become more efficient and competitive, it is also learning to conduct R&D in a more cost effective manner.

4. As sales decline, the statutory formula for computing the ratio of current year R&D expenditures to sales is punitive.

The first three points clearly describe my own company, Lockheed Martin Corporation. The principal purpose of merging Lockheed and Martin Marietta was to create economics of scale and make the combined businesses more efficient and cost-effective. The whole idea in being more efficient is to be able to undertake more R&D. Unfortunately, the tax credit only helps if the combined company is less cost-efficient.

With respect to the fourth point, attached is a chart showing what happens to a business that grows for four years, and then suffers the nine percent annual decline in sales that the aerospace industry is facing. The business maintains its research at a constant percentage of annual sales. Because of the operation of the base period formula, this business would be entitled to an R&D credit while its overall business is growing, but would not get a credit if it suffers business declines.

Need for Change

Right when business needs to keep its R&D going, our tax policy offers no encouragement to maintains its level of R&D spending constant as a percentage of sales, let alone increase spending.

In addition to not stimulating investment in the aerospace industry, incremental credits (1) impede the orderly transition of employment from defense to commercial activities; (2) do not improve the competitiveness of the industry in world markets; and (3) discourage companies from continuing defense R&D without specific government funding.

Accordingly, the credit should provide an incentive to aerospace and other firms that conduct important research but cannot maintain the level of expenditures necessary to obtain benefits under the current incremental credit. Providing an incentive would help such firms and discourage them from moving their R&D activity offshore in search of the credits that at least sixteen other countries provide.

In calling for a change in the R&D credit, we recognize that there are a few companies for whom the present incremental credits works exactly as intended. These companies (including a few AIA members) have growing sales, and growing levels of R&D expenditures. Therefore, we are suggesting that these companies not be penalized by any changes to the existing credit.

Proposal

To accomplish the goals in this paper, AIA proposes that taxpayers should be permitted to elect to change from the current twenty percent incremental approach to a five percent credit on all qualified R&D expenditures once every five years (1995, 2000, 2005, etc.). The election, once made, would be binding for all future years.

Thank you for the opportunity to appear before you today. We appreciate the Committee's support for our industry and would welcome your support for this initiative.

Impact of Base Period and Average Sales Computation on Research Credit

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Sales	$1,000,000	$1,100,000	$1,210,000	$1,331,000	$1,211,210	$1,102,201	$1,003,003	$912,733	$830,587	$755,834
R&D @ 3% Of Sales	$30,000	$33,000	$36,300	$39,930	$36,336	$33,066	$30,090	$27,382	$24,918	$22,675
Average Sales Base	N/A	$1,000,000	$1,050,000	$1,103,333	$1,160,250	$1,213,053	$1,213,603	$1,161,854	$1,057,287	$962,131
Base Period @ 3%	N/A	$30,000	$31,500	$33,100	$34,808	$36,392	$36,408	$34,856	$31,719	$28,864
Increase In R&D	N/A	$3,000	$4,800	$6,830	$1,529	($3,326)	($6,318)	($7,474)	($6,601)	($6,189)
Credit @ 20%	N/A	$600	$960	$1,366	$306	$0	$0	$0	$0	$0

NOTES: First Year Credit Is Competed Under Start-Up Rules
Sales Growth at 10% Until Year 4, When They Begin to Decline at 9%

Chairman JOHNSON. Thank you very much, Mr. McPherson.
Mr. Rau.

STATEMENT OF CHARLES W. RAU, VICE PRESIDENT AND TAX COUNSEL, MCI COMMUNICATIONS CORP.

Mr. RAU. Thank you, Madam Chairman. With your permission, I would like to present only portions of my prepared statement and ask that the entire text be included in the record.

My name is Charles Rau. I am vice president and tax counsel for MCI Communications Corp., headquartered here in Washington, D.C. We have annual revenues in excess of $13 billion; we provide a wide array of consumer and business long distance services, local services, data and video communications, on-line information, electronic mail, and communications software. On behalf of both MCI and myself, I thank you, Madam Chairman, and the other members of the subcommittee for permitting me to appear before you today in support of H.R. 803.

Additionally, I express both the company's and my thanks to both you, Madam Chairman, and Mr. Matsui, for your leadership role in this very important issue.

When President Ronald Reagan signed the original R&E tax credit legislation in 1981, an avowed purpose was to stimulate a higher rate of capital formation. Recently, the House of Representatives passed major capital formation legislation, providing for the NCRS depreciation system, reduction in capital gains taxation, and creating the American dream savings accounts.

H.R. 803 addresses another critical area of capital formation, specifically the development of knowledge capital. The importance of knowledge capital was recently viewed by the Bureau of Economic Analysis of the Department of Commerce when it decided there was a need to measure the investment in our national stock of knowledge capital. The Bureau recognized that R&D expenditures are a form of investment which adds to knowledge and the development of new and improved processes and products. These, in turn, lead to increases in productivity and growth, resulting in more and better jobs and a higher standard of living for our citizens.

At MCI, since the enactment of the R&E credit in 1981, our employment has increased from 1,900 persons to 41,000. We created almost 5,000 new jobs in 1994 alone. Our investment in R&D has grown from a negligible amount in 1981 to $333 million last year. Our R&D staff has grown from none in 1981 to some 3,500 full-time people last year. While we paid a dividend representing approximately 4 percent of our earnings in 1994, in the same year 39 percent of our earnings were reinvested in research and development activities.

In the last 6 years, MCI has moved from the 17th largest international communications company in traffic volume to, now, number three. This dramatic gain is in large part attributable to MCI's cutting edge software development.

Eight years ago, for example, the National Science Foundation was able to transmit information at the rate of two pages per second. MCI has now agreed to provide transport to the National Science Foundation at the rate of two small public libraries per sec-

ond. Today, we handle 40 percent of the Internet traffic being generated by some 30 million users. A user group which, by the way, is increasing at the rate of 160,000 per month. We will soon enable the National Center for Atmospheric Research to provide instantaneous weather information to air controllers throughout the United States. These are but a few examples of the benefits from research and development in the Information Age.

Should the R&E credit be permitted to expire, our additional income tax burden would necessarily have a negative impact on our R&D budget. While I wish I were appearing before this subcommittee under circumstances which would permit me to urge you to make the R&D more generous, such as by eliminating the 50-percent minimum base rule alluded to by a prior panelist, I will not make that suggestion, given the very difficult choices which I appreciate you face in light of our current Federal budget situation.

May I conclude by indicating that I believe H.R. 803 passes the test suggested by the Speaker of the House in supporting the transformation of America from an industrial society into an Information Age society. It is consistent with the President's and Vice President's campaign document, Putting People First, where they call for a permanent extension of the R&E credit to stimulate private investment in civilian R&D. It is a concept also endorsed in the President's economic report this year and has been supported by distinguished members of this subcommittee, its chairman, and the chairman of the full House Committee on Ways and Means.

It is also consistent, I believe, with the House Republican Contract With America which states, in part, "We need to make a conscious national decision that we want to have the highest value-added jobs on the planet with the greatest productivity." Things have to be reexamined from the standpoint of what will make us the most competitive society on the planet, the best trained, and the most entrepreneurial workforce. We respectfully submit that continuation of the existing R&E credit serves our mutual goal of building a highly competitive America.

[The prepared statement follows:]

STATEMENT OF CHARLES W. RAU
VICE PRESIDENT AND TAX COUNSEL
MCI COMMUNICATIONS CORP.

My name is Charles W. Rau. I am Vice President and Tax Counsel of MCI Communications Corporation, headquartered in Washington, D.C. With annual revenue in excess of $13 billion, MCI provides a wide array of consumer and business long-distance services, local services, data and video communications, on-line information, electronic mail, network management services, and communications software.

On behalf of both myself and MCI Communications Corporation, I thank you Madame Chairman and the other members of the Subcommittee for permitting me to appear before you today in support of H.R. 803. Additionally, may I express our thanks to both you, Madam Chairman, and you, Mr. Matsui, for your leadership on this very important issue.

CAPITAL FORMATION

When President Ronald Reagan signed the original R&E tax credit legislation in 1981, an avowed purpose was to "stimulate a higher rate of capital formation." Recently, the House of Representatives passed major capital formation legislation providing for an NCRS depreciation system, a reduction in the tax on capital gains, and the creation of American Dream Savings Accounts. H.R. 803 addresses another critical area of capital formation -- specifically the development of "knowledge capital."

The importance of "knowledge capital" recently resulted in the Bureau of Economic Analysis of the U.S. Department of Commerce deciding there was a need to measure this investment in our national stock of "knowledge capital." The Bureau recognized R&D expenditures as a form of investment which adds to knowledge and to the development of new and improved processes and products. These, in turn, lead to increases in productivity and growth -- resulting in more and better jobs and a higher standard of living for our citizens.

SPILL-OVER BENEFITS

An interesting phenomenon attributable to R&D expenditures is that alluded to in both a study prepared by the Policy Economics Group of KPMG Peat Marwick and this year's Economic Report of the President. They speak of the substantial "spill-over benefits" of technological innovation. These are the benefits captured by others, without compensation to the firm making the investment. The Peat Marwick study found that these "social returns" of R&D investments are, on average, twice as high as the return obtained by the investor. The President's

Economic Report refers to estimated social returns of around 60 percent -- as compared to an average estimated return to the investor of 20 to 30 percent. The President's Report concludes that because the social return exceeds the investor's return, a private market left to its own devices would invest too little. Therefore, the Report suggests government has an important complementary role to play by sponsoring research itself, in subsidizing private sector research, or in doing both. I believe that continuing the existing R&E tax credit, has the advantage of not requiring the government to pick specific winners or losers in providing an R&D incentive. Rather, the tax credit serves as an impartial incentive to reward those who incrementally increase their expenditures on R&D projects.

In a National Bureau of Economic Research paper, Frank Lichtenberg of the Columbia Business School concluded that the rate of return on government funded R&D is less than the return on private investment -- and in some cases may even be negative.

The Peat Marwick study indicates that one dollar of R&E credit stimulates approximately one dollar of additional private R&D spending over the short run and as much as two dollars of additional R&D spending over a longer period. The President's Economic Report found that industry funded R&D investment has been noticeably greater relative to GDP during the 1980's and early 1990's than during the prior two decades. Since 1980, the Report concludes, the private sector has sponsored more R&D than has the federal government. Interestingly, this is the period during which the R&E tax credit was available.

INTERNATIONAL COMPARISONS

The Peat Marwick study concludes that, unfortunately, since 1986 the growth in non-defense R&D spending has slowed both in real dollar terms and as a percentage of GDP ("R&D intensity"). In terms of non-defense R&D intensity, this means that both Japan and Germany have increased their lead over the United States. The Economic Report of the President concluded that as a percentage of GDP, U.S. spending for civilian R&D for 1992, the most recent year for which comparative date was available, stood at 2.1 percent -- compared to 2.4 percent in Germany and 2.8 percent in Japan.

Japan provides a 20 percent tax credit for qualified R&D expenditures in excess of a base amount. Additionally, there is a 7 percent flat credit for qualifying depreciable property used in the research and development of basic technology. (It is interesting to note that a recent

newspaper article indicated that the government of Japan has projected a $585 billion multimedia market in Japan by the year 2000 -- up sharply from the $158 billion market of 1994. The article indicates this will result in the creation of 2 million new jobs.)

Germany provides investment grants and special depreciation allowances for equipment acquired for R&D purposes, in addition to the current deductibility of R&D expenses. Since 1984, Canada has provided a flat rate credit equal to 20 percent of qualified expenditures, with higher rates for smaller companies and for research in certain disadvantaged geographic areas.

MCI

Since the enactment of the R&E credit in 1981, MCI has grown its employment from 1,900 people to 41,000 people -- creating almost 5,000 new jobs in 1994, alone. Our investment in R&D has grown from a negligible amount in 1981 to $333 million in 1994. Our R&D staff has grown from none in 1981 to approximately 3,500 full time R&D professionals presently. And while we paid a dividend representing approximately 4 percent of our earnings in 1994 -- in that same year approximately 39 percent of our earnings was reinvested in research and development activities.

In the last six years, MCI has moved from the 17th largest international communications company in traffic volume to the 3rd. This dramatic gain is in large part attributable to MCI's cutting-edge software development. Eight years ago the National Science Foundation was able to transmit information at the rate of two pages per second. MCI has now agreed to provide transport to the National Science Foundation at the rate of two small public libraries per second. Today, MCI handles 40 percent of the Internet traffic being generated by its 30 million users and will soon enable the National Center for Atmospheric Research to provide instantaneous weather information to air controllers throughout the United States. These are but a few examples of the benefits derived from research and development expenditures in the Information Age.

Should the R&E tax credit be permitted to expire, MCI's additional income tax burden will necessarily have a negative impact on our R&D budget.

AN ENHANCED R&E CREDIT

While I wish I were appearing before the Subcommittee under circumstances which would permit me to urge you to make the R&E credit more advantageous -- such as by eliminating the 50 percent minimum base rule -- I will not make the suggestion given the very difficult choices which I appreciate you face in the light of our current federal budget situation.

CONCLUSION

May I conclude by indicating that I believe H.R. 803 passes the test, suggested by the Speaker, of supporting the transformation of America from an industrial society into an Information Age society. It is also consistent with the President and Vice President's 1992 campaign document, *Putting People First*, wherein they call for the enactment of a permanent extension of the R&E tax credit to stimulate private investment in civilian R&D. This concept is endorsed in this year's *Economic Report of the President* and has been supported by distinguished members of this Subcommittee, its Chairman, and the Chairman of the House Committee on Ways and Means. It is also consistent with the House Republicans' *Contract with America* which states, in part:

> "...we need to make a conscious national decision that we want to have the highest value added jobs on the planet with the greatest productivity...things have to be reexamined from the standpoint of what will make us the most competitive society on the planet...the best trained and most entrepreneurial work force...."

I respectfully submit that continuation of the existing R&E tax credit serves our mutual goal of building a highly competitive America.

Chairman JOHNSON. Thank you very much, Mr. Rau.
Mr. Capps.

STATEMENT OF R. RANDALL CAPPS, FEDERAL TAX DIRECTOR AND ASSISTANT TREASURER, ELECTRONIC DATA SYSTEMS CORP., PLANO, TEX., ON BEHALF OF INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA

Mr. CAPPS. Good morning, Madam Chairwoman and members of the subcommittee. My name is Randy Capps. I am Federal tax director and assistant treasurer for the EDS, Electronic Data Systems Corp. I am here on behalf of my company and the Information Technology Association of America. I appreciate this opportunity to testify on the importance of a permanent research and experimentation tax credit.

EDS is one of the Nation's largest information technology services companies. EDS has operations in more than 40 countries and employs more than 80,000 people. With more than 6,000 direct and affiliated member companies, ITAA is the principal trade association of this Nation's computer software and services industry. It has been estimated that by the year 2000 the information technology industry will account for 14 percent of the world's GDP.

Congress created the credit to encourage the business community to conduct more research and enhance the competitive position of the United States. Despite its temporary nature, the credit has exceeded expectations. Last year, for example, every information technology services contract worldwide with a value of over $100 million was won by a U.S. firm. The R&E credit encourages business to invest in high-risk research by reducing the cost to the point where business can afford to invest scarce human and financial resources.

Ours is a research-intense economy. Total 1991 research spending in the United States was $102 billion, $78 billion of which was spent by the private sector. Among the most research intensive are information technology companies. Generally speaking, these companies spend between 4 and 5 percent of their gross receipts on qualifying R&E. Smaller entrepreneurial firms spend an even higher percentage.

These information technology companies have created thousands of high-paying, high-skilled jobs in this country and have helped U.S. companies and other industries modernize and compete more efficiently. These companies have created a host of new products and services, ranging from home banking to movies on demand to major new health care systems.

Allow me to describe the value of the credit to EDS. Since the credit was enacted in 1981, the number of EDS employees has grown from 11,000 to more than 80,000. The R&E tax credit has facilitated that growth. Our U.S. investment in research and development has grown from $15 million in 1981 to approximately $250 million in 1993. Most of our investment goes toward employee salaries.

Today, EDS is reinvesting roughly 42 percent of its domestic earnings in research and development, and the company's domestic R&D spending increased 45 percent from 1991 to 1993. With the

help of a permanent credit, R&D spending at EDS will continue to increase at a rapid pace.

The Information Age is a global phenomenon. Many of EDS's competitors are headquartered in countries with attractive tax incentives for research. Canada provides a flat rate credit equal to 20 percent of qualified research expenditures, with even higher rates for smaller companies. In France, a 50-percent incremental credit is available. Japan, Germany, and the United Kingdom likewise provide tax incentives for research. These provide our international competitors an advantage over U.S. companies, who must contend with the temporary nature of the U.S. credit.

The R&E credit has been extended six times and allowed to expire twice. Nonetheless, the credit has been successful in stimulating research. Permanent extension would make it more so.

In information technology, development cycles often far exceed the useful commercial life of a product; predictability is essential. At EDS, we educate our business units on the importance of investing in research and using the credit to reduce costs. One of the bases used to evaluate our managers is the economic value they have generated measured on an after-tax basis.

The credit is not as highly valued, however, as it would be if it were made permanent. When the investment tax credit was available, it was always considered in our formal modeling process in the decision as to whether to buy a piece of equipment. Because of its uncertain future, the R&E credit doesn't carry similar weight in determining whether to undertake risky, high-cost research projects which may take up to 200 people and 10 years to complete.

The credit provides a significant incentive for research and experimentation and is important to my industry and the economic growth of the United States. It will provide an even greater incentive if made permanent.

I appreciate the opportunity to appear before you, and I look forward to your questions.

[The prepared statement follows:]

STATEMENT OF R. RANDALL CAPPS
ELECTRONIC DATA SYSTEMS CORP., PLANO, TEX.
ON BEHALF OF INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA

Good morning, Madam Chairwoman and members of the Subcommittee. My name is Randy Capps. I am Federal Tax Director and Assistant Treasurer for Electronic Data Systems Corporation (EDS). I am here today on behalf of my company and on behalf of our industry association, the Information Technology Association of America (ITAA).

I appreciate this opportunity to testify before you on the importance of the research and experimentation tax credit and the need to make it permanent.

EDS is one of the nation's largest information technology services companies, and a leader in applying information technology to meet the needs of businesses and governments worldwide. EDS has operations in more than 40 countries and employs more than 80,000 people.

ITAA is the principal trade association of this nation's computer software and services industry. Its more than 6,000 direct and affiliated member companies provide the computer software, programming, information processing, and systems integration services that make computer hardware and communications systems productive. It has been estimated that by the year 2000 the information technology industry, including consulting and telecommunications services, will account for 14 percent of the world's GDP.

I will focus my comments on the importance of the R&E Credit to my company, to the information technology industry, and the ability of U.S. companies to compete effectively in a global economy. I will also emphasize the critical need to make the Credit permanent.

I. The R&E Credit Is Important to the U.S. Economy Generally and to the U.S. Information Technology Industry In Particular

A. The R&E Credit Effectively Promotes the National Interest

Congress created the Credit for Increasing Research Activity to encourage the business community to conduct more research and enhance the competitive position of the United States in the world marketplace. Despite its temporary nature, including two lapses, the R&E Credit has exceeded expectations in meeting that objective, particularly in the information technology industry. Last year, for example, every information technology services contract -- worldwide -- with a value of over $100 million was won by a U.S. firm. Not only that, but only U.S. companies were finalists for those contracts.

Technological change and scientific advances are important factors contributing to long-term improvements in our productivity and economic growth. These, in turn, result in increased wages and improved living standards for all Americans.

As reported by Dr. Rudolph G. Penner for KPMG Peat Marwick,[1] technological innovation is a "public good," yielding "spill-over" benefits to society, not all of which

[1] Penner, Rudolph G., Smith, Linden C., and Skanderson, David M., Extending the R&E Tax Credit: The Importance of Permanence, Policy Economics Group, KPMG Peat Marwick, (November, 1994).

can be recouped by individual innovators. Indeed, according to Dr. Penner, the societal return from innovation is twice that which accrues to the individual innovator.

Although companies, particularly information technology companies, will always engage in research and experimentation, there are always more worthwhile projects than funds. Thus, promising but risky ventures must often be dropped. The R&E Credit helps overcome the understandable reluctance of business to invest in high-risk research and experimentation by reducing the cost to the point where businesses can afford to invest scarce human and financial resources.

Without the Credit, businesses have inadequate incentives to invest in the kinds of research and experimentation that yield the most social benefit. Quantifying the benefits of the Credit, Dr. Penner reports that "at the margin one dollar of R&E credit stimulates approximately one dollar of additional private R&D spending over the short run, and as much as two dollars of extra R&D over the longer-run."

B. U.S. Information Technology Leadership Is Due in Large Part to the Advances Made Possible by the R&E Credit

Ours is a research-intense economy. Total 1991 research spending in the U.S. was $102.3 billion, $78.2 billion of which was spent by the private sector.[2] Among the most research-intensive are information technology companies, particularly computer and semiconductor manufacturers and companies providing software, systems design, and computer programming services. Generally speaking, these companies spend between 5.2 percent (computers and semiconductors) and 4.3 percent (software, systems design, and computer programming) of their gross receipts on qualifying research and experimentation. Individual companies, particularly smaller, entrepreneurial firms, spend an even higher percentage.

These same information technology companies have created thousands of high-paying, high-skill jobs in this country and have helped U.S. companies in other industries modernize, increase productivity, and compete more efficiently both here and overseas. These information technology companies have also created a host of new products and services, ranging from home banking, to movies-on-demand, to major new health care systems delivering life-saving diagnostics and treatment.

None of this would have been possible without tremendous investments of time and money in research and experimentation. What is true for the information technology industry is true for other industries, such as the chemical, pharmaceutical, and automotive industries.

Without the R&E Tax Credit, U.S. information technology companies will find it much more difficult to invest large amounts of capital in long-range, high-risk programs to create innovative information technology products. Computer programs, for instance,

[2] Id. at p. 15.

typically have very short commercial life cycles before they are overtaken by technological development.

II. The R&E Credit Is Critical to EDS and Other Information Technology Companies

Allow me briefly to put into perspective the importance of the R&E Credit by describing its value to my company, EDS.

The amount of data with which businesses, governments, and individuals must deal is doubling every five years; soon, it will be every four years. EDS' strategy for dealing with this data deluge begins with consulting, whereby we help customers identify their strategic objectives and chart a course to achieve them. The next step is business process re-engineering which aligns people and processes with those objectives. EDS then designs, develops, integrates, and manages information systems to meet customer goals.

Since the Credit was enacted in 1981, the number of EDS employees has grown from 11,000 to more than 80,000. The R&E Tax Credit has facilitated that growth.

Our U.S. domestic investment in research and development[3] has grown from $15 million in 1981 to approximately $250 million in 1993, with most of that investment going toward employee salaries.

Today, EDS is re-investing roughly 42 percent of its domestic earnings in research and development, and the company's domestic R&D spending increased 45 percent from 1991 to 1993. We anticipate that, with the help of a permanent Credit, R&D spending at EDS will continue to increase at a rapid rate for the foreseeable future.

The effect of the Credit on other information technology companies is much the same. Testifying before the Senate Finance Subcommittee on Taxation and Internal Revenue Service Oversight, Cliff Simpson, Vice President, Tax, Export and Audit, for Novell indicated that his company -- a leading developer of operating systems, application software, and network services -- has grown from 14 employees in 1983 to more than 7,900. Approximately 35 percent of Novell's employees are directly involved in R&D.

III. Other Nations Have Recognized the Importance of Research and Experimentation Incentives

Information technology knows no geographic boundaries. The Information Age is a global phenomenon, and many of EDS' direct competitors are headquartered in countries that extend attractive tax incentives for research and experimentation.

With a definition of "research and experimentation" that is generally the same as ours, Canada provides a flat-rate credit equal to 20 percent of qualified research

[3] Note that for federal tax purposes, the term "research and development" is broader than "research and experimentation."

expenditures, with even higher rates for smaller companies. In addition, tax credits may offset up to 75 percent of total corporate tax liability, and certain capital expenses for scientific research are deductible.

In France, another country in which EDS faces stiff competition, a 50 percent incremental credit is available. Similarly, Japan provides a 20 percent tax credit for qualified expenditures exceeding the base amount, up to 10 percent of current tax liability. Germany and the United Kingdom likewise provide tax incentives for research and experimentation.

Designed to invigorate their indigenous technology industries and to attract foreign research initiatives, these tax incentives lower the cost of research and experimentation in these countries. They also provide our international competitors an advantage over U.S. technology companies who must contend with the uncertain, temporary nature of the U.S. R&E Credit.

IV. To Achieve Maximum Effectiveness, the R&E Credit Must Be Made Permanent

Since the R&E Credit was enacted in 1981, it has been extended six times and been allowed to expire twice, with retroactive re-enactment. Despite its uncertain and temporary character, the R&E Tax Credit has been extraordinarily successful in stimulating research and experimentation. Permanent extension, however, would make it more so, generating even higher returns to the nation.

In virtually all areas of technology, but especially in information technology, development cycles often far exceed the useful commercial life of a product. Hence, predictability is essential. Otherwise, expensive, high-risk projects of possibly major societal importance may not be undertaken. Because of the uncertainty of its long-term availability, corporate decision-makers are hesitant to consider the Credit's benefits when evaluating these risky research projects.

At EDS, we educate our business units on the importance of investing in research and the opportunities of using the Credit to reduce costs. One of the bases used to evaluate the contributions of our managers is to examine the economic value they have generated for the company, measured on an after-tax basis. The R&E Credit is thus allocated to the group that generated it, and the managers are recognized within the company for the improved performance represented by the Credit.

The R&E Credit is not as highly valued, however, as it would be were it made permanent. When the Investment Tax Credit was available, it was always considered in our formal modeling process to determine whether to buy a particular piece of equipment. Because of its uncertain future, the R&E Credit does not carry similar weight within the company in determining whether to undertake risky, high-cost research projects which can take up to 200 people and 10 years to complete.

Conclusion

The R&E Credit is important to my company, my industry, and the economic growth of the United States. Despite its uncertain availability, the Credit provides a significant incentive for research and experimentation today, and it will provide an even greater incentive if made permanent.

I appreciate this opportunity to appear before you, and I look forward to your questions. Thank you for your consideration.

Chairman JOHNSON. I thank the panel for your excellent testimony.

Dr. Rudolph Penner, in your testimony, you provide some charts—and a number of you mentioned this—that compare U.S. R&D spending growth versus R&D spending growth in other countries; and as I read your chart and your testimony, Mr. Penner, only the United Kingdom invests less in R&D. France, Italy, Canada, Germany, Japan all invest considerably more. Am I reading that correctly?

Mr. RUDOLPH PENNER. That is correct, yes.

Chairman JOHNSON. Could you elaborate a little bit on how the other countries favor R&D spending and how that compares with our tax credit, and could the panelists look at this question from the point of view of both big companies and small companies?

Mr. RUDOLPH PENNER. I think almost all of the countries on the chart have some sort of tax advantage for R&D investment. As has already been mentioned, the Japanese have a fairly generous credit. I think they have an incremental credit of, I think, 20 percent on certain kinds of expenditures. Their qualified research expenditures are defined more broadly than ours, in that a lot of the capital investment associated with R&E also gets some tax advantage.

The Canadians have a fairly generous approach to the problem. The British do, as well. I think every country recognizes that the free market, left to its own devices, would not produce enough spending on R&E investment and therefore subsidize it one way or another.

Chairman JOHNSON. Thank you. Does anyone else want to comment on foreign versus American subsidies?

Mr. CONWAY. Yes, Madam Chairman, I would just like to reemphasize that I think part of the issue—there are really two questions. In looking at the flat credit, as I testified, I think it does provide an incentive to do more research because the more dollars you spend, the greater credit you will get. There is no fixed determination year by year that a company will increase its absolute amount; but very importantly, when looking at global competition, there is a second question we now have to answer, and that is where the research will be done. From the standpoint of a tax director, doing a tax analysis in terms of looking at the tax efficiency of R&D dollars, if we look at a jurisdiction like Canada or Japan, with a flat rate credit, it is clear that in our case, for example, the research dollars spent there would be more efficient from a tax standpoint.

So we think it is time for the United States to look at these other systems—not that we have to follow them, but just to be competitive, and it makes sense now to look at this from the standpoint of restructuring our own credit to take that into account.

Chairman JOHNSON. That is exactly the point of my question, Mr. Conway. What is it about their tax law that would make your research dollar more efficient in other countries?

Mr. CONWAY. Well, I think the simple answer is that if we spend a dollar here—and as I indicated, from 1989 to 1994, we spent over $4 billion in qualified research expenditures——

Chairman JOHNSON. OK. Is the issue incremental versus flat, because if we change ours to flat does that make us competitive with them?

Mr. CONWAY. If we change ours to flat and we assume we have a choice that we can do the research in either place, we can be more tax efficient, we can reduce our Canadian taxes or our taxes in Japan by getting a flat rate credit; and that will increase our profits and make the return on research—allow us to invest more in research. So because we have a tax liability in these countries and we do business there, having a flat rate credit makes it more attractive.

I think also these other countries have simpler tax systems that can be understood. I think that is something that is unique to the U.S. system; it is very complicated and complex. I think that is also probably a factor in why they have nonincremental credits.

They also have, in some cases, dual systems. They have both.

Chairman JOHNSON. So what you are saying is that in your opinion, if we went to a flat tax, even if it were low, we would be more competitive than we are now with other countries?

Mr. CONWAY. Yes, I don't think there is any question about that.

Chairman JOHNSON. OK, other comments?

Mr. Rau.

Mr. RAU. I just wanted to say that at MCI, all of our research and development has been done, to date, in the United States under the current incremental credit.

Chairman JOHNSON. Mr. Capps.

Mr. CAPPS. Yes, at EDS, we are very aware of the different incentives for research around the world. One concern we would have is that if we didn't have extension of the research credit here, we would be at a competitive disadvantage vis-a-vis our competition.

There are foreign companies that we are in dog fights with globally, that are headquartered in these countries, that have attractive tax benefits for research. If they are getting benefits and we are not, it is going to give them a better cost structure from the bottom line than we will have.

I would like to briefly address the issue you raised earlier of the current incremental credit versus a flat credit. The current provision, as Dr. Penner indicated, seems to be working well from a macroeconomic standpoint. We find that it is working very well for the information technology industry. We do recognize that there are some pockets of legitimate concern, though, and you have already heard some of those this morning.

We would recommend, as Mr. McPherson suggested, that to the extent we try to address those concerns, we come up with elective alternatives that would take care of some of those problems, and we don't tinker with the core incremental nature of the credit, which we have already seen is working and working well.

We would be concerned if we went to a flat credit across the board and didn't have it elective. Our concern would be that you would probably have to make it so low that it wouldn't have the incentive feature that we are seeing now with the current incremental rate. I don't know just what that percentage would be.

Chairman JOHNSON. Mr. Capps, have you calculated that out in regard to your company? What would be the benefits of, say, a 5-percent flat credit? What would be your savings in terms of administration? Over time, what would be the benefits for you? I would appreciate it if you would do that.

One of the things that has concerned this subcommittee, at least rhetorically, for a number of years has been the complexity of the code; and while we have made many contributions to increase that complexity—including in the last bill that we passed—nonetheless, we are concerned about it. I appreciate Mr. Conway's point that other countries have simpler systems and that makes them more understandable, more predictable, and more manageable, and that, in and of itself, has a certain economic effect.

I would like to see if there are going to be real losers by going to a flat tax. We need to know that. If it is just anxiety about change, we need to decide whether it is worth it, but it is very hard for me to see how we restructure base years, how we restructure the rather complex nature of our current incremental system in a way that would either make it available to small companies or make it functional for many of our big companies. For example, just cutting national defense spending destroys their eligibility under this because it knocks out all defense research.

We are holding these hearings at exactly the right time because the old law is really not strong enough or thoughtful enough to meet the future. We have to think either how to change the current formula or how to just simply go to a flat, incremental tax credit. I think those of you who worry about that need to calculate it out. Those of you who have expressed anxiety about it on preceding panels, or will in later panels, need to decide whether this is just an anxiety attack about Congress and change, which would be perfectly logical—I would have anxiety attacks if I were you, if I knew that we might actually make a change that would affect you.

But I do think we have to look at the long term; and certainly our R&D investment doesn't compare favorably and our law doesn't compare favorably, and so I really urge you to look at those things from a very self-centered point of view in your industry and let us know.

[The following was subsequently received:]

EDS

May 25, 1995

The Honorable Nancy L. Johnson
U. S. House of Representatives
Room 343
Cannon House Office Building
Washington, D.C. 20515

Madam Chairwoman:

I would like to respond, for the record, to two questions you asked during my testimony before the Subcommittee on Oversight, of the Committee on Ways and Means, on May 10, 1995. You inquired as to (i) what effect a flat Research and Experimentation (R&E) Tax Credit would have on EDS and (ii) what our administrative savings would be if a change were made from an incremental to a flat credit.

EDS' R&E Credit has been averaging around 10 percent, if converted to a flat rate. This would mean a change in law from the current incremental credit to a flat credit of 5 percent would reduce our incentive by one half. In fact, anything less than a 10 percent flat credit would result in a lower incentive than we experience under current law.

The administrative savings for EDS of a change from an incremental to a flat credit would be minimal. We spend more than 2,000 hours each year identifying and documenting projects that qualify for the R&E Credit and making the required calculations. The information necessary for the incremental calculation is generally readily available, and the calculation takes a negligible amount of time. There is a requirement, however, that taxpayers who have acquired or disposed of businesses adjust their base period for those acquisitions and dispositions to keep it consistent with the current period. Since EDS has acquired a significant number of businesses, it spends about 40 hours per year making these base period adjustments. Thus, I would estimate that our administrative burden would drop by less than 2 percent (40/2,000+) if we migrated to a flat based credit. For most companies, who are not making acquisitions and dispositions, I would expect the administrative savings to be even less.

I hope the above information helps you and the rest of the Subcommittee in your analysis. I would again like to commend you for your leadership on this issue, which is so important to EDS, the information technology industry, and the country. If you have additional questions or I can be of further assistance, please feel free to phone me at (214) 605-1238. I am enclosing a copy of this letter with the corrected transcript of my testimony that I am returning to the Subcommittee.

Sincerely yours,

R. Randall Capps

RRC:ch

Chairman JOHNSON. Mr. Matsui.

Mr. MATSUI. Thank you, Madam Chair. I am starting to think that a critical issue in this debate—and I think this issue has been kind of pending over the years, but we have never been able to really deal with it because of the revenue issue—is the issue of whether you just give a flat credit or you give an incremental credit. I noticed Ken Kaley, who has been working on this for 14 years now, sitting here and probably wondering how he is going to keep the coalition together.

I do see this, though, as a dollar-and-cents issue. You have mature companies who rightfully say that they have not had the advantage of an incremental credit—and rightfully so. Their dollars spent annually are still the same as any other company, and it has the same positive impact on a long-term/short-term GDP, the future of our country.

At the same time, I think, originally we decided to go with an incremental approach not only because of revenue issues and the fear that this would be seen as a giveaway at that time in 1981, but also because we wanted to encourage additional R&D investments by, basically, emerging companies. We have that now.

We have biotech companies, obviously communication companies; I want to ask Mr. Rau what his position is because MCI is obviously expanding rapidly. So we have this problem.

The problem, of course, with Mr. McPherson's approach—and I am not criticizing you or your approach—is you give a choice that you have a revenue problem because everybody will want to keep what they have, and then obviously you have to then provide the 3 percent, or whatever credit you give, for those that—for example, United Technologies; and somehow we have to deal with that.

You don't want to do it in a way that you reduce the amount so it is valueless to everybody because it is so minimal. We have to come to grips with it. Perhaps we want to expand the credit, spend a little bit more money on it, but I don't know if our budget will allow us to really do that.

But, Mr. Rau, could you give me your thoughts on this? MCI obviously, for 15 years now, has been a growth company, you are high technology. What would be most beneficial to you in terms of your situation at this time?

Mr. RAU. In our current situation under the incremental credit, we are very pleased with the incremental credit, the way it works, because of our rapid growth in R&D spending. To the extent additional funds are available and the Congress would want to use them to expand the credit in some elective manner, certainly we would have no objection to it. There are, of course, a variety of theories on how you might do that.

You might change the base versus a flat rate credit, and so forth, but because of our situation, I think probably somewhat similar to EDS and other information-type companies, the growth is so rapid and we put so much money into R&D and we are not a downsizing industry, we are satisfied where we are.

Mr. MATSUI. Dr. Penner, you represent generally the coalition. What are your thoughts on this between the two?

Mr. RUDOLPH PENNER. As you implied, Mr. Matsui, the coalition has not taken a position on the issue.

My personal view is that there is a difficult tradeoff here. If you do a flat tax, my understanding is that, to be revenue neutral, you would have to have a rate as low as about 3 percent, and very obviously that does not provide a very big incentive.

On the other hand, the way the current incremental credit works, it is very erratic. It is worth 13 cents on the dollar for some firms, 6.5 cents for others, nothing for many others.

I have a feeling—my own judgment is that the current approach stimulates more dollars of R&E expenditure per dollar of revenue loss. However, they are not necessarily the most efficient dollars because of the erratic nature of the credit. I think that you would probably get less R&E with a flat rate, but it would be somewhat more efficient; and judging the tradeoff between those, I think, is very difficult.

Mr. MATSUI. I appreciate that. I think that is probably a good analysis of it, because there are a lot of emerging companies that are probably going to fail, and so they are investing. Is that kind of your sense of it, they are investing R&E that may not have any value in the long term, or how do you distinguish between good R&E and not so good R&E?

Mr. RUDOLPH PENNER. Well, ultimately, you would like to measure the rate of return to it from the point of view of society as a whole, which is its impact on economic growth; and I am just making a judgment here that when you have a very erratic subsidy that provides very different kinds of subsidies to individual companies, depending on their circumstances, it is not a level playingfield, and therefore you don't get the most efficient package of R&E that you could otherwise.

Mr. MATSUI. Could I ask Mr. McPherson—you are Lockheed; is that right?

Mr. MCPHERSON. Yes.

Mr. MATSUI. Lockheed Martin.

What is your sense of this? You are a mature company. You obviously also have extensive R&E, given your international needs and the need to keep modernization going. What are your thoughts?

Mr. MCPHERSON. Well, as I indicated before, obviously, we haven't received any benefit out of the credit—most of us in the industry—probably since 1989; so, to say what is going to happen if we do get a flat rate credit, it can't do anything but help.

I don't have any macro, studies or anything on what the effect would be, but from a tax standpoint, we haven't played any role in R&D for so long that it is hard to envision. All I can say is, if we do have a flat rate credit where we get some benefit out of it, obviously we will play a role; and that will certainly, I would think, play an important part in how much more R&D is expended.

Mr. MATSUI. In other words, you think it would create an incentive effect?

Mr. MCPHERSON. I think it would help, yes.

Mr. MATSUI. Dr. Penner, I don't want to quote you because you are part of this coalition, but I know GAO would probably feel it is maybe not as great. This is something that I think all of us will have to really grapple with. I really appreciate the fact that you are all very open and candid about this, because obviously we want to work together. We want to make sure we keep the R&E; we

don't want to let this thing just deteriorate into a huge fight between industries because the long-term impact is too important to us.

I look forward to working with you, and certainly the Chair here, on this issue.

Thank you.

Chairman JOHNSON. In fact, my colleague, Mr. Matsui, has gone right to the heart of the matter that we think is very important. Erratic tax policy that affects one company one way and another company another way, in the same industry or in different industries, is not healthy, and fundamentally this does not grow a strong economy.

On the other hand, I appreciate that a 3-percent flat credit for some of you who are way out there and are in sectors where, if you are not way out there, you are not going to be there at all, does matter; and Dr. Penner, since you are really closer to a variety of these companies and are aware of these tensions, I would urge you to begin helping us look at what are the various options in a flat credit? Is there some way of recognizing certain industries in which a much higher investment of R&D is, in a sense, equivalent to a much lower investment in other segments, that the need is so much greater?

I don't know if there is any way of varying the flat credit so you have really a progressive flat credit or a variable flat credit, but it would be a lot easier, it would be a lot simpler, it would be far more equitable. I think we can't not recognize the difference in an R&D demand from one segment to another.

On the other hand, I am more concerned than I was in the beginning of this hearing, because frankly I didn't realize quite how erratic the impact of this was. I did know that some of our big companies didn't benefit at all, and the little companies were having trouble. But I think we owe it to ourselves to look at both simplicity and equity, because in the long run if we make this permanent, we are talking about tax policy for the next decade, two decades, and we ought to think about economic growth across the spectrum. So I do urge you to really give that some thought and get back to us with your best shots.

Mr. RUDOLPH PENNER. We would be very pleased to, Madam Chair.

I do think it has to be said that whatever the faults of the current approach, it is much better than the moving base that we used to have, which had some really perverse incentives in it. So there has been some improvement.

I think any incremental approach has some complexity and inefficiency involved.

Chairman JOHNSON. We are finding the same thing with retroactivity, too, and refundability.

Let me recognize Mr. Portman from Ohio.

Mr. PORTMAN. I thank the Chairwoman.

I wasn't able to be here for all your testimony. I was here earlier at the hearing and have just a continuation of the same line of questioning.

We are in this bind—Dr. Penner knows it well—on the budget; we need to figure out a way to make the Federal dollar stretch fur-

ther. It seems to me that in many of these incentives we have in our system, we need to be sure that the activity wouldn't take place otherwise.

In particular with regard to R&E, it is very important for us to figure out a way to be sure that the research and development wouldn't otherwise occur. That is why I like the incremental idea, because it seems conceptually consistent with that, that it would encourage companies to undertake additional R&E because of the Federal incentive; but I am hearing now both from reading some of your testimony and hearing from Mr. Rau and others that—and from Mr. McPherson, of course—that a flat approach might be preferable.

I guess my question for all of you, and maybe Dr. Penner, since you have already addressed this more generally, is if we do stay with an incremental-type approach, is there something that you would recommend in addition to what has already been suggested for the base period to make it more sensible?

I would agree with the Chairwoman that any time you get into the incremental approach there will be some complexity, but do you have any specific suggestions as to how the base period could be restructured? Perhaps you could start, Dr. Penner, but others chime in.

Mr. RUDOLPH PENNER. I don't, sir. I think that any change that you contemplate is going to hurt some companies and help others in the base period. That is just in the nature of how it works.

Mr. PORTMAN. But from your earlier responses, it seems to me that you do acknowledge that having a flat credit might not be consistent—and I don't mean to put words in your mouth—might not be consistent with the approach of encouraging R&E where it is not otherwise going to take place? What do you see as a middle ground between the existing system, that seems to be unfair to certain industries or businesses, and a flat rate?

Mr. RUDOLPH PENNER. As a budget person, I always think of these in a revenue-neutral kind of way, which makes it very difficult, but——

Mr. PORTMAN. Which we appreciate these days. In fact if you can think of it in terms of not just budget neutral, but a budget savings, why that would be more appreciated.

Mr. RUDOLPH PENNER. The budget neutrality requirement limits you, but I do think you gain more flexibility obviously with some sort of elective approaches and giving the companies somewhat more choice. That is a middle ground.

Mr. PORTMAN. More flexibility. Mr. Rau.

Mr. RAU. Just to clarify my earlier statement, it is that we do support an incremental credit. It has worked well for our company, and therefore all of our R&D today is done in the United States.

Mr. PORTMAN. I appreciate that. Mr. McPherson, any thoughts?

Mr. MCPHERSON. Well, I really haven't given any thought to alternatives because even if you had a sliding base scale, as our industry goes down, we still wouldn't be able to benefit from it, so it almost makes——

Mr. PORTMAN. Your industry would be unlikely to be able to take advantage of the credit with anything other than a flat rate?

Mr. MCPHERSON. Essentially.

Mr. PORTMAN. Any other thoughts?

Mr. Capps.

Mr. CAPPS. Again, the information technology industry is growing rapidly, and the current incremental credit has worked well for us. We think that from an economic standpoint, it is working, it is a good incentive, and from a macro standpoint. So we would suggest that we don't tinker with the core incremental features that we have now, but maybe provide for some elective alternatives to address some of the legitimate concerns that we have heard this morning.

Mr. PORTMAN. Thank you very much.

Mr. Conway.

Mr. CONWAY. Mr. Portman, I would just like to add, in terms of the base period, we have looked at that as an alternative, and from our standpoint, we think that for a lot of companies that is not an appropriate remedy here. The reason for that is, as long as we have a base period, you still have uncertainty. If sales increase dramatically because your R&D is successful, and you apply that base period percentage to those sales, you can lose the credit; and in terms of—we recognize also the importance of providing an incentive to do additional R&D. We recognize that that is an important policy.

I just point out that a flat rate credit can be—it could be progressive, and it certainly will provide incentive to do more in 1 year. I think those are two points that ought to be taken into account. Even a flat rate credit has incremental features or can have incremental features.

Mr. PORTMAN. To provide incentive for additional research and therefore additional credit. Thank you very much.

Thank you, gentlemen.

Chairman JOHNSON. Mr. Hancock.

Mr. HANCOCK. One of the things you need to try and do to handle all the problems, is try to figure out what Internal Revenue is going to do from year to year. I think everybody is curious about that.

I would like to see a 5-year moratorium on a lot of these rules and regulations, but I think on the question of renewal and extending the present R&D tax credit, I think the basic question is, is that going to happen? The other question is, should it be incremental or should it be a flat rate?

It would appear to me—it may have been said in early testimony, but it would appear to me, from an industry standpoint, that the most important thing would be to get a permanent extension.

Mr. RUDOLPH PENNER. I think there is no doubt about that. That is the first priority.

Mr. HANCOCK. It can work whether it is incremental or whether it is flat, but the permanent extension is the first priority. Let me ask this question then.

Would the industry consider or would they prefer even a lesser rate to get a permanent extension than the current formulas that are set up? In other words, would it be worth a little bit of a tradeoff to get a permanent extension so you could make long-term plans, even though the credit actually amounted to less money? I am not talking—20 percent less, you know.

Mr. MCPHERSON. Speaking on behalf of myself, and possibly on behalf of AIA, we recognize the problems that you people have and we would like to be flexible and work with you in that regard. Permanency is essential. Whether the rate is exactly as we ask for is another thing. I think that we should be flexible and work with you on that.

Mr. HANCOCK. I think you understand, and I support the idea of a permanent extension because I am a businessman. It drives me up the wall trying to figure out what is going to happen up here. I think the more we can get out of having to come back to Congress every year to decide whether something that you are planning on for the next 5 years is covered by the credit, and you don't know whether you can plan on it or not—it would appear to me that that would be a real detriment to even study certain programs. So I would like to hear from you all, at least some suggestions possibly for the subcommittee.

We might be able to make a more accurate recommendation that we go for a permanent extension on the basis that industry is willing to look at it, maybe the figures we are working with now would be less, in return for a permanent extension. I would appreciate any information you might be able to furnish us on that.

Mr. HARRY PENNER. I would comment that I think that there is an overall policy aspect to this credit and that is to incent high technology spending. Certainly that is the constituency I represent.

It is sort of a tradeoff we are talking about. Permanency in return for reduced credit may not necessarily get you where you want to be in terms of creating the proper incentives to maintain U.S. competitiveness in high technology, high investment industries. I think you have to consider that.

Mr. HANCOCK. I understand, but let me look at it this way. Is there a possibility, though, that there would be more overall investment in research and development from the competitive standpoint? Are there companies or businesses that are saying, well, because we don't know whether we are going to get it next year and the next year, then we are not going to do it at all? To me, that would be the key.

If I was a chief executive officer of a company, I would say, wait 1 minute, we are talking about spending $10 million in research and development partially because we are going to get a tax credit, but we can't afford to continue the program unless the Congress renews it. That is a awkward position to put any board of directors in.

Mr. HARRY PENNER. I can't deny that, but on the other hand I wonder if a one-size-fits-all policy is the correct one.

Mr. RUDOLPH PENNER. I would comment that it is right.

First of all, the uncertainty reduces the amount of R&E that you get from this credit. Logically, of course, there is some lower credit with permanency that would get you the same amount. However, I do think that the recent evidence is extremely persuasive that this is one of the most effective tax expenditures in the system in terms of bang for the buck.

So while I can't comment on specific other—I haven't done the kind of study of other kinds of tax expenditures that we have done of the R&E credit, I would suggest that when it comes to the mat-

ter of financing permanence, it would be a good idea to look down the whole list to see if there is something less effective that could be limited in order to finance permanence for this.

Mr. HANCOCK. Thank you.

Thank you, Madam Chairman.

Chairman JOHNSON. Mr. Johnson.

Mr. JOHNSON. Thank you, Madam Chairman. I think we have pretty well discussed this, and I don't want to prolong it. I would like to note that MCI and EDS are here at my suggestion, and those two companies, and I am sure the others would too, are ready to support us in any effort to devise a better tax system. Mr. Capps, in particular, is in our district in Plano, and in addition to being with EDS, was with Texas Instruments and also spent 5 years with the IRS, so I think he knows what he is talking about.

Thank you for being here.

Chairman JOHNSON. Mr. Matsui.

Mr. MATSUI. Thank you.

Mr. Penner, I didn't ask you your opinion on this difference between the incremental approach versus the flat credit approach because you represent the biotech industries. Could you tell me what your thoughts are on this and——

Mr. HARRY PENNER. It is an analysis that we personally haven't conducted at our company, but there is much more appeal to the incremental approach for our industry. We believe there are some improvements that can be made in the incremental credit, and we have suggested those and put them in the record regarding the fixed base percentage and the 50-percent base rate, and so forth. Overall, the incremental approach is one we like.

[The following was subsequently received:]

WHY AN INCREMENTAL CREDIT FOR R&E EXPENDITURES?

1) INCENTIVE THEORY

- The Research & Experimentation Tax Credit (IRC §41) was carefully crafted in the early 1980s to create an incentive for American businesses to increase the level of their expenditures directed to research and experimentation (R&E).

- In order to capture the level of year-to-year increases in R&E and base the tax credit on those increases, an incremental approach was designed.

- An incremental credit encourages new R&E, and it results in R&E that would not otherwise be conducted. Therefore, the current credit rewards those companies that increase the amount of sales revenue reinvested in R&E. In contrast, routine, recurring R&E that would be conducted anyway, is not rewarded.

- By excluding routine, recurring R&E investments, an incremental credit can be set at a high enough rate to change corporate behavior, thus generating new R&E, while still being fiscally responsible.

2) FLAT CREDIT AND "CORPORATE WELFARE"

- A shift from an incentive-based, incremental credit to a universally-available, flat credit would make the R&E credit susceptible to the charge that it is, in effect, a corporate welfare program, jeopardizing its survivability in the future.

- The main argument for a flat credit is that if high-risk, research-intensive industries, such as biotech, electronics and other cutting-edge technologies, are eligible for a tax credit, then everyone should be eligible. The proponents' preferred solution, a flat tax credit based on total R&E, clearly rewards some R&E that would be performed in any event. Service industries that routinely invest small amounts in R&E would receive the credit even though it would not incrementally increase the amount of research they perform.

3) FLAT CREDIT IS SIMILAR TO NOW-REPEALED ITC

- In 1986, Congress fundamentally reformed the tax code; included in that reform was the elimination of the Investment Tax Credit (ITC), which was a flat credit based simply on investment expenditures.

- Throughout its history, the ITC was much-maligned as nothing more than a handout to business — a tax credit for decisions businesses were going to make anyway.

- Under the intense scrutiny of the 1986 reforms, the ITC did not survive.

- Importantly, though, the incentive-based R&E credit did survive because it was structured to reward incremental research investments.

4) PERMANENCY IS MOST IMPORTANT TO BUSINESS COMMUNITY

- Business agrees that the R&E credit should be made permanent, so that investment decisions each year will be based on stability in the tax code.

- If the R&E credit is made permanent, the current incremental credit would make the difference between undertaking high-risk, long-term research projects to find cures for diseases like breast cancer or not. High-growth, R&E-intensive emerging industries, such as biotech and electronics, depend on the R&E credit to encourage these types of investments instead of safer projects.

- A wholesale change of the R&E credit may divert Congress' attention from finally making this important credit permanent.

5) BUDGET CONSTRAINTS

- Fundamentally changing the credit to a flat credit in excess of 5 percent would cost from between $5.5 to $12 billion over five years more than the current credit. These dollars would be better spent on extending the credit permanently and possibly fine-tuning the credit where needed.

- Since a flat credit would need to be set at a relatively low rate (5% or less) because of budget constraints, the effective incentive would be less than 2% on a book basis. This is hardly enough to make a difference.

- Defects in the calculation of the current credit may arguably create "winners and losers" but can be corrected (e.g., an adjustment to the base period or an election option into a progressive R&E credit at a set percentage above the national corporate R&E average) without changing the incentive nature of the R&E credit.

6) JOINT TAX COMMITTEE RATIONALE 1/

"Incremental credits are designed to target tax incentives where they have the most effect on taxpayer behavior. Incremental credits attempt to not reward projects which would have been undertaken in any event and to target incentives to marginal projects.

"Incremental credits have the potential to be far more effective per dollar of revenue cost than flat credits in inducing taxpayers to increase qualified expenditures.

"The incentive effects of incremental credits per dollar of revenue loss can be many times larger than those with a flat tax credit."

1/ Excerpts from "Description and Analysis of Certain Tax Provisions Expiring in 1994 and 1995," Joint Committee on Taxation, JSC-8-95, May 8, 1995, at pp. 38 and 39.

Mr. MATSUI. Thank you. Thank you all.

Chairman JOHNSON. I thank the panel very much. I am very pleased to have MCI and EDS here and appreciate your expertise; and Mr. Penner from the biotech industry, too. It is important that we move with good solid knowledge behind us.

I would like for you to look at your companies and see, given the administrative savings that you will make from a simpler approach, what would it take for the flat tax to be as beneficial for you as an incremental tax.

There are several ways to look at the issue of incentive. One could exclude the first 25 percent of research spending so that from then on, if you spent 10 percent additional dollars, two would go into that 25-percent base, or 250, and the rest would go into the portion that would be exposed to the flat credit.

So there are permutations that aren't quite as simple as the flat tax but have some equity and some administrative advantages. I would ask you to look at that.

I do think with the amount of activity in the small and medium-sized business sector and the role that they are increasingly playing in developing new products and doing some of the basic research that is going to drive future developments, it is important to try to think through, how can we make this more accessible to them?

To my knowledge, this isn't accessible to them. They don't have the resources to manage an incremental benefit.

Thank you very much for your testimony, and we invite your input in the weeks ahead.

[The following was subsequently received:]

BIO
BIOTECHNOLOGY
INDUSTRY
ORGANIZATION

June 6, 1995

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The Honorable Nancy Johnson
Chair, Subcommittee on Oversight
House Ways and Means Committee
343 Cannon Building
Washington, D.C. 20515

The Honorable Robert Matsui
Ranking Member, Subcommittee on Oversight
House Ways and Means Committee
2311 Rayburn Building
Washington, D.C. 20515

Re: Incremental vs. Flat Rate R and E Credit

Dear Congresswoman Johnson and Congressman Matsui:

BIO very much appreciates your leadership on the R and E and Orphan Drug Tax Credits. Our entrepreneurs could not have more effective champions in the Congress.

I am writing to follow-up on issues which were raised during the testimony of Harry Penner, CEO of Neurogen, at the R and E Credit hearing. Harry was asked for his views on the comparative effectiveness of an incremental vs. a flat rate R and E Credit. Harry stated his preference for an incremental credit, but asked for the opportunity for BIO to submit additional information on the issue.

Enclosed are talking points about incremental and flat rate credits. As Harry indicated, we do prefer an incremental credit. There are some problems with the current structure of the incremental credit, which were outlined in his testimony, but these do not lead us to prefer a flat rate credit.

One of our concerns is that a flat rate credit would be subject to the same criticisms as the Investment Tax Credit, which was repealed to finance the 1986 Tax Reform law. An R and E Credit which provides a credit for the first dollar of research would be subject to the same criticism as the I.T.C. and it might lead

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to the same result. An incremental credit makes sense as it rewards increased research, not just maintenance of research effort. This design provides a true incentive for research, not a credit for research which would have been undertaken without the credit. This means that the incremental credit is designed for entrepreneurs who can increase the competitiveness of U.S. firms in international trade, a critical issue for the long-term growth of our standard of living. We are not opposed to elections which might be made available to expand the number of companies which can claim the R and E credit.

The biotechnology industry is the most research intensive industry in the civilian manufacturing sector. The industry on average spends $68,000 per employee on research, more than nine times the U.S. corporate average of $7,500. In a 1994 survey by Business Week, six of the top ten firms in the U.S. in terms of research expenditures per employee were biotechnology companies, including Biogen ($208,724), Genentech ($117,594), and Genetics Institute ($107,657). Ernst & Young reports that biotechnology companies spent $7 billion on research in 1994, up $1.3 billion over 1993. The R&E and Orphan Credits are critically important as an incentive for this research.

Thank you very much for your leadership. We will do all that we can to support making the R and E Credit and Orphan Drug Credit permanent and to restructure them so that they are even more effective for entrepreneurs.

Sincerely,

Charles E. Ludlam
Vice President for
Government Relations

CC. Ron Lefrancois
Cynthia Johnson
Members of the House Ways and Means Committee

RATIONALE FOR AN INCREMENTAL CREDIT FOR R&E EXPENDITURES

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-- A shift from an incentive-based, incremental credit to a universally-available, flat credit would make the R&E credit susceptible to the charge that it is, in effect, a corporate welfare program, jeopardizing its survivability in the future.

-- The main argument for a flat credit is that if high-risk, research-intensive industries, such as biotech, electronics and other cutting-edge technologies, are eligible for a tax credit, then everyone should be eligible. The proponents' preferred solution, a flat tax credit based on total R&E, clearly rewards some R&E that would be performed in any event. Service industries that routinely invest small amounts in R&E would receive the credit even though it would not incrementally increase the amount of research they perform.

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-- "Incremental credits are designed to target tax incentives where they have the most effect on taxpayer behavior. Incremental credits attempt to not reward projects which would have been undertaken in any event and to target incentives to marginal projects."

-- "Incremental credits have the potential to be far more effective per dollar of revenue cost than flat credits in inducing taxpayers to increase qualified expenditures."

-- "The incentive effects of incremental credits per dollar of revenue loss can be many times larger than those with a flat tax credit."

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[1] Excerpts from "Description and Analysis of Certain Tax Provisions Expiring in 1994 and 1995," Joint Committee on Taxation, JSC-8-95, May 8, 1995, at pp. 38 and 39.

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Corporation
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Charles W. Rau
Vice President & Tax Counsel

May 19, 1995

The Honorable Nancy L. Johnson, Chairman
Subcommittee on Oversight
House Committee on Ways and Means
1136 Longworth House Office Building
Washington, DC 20515

Dear Madame Chairman,

This is to follow up on the questions you presented to members of our panel who testified before your Subcommittee on May 10 with respect to the R&E tax credit. I understood you to pose two questions. First, what would be the impact on our company from a change from the current 20% incremental tax credit to a flat 5% tax credit? Second, what administrative savings might be generated by a change to a flat rate tax credit?

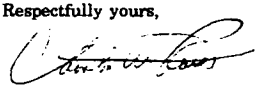
With respect to the first question, because MCI has consistently increased its commitment to research, we receive an effective tax credit of 10% of our qualified expenditures under the current incremental system. Therefore the substitution of a flat rate credit of 5% would mean a 50% reduction in the credit available to MCI. (After "the haircut" of IRC Section 280C(c)(3) the 10% becomes 6.5% -- while the 5% would become 3.25%.)

As to any administrative savings, there are fundamentally two activities connected with our obtaining the existing R&E credit. The first is the gathering of information to support the credit and the second is justifying the credit to IRS auditors during the course of their examination. In both instances, our principal administrative cost is in identifying and documenting what constitutes a qualified R&E expenditure. Any cost attendant to applying the incremental credit formula is *de minimus*. Therefore, a change to a flat rate tax credit system would generate virtually no administrative cost savings.

To the extent funds are available and you desire to make the R&E credit more universally available, we request that any enhancement be made as an elective alternative and not in lieu of the current incremental R&E tax credit.

If MCI may be of further service to you or your Subcommittee, please contact me. With our corporate headquarters in DC, we are readily available to you and your staff if further dialogue or information is desired.

Respectfully yours,



May 25, 1995

The Honorable Nancy L. Johnson
U. S. House of Representatives
Room 343
Cannon House Office Building
Washington, D.C. 20515

Madam Chairwoman:

I would like to respond, for the record, to two questions you asked during my testimony before the Subcommittee on Oversight, of the Committee on Ways and Means, on May 10, 1995. You inquired as to (i) what effect a flat Research and Experimentation (R&E) Tax Credit would have on EDS and (ii) what our administrative savings would be if a change were made from an incremental to a flat credit.

EDS' R&E Credit has been averaging around 10 percent, if converted to a flat rate. This would mean a change in law from the current incremental credit to a flat credit of 5 percent would reduce our incentive by one half. In fact, anything less than a 10 percent flat credit would result in a lower incentive than we experience under current law.

The administrative savings for EDS of a change from an incremental to a flat credit would be minimal. We spend more than 2,000 hours each year identifying and documenting projects that qualify for the R&E Credit and making the required calculations. The information necessary for the incremental calculation is generally readily available, and the calculation takes a negligible amount of time. There is a requirement, however, that taxpayers who have acquired or disposed of businesses adjust their base period for those acquisitions and dispositions to keep it consistent with the current period. Since EDS has acquired a significant number of businesses, it spends about 40 hours per year making these base period adjustments. Thus, I would estimate that our administrative burden would drop by less than 2 percent (40/2,000+) if we migrated to a flat based credit. For most companies, who are not making acquisitions and dispositions, I would expect the administrative savings to be even less.

Corporate Tax
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Plano, Texas 75024
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I hope the above information helps you and the rest of the Subcommittee in your analysis. I would again like to commend you for your leadership on this issue, which is so important to EDS, the information technology industry, and the country. If you have additional questions or I can be of further assistance, please feel free to phone me at (214) 605-1238. I am enclosing a copy of this letter with the corrected transcript of my testimony that I am returning to the Subcommittee.

Sincerely yours,

R. Randall Capps

RRC:ch

Chairman JOHNSON. The next panel consists of Dan Kostenbauder, Hewlett-Packard; Cliff Jernigan, Advanced Micro Devices; Roger Siboni, Peat-Marwick; Harry Gutman, Generic Pharmaceutical Industry Association, on behalf of the National Association of Pharmaceutical Manufacturers and National Pharmaceutical Alliance; and Gordon Steel, Xilinx.

Mr. Kostenbauder will start.

STATEMENT OF DANIEL KOSTENBAUDER, GENERAL TAX COUNSEL, HEWLETT-PACKARD CO., PALO ALTO, CALIF.

Mr. KOSTENBAUDER. Madam Chair, I am Dan Kostenbauder, general tax counsel with Hewlett-Packard Co. Last year, Hewlett-Packard had worldwide revenues of $25 billion, about 54 percent of which was outside the United States, and we spent over $2 billion worldwide in R&D.

I want to start by thanking you for conducting these hearings today on the R&E credit and express our appreciation for your leadership on this issue, along with Mr. Matsui, as leaders on H.R. 803; and to thank the other members of the subcommittee for their support of the R&E credit.

Hewlett-Packard has long supported the R&E credit, and I hope with my testimony today to add a little more insight and understanding of the workings and the mechanics of the current credit as to how it affects some companies that have been traditionally very much involved in the high technology world. The current structure of the credit does have some efficiencies that should be addressed.

The way I like to describe the current structure of the credit is to talk about R&D intensity. What happens in terms of the current credit is, you measure the qualified research and development expenses and divide that by gross receipts, the company's revenue, and that provides a fraction that was based in the 1984–88 timeframe. So your R&D divided by your revenues in that 5-year period establishes a baseline R&D intensity. Essentially, to get a credit into the future, you have to exceed that R&D intensity. If you fall below that R&D intensity, you will not get a credit.

My written statement goes into some greater detail on a variety of factors that could impact your R&D intensity over time, having more to do with many factors besides just increasing R&D.

I will focus on two particular elements that are surprising and in some ways counterproductive. For example, one is exports. If a company under this current methodology starts exporting a significant amount more than it did during the base period, this really implies that the worldwide demand is being supplied more from the United States than from outside the United States. That is not going to change the overall business R&D intensity, but reduce the R&D intensity in the United States, where we are measuring the R&E credit. So this would be one anomalous effect.

If a company started exporting significantly, it would reduce or perhaps eliminate the R&E credit because your R&D intensity would fall below the base period. That, in my view, would be a somewhat anomalous result.

Another very large factor—a number of these factors affect Hewlett-Packard and some don't that I have identified in my testimony.

The single biggest factor affecting Hewlett-Packard is the change in our business. I think it is important to note that in the high technology world, businesses are—not just computers, but even very significant parts of the computer business; for example, the economics of personal computers and the R&D intensity associated with personal computers will be different than that associated with larger computers in very substantial ways.

Let me, since I submitted my written testimony—Monday morning the Wall Street Journal had an interesting article titled "Compaq Seeks To Join U.S. Computer Industry's Elite." The point of this article is that a company which has been a leader in the personal computer area is now seeing itself as being a participant across a broader part of the computer business.

After discussing some of the issues involved in that, the reporter says, analysts also suggest Compaq will need to spend more on research and development to compete in the upper strata of computing. They define a couple of statistics about recent R&D, but then conclude, "but Compaq's outlays still amounted to only 2 percent of 1994's $10 billion-plus in sales." That compares with 6.8 of revenue at IBM, 8.1 of revenue at Hewlett-Packard, and a whopping 18 percent at Digital, all companies with much greater sales than Compaq.

I am not here to give an extensive economic analysis of all this, but what is key there is that some parts of our industry—the high technology world or the computer world, broadly defined—have a historical business with a very low R&D intensity associated with it and others have much higher R&D intensity.

Some of those companies do nothing more than change their business mix and therefore have a higher R&D intensity and will get a very large R&E credit. Other companies who are changing their business mix and having more sales of products with lower R&D intensity are virtually precluded in the future from getting an R&E credit, and this is an anomaly that we think should have been addressed in any extension of the R&E credit.

One other thing. If you have my written testimony, there is a chart on the last page that is helpful in understanding what is happening, by referring to that chart. Three lines, the top line being revenue, if you have a successful company where revenue is increasing because of this phenomenon of R&D intensity being the same, the bottom line is the base, and that will increase along with revenue.

So for any number of these reasons I have talked about, if R&D is actually growing at a slower rate than revenue is growing, over time that company will be out of the R&E credit despite the many different factors that could cause that result.

In conclusion, I would like to strongly urge the subcommittee to improve the base period. Particularly if some low-cost solution to improving the credit can be identified, it should definitely be adopted in conjunction with a permanent extension of the credit.

Thank you, Madam Chair.

[The prepared statement and attachment follow:]

STATEMENT OF DANIEL KOSTENBAUDER
GENERAL TAX COUNSEL, HEWLETT-PACKARD CO.
PALO ALTO, CALIF.

Good morning. My name is Dan Kostenbauder. I am General Tax Counsel at Hewlett-Packard Company of Palo Alto, California. I appreciate the opportunity to testify today on behalf of Hewlett-Packard Company about the need for restructuring of the base period rules for the research and experimentation (R&E) credit.

Madam Chairman, I want to congratulate you and Mr. Matsui, the Ranking Member of the Oversight Subcommittee, for your leadership in introducing H.R. 803. Although my testimony will discuss the need for modifications to the structure of the R&E credit, your bill is an excellent starting point. We appreciate that you are holding hearings on the need for a permanent R&E credit and to examine possible structural modifications to ensure that the R&E credit delivers the maximum incentive effect to the largest number of taxpayers possible. We would also like to express our appreciation, as well, for the support of the many co-sponsors of H.R. 803 -- both in the Ways and Means Committee and the full House of Representatives.

Hewlett-Packard designs, manufactures and services electronic products and systems for measurement, computation and communications. Our basic business purpose is to create information products that accelerate the advancement of knowledge and improve the effectiveness of people and organizations. The company's products and services are used in industry, business, engineering, science, medicine and education in more than 120 countries.

During HP's last fiscal year, which ended October 31, 1994, HP had worldwide revenues of about $25 billion. Over 54% of this revenue was from sales to customers outside of the United States. HP spent over $2 billion on research and development worldwide, most of which was performed within the United States. HP's strong research and manufacturing base in the United States enables it to be one of our country's largest exporters. Last year HP exported over $4.6 billion from the United States.

Research and development have long been key to the success of HP and other high-technology companies. The process of developing new high-technology products is complex and uncertain and requires innovative designs that anticipate customer needs and technological trends. After the products are developed, the company must quickly manufacture products in sufficient volumes at acceptable costs to meet demand.

During the 14 years that the R & E credit has been in effect, HP has increased qualified R & E every year except one. Since the R&E credit was first adopted in 1981, there has been an ongoing debate -- in Congress and in the business community -- about whether it is appropriate to have an R&E credit, and if so, how it should be structured. When the R&E credit was first enacted, it was made temporary so that Congress could judge its effectiveness. Since then it has been extended six times. Congress has consistently reaffirmed its commitment to provide a market incentive to encourage private-sector R&D.

HP has supported tax incentives for R&D since 1981. We believe that R&D is a high value-added activity that generates good, high-wage jobs and a better standard of living. Increasing R & D in the United States will lead to a stronger U. S. economy as the technology and intellectual property generated by R&D is sold in the global marketplace. Tax incentives to stimulate U. S. R & D are appropriate because they will increase U. S. economic growth and counteract the incentives many other countries offer for conducting R & D in their countries.

The R&E credit's focus has been sharpened by limiting both qualifying activities and eligible expenditures, and altering its computational mechanics. The credit has been the focus of significant legislative activity and has undergone refinement many times since its inception. Accordingly, such an important incentive must be continually reviewed to ensure that it is structured so that it is available over time to companies that effectively commercialize R & D.

Most companies that conduct a significant amount of R&D in the United States sell a significant amount outside of the United States. In HP's case about 54% of total worldwide revenue is from customers outside of the United States. For a company to be successful, it is critical to sell into the global marketplace in order to be able to achieve the highest possible revenue from a given expenditure for R&D. In global business, being able to keep global R&D intensity as low as possible by maximizing revenue is a critical competitive element. If a company's R&D expenses

are much higher than those of direct competitors, company profits available to finance future R&D and general growth will not be as readily available.

"RESEARCH INTENSITY" CREDIT

The 1989 revision of the methodology for computing the R&E credit measures R&E intensity (Qualified R&E divided by gross receipts) during an arbitrary 5-year base period (1984-1988). To the extent R&D intensity increases, a credit is available. If R&D intensity falls, then no credit is available. For purposes of this computation, gross receipts are measured using a four-year moving average. This is an appropriate element of the formula, since companies generally would find it difficult, and probably imprudent, to increase R&D expenses to correspond with revenue growth above expected levels. Furthermore, if gross receipts were measured on only a current year basis, the amount of R&E credit could be very volatile and therefore would be less of an incentive. In addition, companies that are especially successful in commercializing R&D would almost never be able to increase R&D above the base period intensity level if gross receipts were measured using too short a time period.

The "R & D intensity" methodology has an underlying premise that higher gross receipts enable a company to spend a proportionately higher amount on R & D. This premise might have some validity if a company maintained the same relative mix of products and the same relative market position and if the economics and technologies of those products remained stable over time. In rapidly changing high-technology businesses, these circumstances are unlikely to prevail for very long for very many companies.

CONCERNS ABOUT THE "RESEARCH INTENSITY" CREDIT

At the end of this testimony is a chart that schematically addresses HP's main concern with the "research intensity" R & E credit methodology.

Any company whose rate of revenue growth exceeds its rate of R & E growth will eventually receive no incentive from the U. S. R & E credit -- *even though the company's R&E is increasing.* This is a result that should not be built into the structure of the credit without some feature to permit companies whose base exceeds qualified R & E, while qualified R & E is increasing, to qualify for the credit.

R & D expense budgets are much more within the control of a company's management than gross receipts. Gross receipts will depend on how quickly, cheaply and effectively a company can manufacture and sell products it has invented and designed. Ultimately gross receipts will depend upon how customers react to the fruits of the R & D effort -- will they pay high prices for large quantities of a product, or will they only be willing to buy small quantities at low prices? Companies and their management's can decide to spend a certain amount on R & D, but they cannot control how customers respond. Companies that consistently, over a number of years, are able to convert R & D spending into successful products will have their gross receipts grow faster than R & D in most cases.

Having a changing mix of products is another major factor that can result in a company having gross receipts grow faster than R & E expenses. To illustrate this point, imagine a company that was in a business characterized by high R & E intensity (say 14%) during the 1984-1988 base period. Suppose that the company decides to compete in a second high-technology business characterized by somewhat lower R & E intensity (say 8%). If the company is successful in the second business, its future R & E intensity for the two businesses together will be lower than the company's "fixed base percentage." This would be true even if the company increased the R & E intensity of its new business (to 10%). Again, given the dynamic nature of most companies, fixing the appropriate threshold for determining R & E credits on a base period 7 to 11 years prior to today, without any adjustment mechanism, seems quite inappropriate.

FACTORS THAT AFFECT R&E INTENSITY

For analytical purposes, it is useful to consider a company's R & E intensity on a global basis, since most high-technology companies compete in a worldwide marketplace. Global R&D intensity may be considered to be composed of U.S. R&D intensity and foreign R&D intensity.

The mechanics of the U.S. R&E credit will then be affected by three major factors:
(1) U.S. R&E intensity during the 1984-1988 base period, which established the "fixed base percentage;"
(2) factors impacting general R&E intensity; and
(3) factors impacting only U.S. R&E intensity.

FIXED BASE PERCENTAGE

The 1984-1988 period used to establish the "fixed base percentage," which can be thought of as "R&E intensity," is obviously an arbitrary period. This period was selected because it was the period immediately before the law was enacted. For most companies, it was probably a representative period. For others, however, it might have been unrepresentative -- either too high or too low.

In HP's case, the fixed base percentage was clearly higher than average because of two major factors. First, HP's revenue growth was low due to a general downturn for computer companies in 1985, and delays in bringing new products to market. Second, major investments were made in a new computer architecture and technology called RISC ("reduced instruction set computing").

GENERAL R&D INTENSITY

Factors that affect general R&E intensity include:

Product Mix -- If gross receipts from products with low R&E intensity grow more rapidly than gross receipts from products with high R&E intensity, then average R&E intensity will fall. This could occur even if the actual R&E intensity of all products was rising.

Successful Products -- If products are significant commercial successes, gross receipts will tend to grow more rapidly than R&E. This would occur, for example, if a company gained market share from global competitors. Although the argument could be made that a successful company can afford to do more R&D, it seems counterproductive to deny further tax incentives to companies that have been especially successful in commercializing R&E while reserving most of the benefits for companies that are less successful at commercializing R&E.

Increased R&E Efficiency -- By relying exclusively on a historical base without any adjustment mechanism, a company that significantly improves the efficiency of its R&E activities may lose all incentive benefits of the credit. Again, this scenario seems counter intuitive. Although it would not be worthwhile for a company to become less efficient in order to claim a greater R&E credit, companies should not be denied any R&E credit simply because they significantly increase their efficiency at conducting R&E.

U.S. R&E INTENSITY

There are a number of factors that can impact U.S. R&E intensity relative to foreign R&E intensity. Although for a given company worldwide R&E intensity may remain relatively stable over the short run, U.S. R&E intensity could rise, thereby generating more R&E credit, or it could fall, thereby generating less R&E credit.

Shifting R&E to the United States -- By shifting the location where R&E is conducted from a foreign location to the United States, U.S. policy objectives would be supported and a company's R&E intensity, and therefore R&D credit, would increase.

Shifting Manufacturing to the United States -- Shifting manufacturing to the United States would cause R&E credits to fall. This is because U.S. gross receipts would increase thereby reducing U.S. R&E intensity.

Exports -- Increasing the relative portion of a company's worldwide manufacturing done in the United States would cause U.S. exports to rise in order to supply worldwide demand. This increase in exports would increase gross receipts and therefore lower R&E intensity, which in turn would cause a reduction in R&E credits. As in other situations noted above, it seems counterproductive to rely on an R&E credit that penalizes a company for increasing exports from the U.S. faster than its global sales are increasing.

PROPOSED SOLUTIONS

HP has engaged in many discussions over the years about the need for a permanent commitment by the Federal government to encourage U.S. R&D through the R&E credit and about how to structure an ideal R&E credit. We are not sure such an ideal exists. Nevertheless, we do not believe "the perfect should be the enemy of the good," and so we have supported the existing R&E credit.

At this time, we are not convinced that the existing credit should be revised totally. The many factors described above that impact the existing credit make it difficult to focus on one or two that should be dealt with to the exclusion of others.

We strongly urge that the R & E credit be adjusted so that companies that have experienced changed circumstances since 1989, when the R&E intensity concept replaced the three-year rolling average concept, may qualify again for the credit.

We hope a permanent credit is enacted with an adjustment mechanism in place so that companies dramatically increasing U.S. exports, improving R&E efficiency, or shifting the businesses in which they compete are not precluded from receiving any incentive effects of the R & E credit in the future. Because the credit has been in place since 1981, it could be considered to have achieved "quasi-permanence." During this first major review of the structure of the R&E credit since its current format was introduced in 1989, it would be appropriate to correct obvious shortcomings at this time.

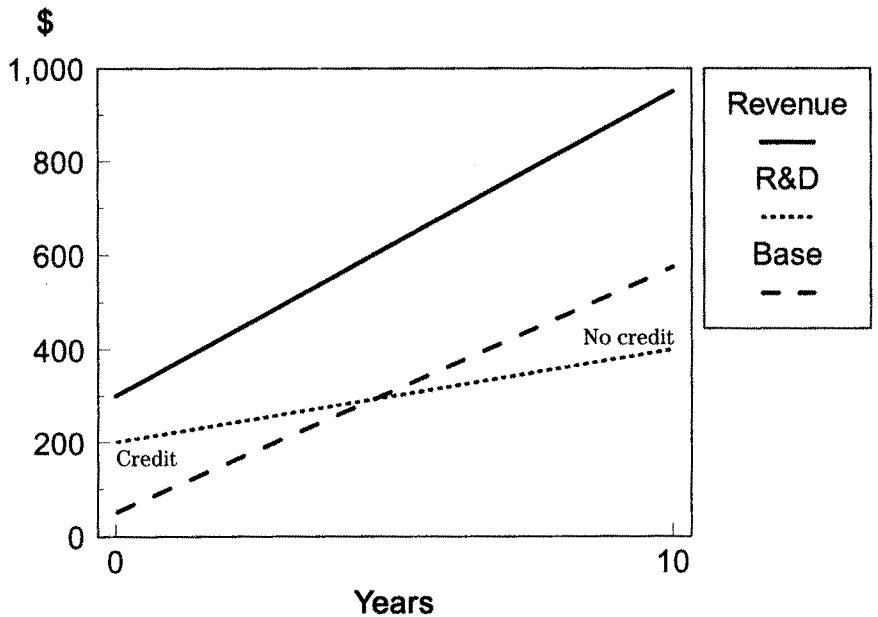
HP would offer the following specific proposal that would operate within the general structure of the existing credit (noting that we are open to other approaches as well):

If a company has not received any credit for one year because the base for that year exceeded qualified R&E, then for the next year the fixed base percentage would be recalculated based on the qualified R&E and gross receipts for the year in which no credit is available and for the four prior years. A company should also be able to elect to have this recalculation of the fixed base percentage be conducted for several years, perhaps five, before a final fixed base percentage is set. This will enable companies that are in the middle of fundamental shifts in their business to continue to receive an incentive benefit from the credit while this shift occurs. This opportunity would be available if R & E expenses increase from the prior year.

With regard to how the Congress deals with the credit at this time there appear to be two broad approaches within a limited level of funding for the credit. Congress could make permanent the existing R & E credit, leaving it to those companies or industries not receiving any incentive from the R & E credit to lobby in some future year for some restructuring of the credit. Alternatively, Congress could restructure the credit now so that it would be available to a broader group of companies and then have all companies benefiting or likely to benefit from the credit work together in the future to further enhance the credit. Both approaches could eventually lead us to the same general destination. The second approach just mentioned seems a more appropriate route toward adopting an effective credit of benefit to the broadest range of taxpayers.

Thank you for the opportunity to appear today to share our thoughts with you.
(050595a)

Why Base Restructuring Is Necessary



HEWLETT PACKARD

CORPORATE TAX DEPARTMENT
R&D 1/95

Chairman JOHNSON. Thank you.
Mr. Jernigan.

STATEMENT OF CLIFF JERNIGAN, DIRECTOR, GOVERNMENT AFFAIRS, ADVANCED MICRO DEVICES, INC., SUNNYVALE, CALIF.

Mr. JERNIGAN. Thank you. I am Cliff Jernigan. I am director of Government Affairs at the AMD, Advanced Micro Devices, Inc., one of the largest semiconductor companies. Our major plants are in Sunnyvale, Calif., and Austin, Tex. We have 6,000 people in the United States and 12,000 worldwide. In 1994 our worldwide sales were $2.1 billion. I am here to talk about the research and experimentation tax credit.

The credit is a very worthwhile incentive, but in a nutshell, we do not believe it is relevant to much of American business. It is too complex and it operates in an inequitable manner to many businesses.

The semiconductor industry is one of the leading research investors in the country. We are viewed by government and the private sector as one of the critical industries. In short, we represent some of the most important crown jewels of the kingdom.

Semiconductors drive all of our advances in the electronics industry and in the Information Age. We are exactly the type of company and industry meant to benefit from a research credit. Unfortunately, AMD has not received the credit since the credit structure changed in 1989. We have increased our research spending in absolute dollars every year since 1989. In our research spending, percentage to sales is among the highest in the country at an average of 18 percent for the last 11 years, the time period beginning with the 1984–88 time when you look at R&D to sales for the base point.

The present research credit formula is ill-conceived, favors some industries and taxpayers at the expense of others, and does not fully accomplish its intended effect of increasing U.S. research efforts. Major restructuring of the credit is absolutely essential.

If the present system is to be kept intact, at a minimum, the 5-year base period from 1984–88, which is used to determine the research spending and sales percentage, needs to be moved to a more current time period such as 1990–94. For AMD, we prefer to return to the prior law, the 3-year base period rule, or even go to a new method such as a flat rate credit on current research spending.

We really prefer a flat credit. A flat rate credit has the benefit of being relevant to today's taxpayer—it is simple to administer, and it treats all taxpayers in an equitable manner. It takes the nuances out of the current formula which hurts taxpayers with abnormally high research spending percentages during the 1984–88 base period, or who are experiencing abnormally high sales growth over the past 4 years precisely because of the research investments made earlier, which are coming to fruition in the form of strong sales demand for their products.

In summary, we need to revise the credit to make it relevant, simple, and equitable. AMD favors the flat rate credit.

Thank you very much.

[The prepared statement and attachment follow:]

TESTIMONY OF CLIFF JERNIGAN OF ADVANCED MICRO DEVICES, INC. ON THE R&E TAX CREDIT BEFORE THE WAYS AND MEANS COMMITTEE ON WEDNESDAY, MAY 10, 1995

INTRODUCTION

My name is Cliff Jernigan. I am Director of Government Affairs at Advanced Micro Devices, Inc. (AMD), one of the largest semiconductor companies in the United States. AMD has major plants in Sunnyvale, California and Austin Texas and employs 12,000 people worldwide.

AMD supports making the Research and Experimentation (R&E) Tax Credit permanent, but only if the Committee fundamentally reforms the structure of the credit. If the credit is to provide the greatest return within current budget or cost limits, the manner in which it is computed must be relevant, equitable and simple, while providing an incentive for taxpayers to invest in research in the United States. We believe the current calculation of the base amount needs significant improvement if the flexibility necessary to meet changing economic and market conditions is to be worked into the credit for the future.

RELEVANT

Current law uses a complicated fixed base percentage formula that was enacted as part of the Omnibus Budget Reconciliation Act of 1989. This formula uses the time period from 1984 to 1988 inclusive to determine the ratio of qualified research expenditures to gross receipts. The 1984 to 1988 time period has lost its significance as a yardstick to determine today's research intensity. In addition, companies that do not have three years of operating history during this 1984 to 1988 time period are classified as "start-up" companies, and their base period is computed under completely separate, more favorable rules. As time passes, a growing percentage of all R&E credit taxpayers will be considered "Start-up" companies. Some of these enterprises are now large publicly held corporations and are still benefiting from the more favorable rules. By not updating this time period to cover a more contemporary interval, the formula will continue to deny credit benefits to taxpayers with increasing research expenditures while unjustly rewarding other taxpayers whose facts and circumstances may not warrant the amount of benefit--resulting in an imbalance that undermines the intent of the program altogether.

EQUITABLE

A tax incentive should treat taxpayers the same when they engage in similar behavior. AMD has continuously increased its U.S. financial statement research and development spending from $203.7 million dollars in 1990 to $280 million dollars in 1994--a 37% increase. From 1984 to 1994, AMD's R&D as a percentage of sales was 18%--one of the highest percentages in the U.S. (see chart attached). Yet AMD has not qualified for the research credit since the (OBRA '89) change to the base year period.

One of the research credit's goals is to provide an incentive to taxpayers to increase their research spending. Clearly, AMD has accomplished this, yet we receive no benefit. Furthermore, AMD would have received a research credit during this period under the old base period rules, or, if AMD qualified as a "start-up" company under the existing rules. This result is inequitable and the effect on AMD and other similarly situated research intensive companies points out the fact that the current base year formula needs to be revised.

SIMPLE

Simpler tax laws are more easily understood by taxpayers. Ease of understanding yields many benefits, including greater compliance with the tax laws at a much lower cost both to the government and the taxpayer.

A more simple and straight forward research credit would also significantly reduce the incidence of unintended adverse consequences, such as AMD is currently experiencing, where research spending is increasing significantly yet no credit is available.

The current base period amount requires a computation of a research intensity ratio over a five-year period beginning in the mid-eighties. Then this ratio must be modified by changes in the definition of qualified research between these years and the qualified expenditures for the current year (i.e., rental expenses). This ratio is then multiplied by the average annual gross receipts of the 4 preceding taxable years. The current rule is anything but simple and may be unreasonable.

An example of the credit computation is as follows:

1. Determine U.S. R&E spending for the years 1984, 1985, 1986, 1987 and 1988
2. Determine U.S. sales for the years 1984, 1985, 1986, 1987 and 1988
3. Divide U.S. R&E spending for the years 1984-88 by U.S. sales for the years 1984-88 to determine the R&E percentage
4. Multiply the R&E percentage times the average sales for the prior four years to arrive at the R&E base
5. Subtract the R&E base from current year U.S. R&E
6. Multiply the difference by 20% to determine the R&E credit

Putting numbers into the above formula, if the R&E percentage in step 3 above is 10% and if the average sales in step 4 above for the prior four years is $1,000,000, then the base will be $100,000 (10% x 1,000,000). If the current year R&E in step 5 above is $150,000, then the difference of $50,000 would be multiplied by 20%, as in step 6 above, to arrive at a credit of $10,000

In our view, a more simple approach would be to include fewer years and more current year information into the determination of the base amount if the incremental structure is preserved. In terms of simplicity, a flat credit based on the current years' qualified costs represents a better and more simple option and would be an appropriate starting point in a modified structure.

AMD'S SITUATION

AMD and the semiconductor industry in general were adversely impacted by Japanese dumping of semiconductor memory products into the U.S. and world markets in the mid-1980's. The dumping coincided with a recessionary period in the U.S. industry. Together, these factors resulted in significant declines in revenue for many semiconductor companies. AMD's financial statement revenue fell from $1.12 billion in 1984 to $795 million in 1985--a 29% decline. AMD's strategy out of this situation was to significantly increase research spending in order to offer superior integrated circuits. Book R&E spending increased from $137 million in 1984 to $173 million 1985--an increase of 26% at the same time that revenues declined by 29%!! This had a disastrous impact on AMD's fixed base period R&E percentage by "artificially" inflating it, making it abnormally high and fiscally impossible to overcome. Clearly the contraction in revenues was out of AMD's control. Fortunately, in this innovate or die situation, AMD did recover and revenues again exceeded $1 billion by 1988 with $1.13 billion in sales.

INCENTIVE FOR U.S. RESEARCH / ALTERNATIVES TO EXISTING CREDIT

The R&E credit operates as an incremental concept--the incentive credits expenditures over a certain threshold--in order to provide the highest possible benefit at the lowest possible cost to the federal Treasury. Currently, the research credit rate is 20%. The consensus of most recent research credit studies is that the credit has been effective in stimulating U.S. research spending. Most of these studies also point out, however, that the temporary nature of the credit does not improve the credit's ability to stimulate additional spending. Furthermore, many foreign countries have recognized the merits of encouraging research activities and have enacted research tax credit mechanisms as well. AMD has complete and reliable knowledge only of its own facts. However, there must be other enterprises with significant research expenditures which find that they too do not qualify for the credit even with R&E expenditures increasing year to year. This fact flies in the face of congressional intent, and unless the basic structure of the credit is corrected, some industries, perhaps numerous in number, would just as soon let the credit lapse.

We believe that no single fixed base period formula can produce a fair credit as a result of the changes that occur within all industries over time. Should Congress choose to retain some form of a fixed base period formula, an alternative should be provided to assure a credit for those taxpayers who are currently increasing research spending. One option would allow taxpayers who have increased research spending in three of the last five years to make an irrevocable election to take a 5% credit on current year qualified research expenditures for the next five years. We support an option to allow a flat rate credit since it is the simplest and most equitable method of computing the research credit. We are not in favor of a "fresh start" that does not recognize that some taxpayers have been prevented from claiming the credit since the change to the fixed base period concept.

Should Congress maintain an incremental credit formula, and if it is willing to reform the fixed base concept, we believe some form of moving base period yields the most equitable result. The moving base period will self correct over time for those industries and taxpayers whose businesses are affected by factors outside that have events beyond their control during the base period that prevent them from qualifying for the credit, even as their research spending increases.

As stated before, a flat rate credit for all qualifying research expenditures is a simple and equitable approach and still provides an incentive to increase meaningful research. Should this option be considered too expensive or as not providing sufficient marginal incentives, tests could be drafted to allow a credit only to those taxpayers whose research efforts--and expenditures--surpass certain limits.

CONCLUSION

We look forward to a restructured and more equitable permanent research credit. We believe that the research credit does stimulate additional U.S. research which results in more high-skill, high-paying jobs, export growth and a higher standard of living for residents. Furthermore, we believe a credit that arbitrarily denies the benefit to taxpayers who increase their U.S. research, is a strong disincentive to continue the conduct of their research activities in the U.S. We hope this paper and the options presented herein help the Committee as it considers the extension and revision of a revitalized R&E tax credit..

AMD RESEARCH AND DEVELOPMENT EXPENSE AS A PERCENTAGE OF SALES
FROM AMD ANNUAL REPORTS
(IN MILLIONS)

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	TOTAL
SALES	1122	795	829	997	1126	1105	1059	1227	1514	1648	2134	13556
R&D	169	207	223	248	208	202	204	214	228	263	280	2446
	15	26	26.9	24.9	18.5	18.3	19.2	17.4	15	15.9	13	* 18%

(* 11 year average)

SALES 1984 - 1988	4869	SALES 1989-1994	8687
R&D 1984-1988	1055	R&D 1989-1994	1391
R&D %	21.7%	R&D %	16%

Chairman JOHNSON. Thank you very much.
Mr. Jones.

STATEMENT OF ROGER S. SIBONI, NATIONAL MANAGING PARTNER, KPMG PEAT MARWICK, AS PRESENTED BY KENDALL C. JONES, PARTNER, NATIONAL TAX PRACTICE, KPMG PEAT MARWICK

Mr. JONES. Thank you. My name is Ken Jones. I am a partner in the Washington national tax practice of KPMG Peat Marwick. I am here to testify on behalf of Roger Siboni, our managing partner in the Information, Communications and Entertainment line of business, who, I learned about 15 minutes ago, is unavoidably detained and could not be here on time.

We would like to take this opportunity to urge your support of H.R. 803, which would make the R&E credit a permanent provision in the Internal Revenue Code. Moreover, we encourage the adoption of a flexible credit, which would more effectively simulate investment in R&E.

Perhaps the most important point to be made regarding the credit is that it must become a permanent part of the code. While there are two bills pending now that would make the credit permanent, permanence is not yet a reality. We are concerned that in the heat of the legislative negotiations, the R&E credit may be extended once again on a temporary basis.

I would point out that since 1986 the R&E credit has been renewed on a temporary basis six times and structurally modified four times. The uncertainty as to the duration of the R&E credit, coupled with the frequent modifications to the statutory provisions affecting the credit, has resulted in the inability of businesses to effectively plan their research activities. Specifically, a business that plans to conduct research projects is in the position of having to speculate as to whether a temporary credit provision set to expire will be extended.

The typical company is much less likely to commit resources to long-term research activities under those kinds of conditions, because research activities inherently involve risk. Businesses that conduct research need certainty as the tax consequences of their activities. Enacting a permanent credit would provide the certainty that is necessary to budget research activities.

Enacting a permanent provision would also reduce the number of legislative changes to the R&E credit provision because every time the R&E credit must be extended, the opportunity exists for Congress to change the structure of that credit.

The numerous modifications over the years have made it very difficult for the IRS and the Treasury Department to publish meaningful guidance on the mechanical application of the credit. To illustrate that point, the final regulations defining the R&E expenditures were issued in 1994, 13 years after the statute was originally enacted. In the interim, businesses, tax practitioners, and the IRS have relied on regulations that were issued in 1957, 24 years before the credit was even conceived of and enacted.

My specialty at KPMG Peat Marwick is representing clients before the IRS in tax controversies. On behalf of any number of clients, I have been involved in contentious audits involving the R&E

credit issue. These audit issues arise because of the lack of regulatory or procedural guidance from the IRS that has forced taxpayers on their own to address a number of complex, unresolved issues with respect to the computation of the credit. Inevitably, these controversies will continue until we can get that guidance.

The other important issue that must be addressed is structure. Our clients have faced a number of different problems arising from the structure of the credit, arising mostly from base period computations. In fact, many who conduct qualified research can't even claim the credit, due to structural problems with the manner in which the base period is computed.

Therefore, our recommendation to the subcommittee would be to provide as much flexibility as possible with respect to base period computations. Flexibility would improve the usefulness and effectiveness of the credit.

We also want to emphasize that the base period concept is indeed a good concept because it encourages increases in spending. At the same time, we would encourage the subcommittee to adopt some flexibility, such as the flat credit proposal just mentioned, that would allow companies to take full advantage and encourage research in the most meaningful manner possible.

In conclusion, the two points that need to be addressed, in our view, are permanence and flexibility.

Thank you.

[The prepared statement follows:]

KPMG Peat Marwick LLP

STATEMENT OF ROGER S. SIBONI
National Managing Partner
Information, Communications & Entertainment Practice of
KPMG PEAT MARWICK LLP

AS PRESENTED BY KENDALL C. JONES
PARTNER, KPMG PEAT MARWICK, NATIONAL TAX SERVICE

May 10,1995

As the National Managing Partner of the Information, Communications & Entertainment line of business of the international accounting and consulting firm of KPMG Peat Marwick LLP, I would like to take this opportunity to urge your support of H.R. 803 which would make the Research & Experimentation Credit a permanent provision in the Internal Revenue Code. Moreover, I encourage the adoption of a flexible credit provision which would more effectively stimulate investment in R&E.

Need for a Permanent Credit

The call for permanent enactment of the Research & Experimentation Credit is coming from all corners. The House of Representatives has twice passed a permanent extension (in 1989 and 1993) and again seeks to do so with H.R. 803, sponsored by Chairman Johnson, originally co-sponsored by Congressmen Matsui, Herger and Neal, and since co-sponsored by fifty additional Representatives. The Senate has acted through Senators Domenici and Danforth, who both proposed permanent extensions in 1994, and Senator Hatch, who called for permanent extension this year with S. 351. Recently, President Clinton has called for a permanent extension "to stimulate private investment." Nonetheless, permanence is not yet a reality, and I am concerned that in the heat of the legislative negotiations process, the R&E Credit may be extended temporarily rather than permanently.

Since 1986, the R&E Credit has been temporarily renewed six times and structurally modified four times. The uncertainty as to the duration of the R&E Credit coupled with the frequent modifications to the statutory provisions affecting the credit has resulted in the inability of businesses to plan their research activities. Specifically, a business that plans to conduct a long-term research project must speculate as to whether a temporary credit provision set to expire during its research project will, in fact, be extended. Even though the temporary R&E Credit has always been extended by Congress, sometimes retroactively, business forecasting and tax planning cannot be performed retroactively. The typical company is less likely to commit resources to long-term research activities if it is unable to reasonably estimate the after-tax costs of such projects. Thus, the repeated enactment of a temporary R&E Credit reduces the incentive to plan extensive R&E activities. Because research activities inherently involve risks, businesses that conduct research need certainty as to the tax consequences of their activities. Enacting a permanent R&E Credit would provide the certainty that is necessary to reasonably budget research activities.

Enacting a permanent provision also would reduce the frequency of legislative changes to the R&E Credit provision because every time a temporary R&E Credit must be extended, an opportunity exists for modifying the structure of the credit. The numerous modifications have made it difficult for the Internal Revenue Service to publish guidance on the mechanical application of the R&E Credit. To illustrate, the final regulations defining "research and experimental expenditures" were issued in 1994, thirteen years after the statute was originally enacted. In the interim, businesses,

tax practitioners and the Internal Revenue Service have relied on regulations originally issued in 1957, twenty-four years before the R&E Credit was first enacted.

By way of another example, a 1986 amendment to the R&E Credit excluded the development of software for internal use except as provided by the regulations. The Conference Agreement indicated that the development of internal use software should qualify if it is innovative, commercially unavailable, and involves significant economic risk in its development. Nine years later, there is still no regulatory guidance from the IRS, demonstrating how the repeated expiration dates and statutory changes have resulted in the inability of the government to keep up with the statute.

The lack of regulatory guidance has forced taxpayers to address a number of complex, unresolved issues when computing the R&E Credit. Inevitably, many of the positions taken by taxpayers in the absence of regulatory guidance will be challenged by the IRS, thus increasing the economic costs of taking the R&E Credit.

The statute has been extended six times, never more than three years and sometimes retroactively:

- The Economic Recovery and Tax Act of 1981 enacted the "Credit for Increasing Researching Activities" with a five year duration.
- The R&E Credit expired December 31, 1985.
- The Tax Reform Act of 1986 retroactively renewed the R&E Credit and extended it three years.
- The Technical & Miscellaneous Revenue Act of 1988 extended the R&E Credit one year.
- The Omnibus Budget Reconciliation Act of 1989 extended the R&E Credit one year.
- The Omnibus Budget Reconciliation Act of 1990 extended the R&E Credit one year.
- The Tax Extension Act of 1991 extended the R&E Credit through June 30, 1992.
- The R&E Credit expired June 30, 1992.
- The Omnibus Budget Reconciliation Act of 1993 retroactively renewed the R&E Credit, extending it to June 30, 1995.

In addition to the uncertainty regarding the duration of the provision, there remains continual doubt as to the structure of the R&E Credit, because along with these prospective and retroactive extensions have come four direct modifications to the R&E Credit supplemented by amendments to related provisions. For example:

- In 1986, "qualified expenditures" were more narrowly defined and the R&E Credit was reduced from 25% to 20% and made subject to the General Business Credit cap.
- The 1988 extension carried with it a reduction of R&E deductions by 50% of the R&E Credit for that year.
- OBRA 1989 changed the method of calculation of the R&E Credit and further reduced the allowable §174 deduction.
- OBRA 1990 repealed the special proration provision of OBRA 1989, but due to an as yet uncorrected technical error, taxpayers with a fiscal year ending in the fourth quarter of 1989 lost up to three months worth of credit.
- OBRA 1993, which extended the R&E Credit through June, 1995 modified the fixed base percentage for start up companies.

The R&E Credit was initially enacted in 1981 with a five year duration so that Congress could evaluate the operation of the credit. After thirteen years of observation and alteration, the concept of the R&E Credit remains as intended, a valuable incentive to encourage investment in the technological future of our country.

Who is Affected?

When discussing the subject of research and experimentation, thought may first turn to Silicon Valley, the home of many small high-technology start-up companies that have been responsible for numerous technological innovations in recent years. Yet it may surprise some that one of the largest high-technology commercial areas lies within Utah. While discussing research and experimentation, one may think of large Texas, California or Michigan defense contractors whose efforts have contributed to a strong, high-technology military. But technology-based industry is present throughout the entire country, affecting businesses and people in every state. The R&E Credit affects not only the large high-technology firms that often come to mind, but also offers great relief to small firms in the biochemical, pharmaceutical, agricultural, manufacturing, and service industries, as well as start-up businesses desperately in need of cash flow.

Do We Need a Research & Experimentation Credit?

The United States is not a global leader when non-defense research and experimentation is measured as a percentage of Gross Domestic Product; for instance, Japan and Germany both have a higher rate of non-defense research activities as a percentage of Gross Domestic Product. While other nations provide greater tax incentives to research, and in some instances government sponsorship of such research, the Internal Revenue Code, in certain cases, fails to promote R&E activities to the same degree as other countries. For example, small, high-technology start-up firms are often in need of capital at certain key points during R&E projects. In today's economic environment, such capital is often acquired by selling the business to a larger, cash-rich entity. However, with the fifteen year amortization period for intangibles provided by I.R.C. §197, domestic capital is often squeezed out of the market by foreign investors, many of whom are afforded by their governments shorter periods in which to write-off intangibles. The R&E Credit has helped to ease the cash flow issues faced by these capital-starved entrepreneurs.

Most economists agree that government support in the form of the R&E Credit is justified and desirable. From a macro-economic perspective, technology breeds productivity which in turn results in higher wages and a better standard of living. In fact, a recent study done by the Policy and Economics Group of KPMG Peat Marwick LLP, entitled "Extending the R&E Tax Credit: The Importance of Permanence," indicates that for every one dollar of R&E Credit, research expenditures increase by one dollar in the short run and by two dollars in the long run. This suggests that the credit has a beneficial impact on the gross domestic product. However, while investment in technology produces a long-term societal benefit, it does not necessarily produce an immediate return on investment to a company conducting the research due to the inherent risk in most innovative research activities.

The R&E Credit's societal benefit is derived from the fact that research conducted by any given company often has a spill-over effect on competitors and businesses in other industries. For example, the development of a new piece of machinery will result in the development of similar machinery designed to compete with the original. This competition benefits the consumer and society as a whole, but at the same time, it limits the profitability to the original inventor. Consequently, since businesses see limited returns on investments in developing new technology, there is a reduced incentive for funding research. The R&E Credit mitigates this natural economic disincentive to incur R&E expenditures.

The Impact on an Uncertain Economy

The impact of the R&E Credit on a thriving economy is obvious. During the boom of the early eighties when the R&E Credit was first enacted, research activity grew at a rate in excess of double the growth rate of the Gross Domestic Product. However, R&E is one of the first expenses to be cut during uncertain economic times, since the benefits of such expenditures are, by their very nature, long term. When a need to reduce short term expenses arises, expenditures which cannot demonstrate an immediate return are cut. The R&E Credit combats this phenomenon.

To illustrate, according to published reports, a large, high-technology firm recently released its first quarter earnings. Although investment in research for this firm had essentially remained constant, sales had dropped 20 percent. The result was an increased rate of investment in research and experimentation over the previous base which in turn will result in a larger credit. The R&E Credit will have the effect of easing an economically difficult period which may have otherwise resulted in a management decision to reduce the level of research.

Structure of the R&E Credit

The Subcommittee has also indicated a desire to examine the structure of the R&E Credit. Presently, the R&E Credit is based upon the increase in the rate of R&E expenditures over a base period. While this provides an incentive to increase R&E expenditures beyond the base, there is a debatable assumption that the base accurately reflects an appropriate minimum standard of expenditures on research. At both a macro-economic and a micro-economic level, change in the business community is continuous. Due to overall economic changes, R&E expenditures have dropped since the mid-1980's. Since the fixed base period can be static, it is not necessarily a relevant barometer for determining the value of an R&E Credit in a changing economy. As a result of the current structure, many entities that conduct valuable research cannot avail themselves of the R&E Credit due to the unique factors which may affect any single business.

Because the business environment is constantly changing in both macro-economic and micro-economic terms, I urge Congress to make the R&E Credit as flexible as possible. The existing increase-over-base concept should be retained. However, many companies have been unable to utilize the R&E Credit under the current structure due to the circumstances previously described. A remedy for the static base issue would be to allow businesses to elect from a menu of base period options. The base period election could provide alternatives to the taxpayer which would include a three or five year rolling average base period, akin to the base period as reflected in the statute as originally enacted in 1981. Another option would be to allow a business to reset the fixed base period to the most recent five years. Perhaps Congress could limit these elections to entities that have failed to qualify for the R&E Credit for two consecutive years. These types of options would allow enough flexibility with the R&E Credit to avoid the economic issues described above.

One additional alternative Congress should consider is an elective Minimum Flat Credit. Such a credit would be calculated using a flat-rate percentage applied to qualified R&E expenditures. A Minimum Flat Credit would always provide an incentive for R&E investment, regardless of the change in the company's circumstances. In other words, a Minimum Flat Credit would eliminate any anomalies created by the base period method.

CONCLUSION

The Research and Experimentation Credit should be granted permanent status within the Internal Revenue Code. The repeated short term implementation and frequent modifications breed uncertainty, which undermines the effectiveness of the R&E Credit. Furthermore, the R&E Credit should be modified to provide for a more flexible base period and a Minimum Flat Credit, so as to provide a continued incentive for investment in research and experimentation regardless of the change of circumstances which may effect a business.

Chairman JOHNSON. Thank you.
Mr. Gutman, welcome back.

STATEMENT OF HARRY L. GUTMAN, COUNSEL, KING & SPALDING, ON BEHALF OF GENERIC PHARMACEUTICAL INDUSTRY ASSOCIATION, NATIONAL ASSOCIATION OF PHARMACEUTICAL MANUFACTURERS, AND NATIONAL PHARMACEUTICAL ALLIANCE

Mr. GUTMAN. Thank you very much Madam Chair, members of the subcommittee. I am Hank Gutman, a partner in the law firm of King & Spalding, and I am appearing today on behalf of the Generic Pharmaceutical Industry Association, the National Association of Pharmaceutical Manufacturers, and the National Pharmaceutical Alliance.

The organizations that I represent support the permanent extension of the credit and urge that in connection therewith, the Congress take this opportunity to reiterate what has been its previously expressed intent that expenses incurred in the process of developing generic drugs have been and will continue to be eligible for the credit.

In a sense, it is fortuitous that this hearing is being held before the Oversight Subcommittee, because the issue that I am addressing is in part an oversight matter.

As claimed on their tax returns by manufacturers of generic drugs, the R&E credit plays an important role in maintaining an economically viable generic drug industry, and the maintenance of an economically viable generic drug industry is an important component in the quest to contain health care costs. Unfortunately, the IRS has taken the position that the developers of generic drugs are, per se, ineligible to claim the credit for their premarketing development costs and costs to secure FDA approval of their products as new drugs. Moreover, the Treasury Department, despite having testified in October 1994 before the Select Revenue Measures Subcommittee of this committee that generic manufacturers should be subject to a facts-and-circumstances determination to determine eligibility for the credit, has refused to exercise its policy prerogative in intervening with the IRS regarding the IRS' interpretation of the scope of the credit. As a result, a stalemate has been created by the Treasury's failure to follow through on its testimony, and the organizations now have to come to the Congress to ask for clarification of congressional intent that the credit is available for these expenses. This is the only alternative that these entities have other than costly litigation.

My statement describes in detail the process of developing and securing regulatory approval for a generic drug, and it also demonstrates how that process results in expenses that are eligible for the credit. In the balance of my time, I would like to flesh out why it is that we are here.

The IRS has taken the position that the developers of generic drugs are, per se, ineligible to claim the credit. The IRS position is based on a code provision that excludes from the credit expenses that are related to the reproduction of an existing business component from a physical examination of the business component or from plans, blueprints, details, specifications, or publicly available

information. The Service says that this exception applies to the expenses that are incurred in producing a generic drug.

That position of the IRS is unwarranted under the statute; it is factually inaccurate, and it is contrary to congressional intent. No. 1, a generic drug is not developed from a physical examination of a target drug or from publicly available information. Therefore, the process of development of a generic drug is not described by the statute.

No. 2, generic drugs may improve on the target listed drug in terms of shelf life and stability, to say nothing of lowering costs.

No. 3, the legislative history of the duplication exception makes it clear that the reproduction that is meant there is reverse engineering of an existing product, not the development of an alternative by original research and experimentation. The process of developing a generic drug does not in any sense constitute reverse engineering.

Finally, the FDA views generic drugs as new drug products.

Over the past number of years, members of the industry have attempted to persuade the IRS to reverse its position. In Treasury testimony, the Treasury basically adopted the industry position, but has not indicated any willingness to try to get the IRS to change its position. Consequently, members of the industry are in the frustrating position of being betwixt and between the Treasury and IRS and, consequently, have come before the subcommittee to ask that as this legislation goes forward that their concern be resolved.

I thank you.

[The prepared statement follows:]

STATEMENT OF

HARRY L. GUTMAN

On behalf of the Generic Pharmaceutical Industry Association, the National Association of Pharmaceutical Manufacturers, and the National Pharmaceutical Alliance

HEARING BEFORE THE

Subcommittee on Oversight
Committee on Ways and Means
U.S. House of Representatives
on the
Research and Experimentation Tax Credit

May 10, 1995

Madam Chairman and Members of the Subcommittee:

My name is Hank Gutman. I am a partner in the law firm of King & Spalding. I am pleased to appear before the Subcommittee today on behalf of the Generic Pharmaceutical Industry Association, the National Association of Pharmaceutical Manufacturers, and the National Pharmaceutical Alliance (the "Organizations"). The Organizations support the permanent extension of the research and experimentation tax credit (the "R&E credit") and urge that in connection therewith the Congress reiterate its previously expressed intent that the expenses incurred in the process of developing generic drugs have been, and will continue to be, eligible for the R&E credit.

This reiteration of Congressional intent is necessary because, as described in more detail below, the Internal Revenue Service ("IRS") has taken the position in a number of audits of generic drug companies, and in a technical advice memorandum, that developers of generic drugs are per se ineligible to claim the R&E credit for their premarketing development costs and costs to secure Food and Drug Administration ("FDA") marketing approval of their products as new drugs. Moreover, the Treasury Department, despite having testified on October 6, 1994 before the House Ways and Means Subcommittee on Select Revenue Measures that generic drug manufacturers should be subject to a "facts and circumstances" determination process to determine eligibility for the R&E credit, has refused to exercise its policy prerogative and intervene with the IRS regarding its interpretation of the scope of the credit. As a result of the stalemate that has been created by the Treasury's deliberate failure to follow through on its Congressional testimony, the Organizations are compelled to seek Congressional clarification as an alternative to costly litigation.

The balance of this statement first describes the issue in more detail. It then describes the process of developing and securing regulatory approval for a generic drug. Third, the statement discusses current law governing the allowance of the R&E credit, as well as the Congressional intent in enacting that legislation, and demonstrates that the process of creating a generic drug falls squarely within the ambit of expenses that

Congress intended to qualify for the R&E credit. Finally, the statement describes the alternatives now available to the Congress.

THE ISSUE

The IRS has taken the position that developers of generic drugs are per se ineligible to claim the R&E credit for their premarketing development costs and costs to secure Food and Drug Administration marketing approval of their products as new drugs. Internal Revenue Code Section 41(d)(4)(C)[1], which excludes from the credit expenses related to the reproduction of an existing business component from a physical examination of the business component itself or from plans, blueprints, details, specifications, or publicly available information, applies to these expenses. In rationalizing this conclusion, the TAM states,

> We believe the statutes and legislative histories ... are evidence that a generic drug is a duplication of another taxpayer's business component and the development of the generic drug is excluded from the definition of the term "qualified research" under Section 41(d)(4)(C) of the Code. TAM, p.9.

The TAM also states,

> It is our view that Congress considers generic drugs for approval under the ANDA procedure to be duplications of existing listed drugs. Drugs approved under the ANDA cannot improve on the target listed drug. TAM, p.10.

The conclusion stated in the TAM is unwarranted under the statute, factually incorrect and contrary to Congressional intent. First, as discussed more fully below, a generic drug is not developed from a physical examination of a target drug or from publicly available information. Thus, the process of development of a generic drug is not described by the literal language of the exclusion. Second, generic drugs may improve on the target listed drug in terms of shelf life and stability, to say nothing of cost. Third, the legislative history of Section 41(d)(4)(C) makes clear that "reproduction" means reverse engineering of an existing product, not development of an alternative by original research and experimentation. Again, as described in more detail below, the process of developing a generic drug product does not in any sense constitute "reverse engineering." Furthermore, FDA views generic drugs as new drug products.

In a number of meetings, the taxpayer to whom the TAM was directed attempted to persuade the IRS that the IRS position was incorrect. When it appeared the IRS would not change its position, that taxpayer, together with the Organizations, brought the issue to the attention of several members of Congress. Their effort culminated in a legislative proposal during the last Congress to clarify the application of the R&E credit to expenses incurred in developing generic drugs. Under the proposal, a generic drug would not be treated per se as a duplication of an existing business component. That is, Section 41(d)(4)(C) would specifically state that mere "duplication" of performance by an

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[1] Section references are to the Internal Revenue Code unless otherwise noted.

alternative product would not preclude the credit, so long as all the other conditions of Section 41 were satisfied. Therefore, taxpayers would be permitted to show, on a facts and circumstances basis, that the expenses incurred in conducting "research and experimentation" to produce a generic drug would qualify under Section 41.

The proposal was the subject of a hearing on October 6, 1994 before the Select Revenue Measures Subcommittee of this Committee. At that hearing, Glen Kohl, the Tax Legislative Counsel, took the position on behalf of the Treasury that

> the costs of developing a product that is new for a particular taxpayer can qualify for the credit even though other taxpayers already offer similar products. The only express limitation that applies to competing products is the exclusion for products developed by duplication . . . . The question of whether the development of generic drugs is qualified research or nonqualified duplication should be resolved on a case-by-case basis, using the same standards that apply to other products in taking into account all of the relevant facts and circumstances of each case. Hearing Record, p.9.

Congressman Payne asked Mr. Kohl "[I]s it the position of the Treasury that a generic drug is simply a duplication of a brand name drug?" Mr. Kohl responded, "[w]e think that for a generic drug you have to look at the facts and circumstances . . . . The Treasury Department is . . . saying . . . that the rules the Congress has enacted in the past should apply to the facts involved in developing a generic drug." Hearing Record, p.13. Later, Mr. Kohl noted that if the duplication issue were resolved favorably the credit would be available for the expenses of developing the generic drug. Id.

Treasury's description of the scope of the R&E credit is precisely what the industry has previously argued to the IRS. That position is completely consistent with the legislative history of the R&E credit.

Subsequent to the hearing, representatives of the taxpayer and the Organizations met with Mr. Kohl and Paul Kugler, Assistant Chief Counsel of the IRS in charge of Passthrough and Special Industries, in an attempt to resolve the inconsistency between the Treasury's statements and the holding of the TAM. In that meeting the scope of the duplication exclusion was discussed further. The question posed was whether, assuming all other conditions of the R&E credit were satisfied, the mere fact that a taxpayer's product achieved similar or the same performance or results as another's would by itself preclude the R&E credit under the duplication exception. (For example, would a synthetic diamond developed by qualifying research and experimentation be disqualified from the R&E credit?) Mr. Kohl stated that in his view it would not. In contrast, Mr. Kugler appeared to be of the view, with respect to generic drugs having an active ingredient which is composed of the same molecule as the brand product, that "bioequivalence" of drug performance as required by FDA law is fatal to the R&E credit under the duplication exception. Treasury and the IRS were asked to reconcile their apparent conflict, perhaps in the context of a revenue ruling project. Mr. Kohl indicated that the appropriate course of action was to pursue the matter further with the IRS.

On March 7, 1995, following Mr. Kohl's suggestion, representatives of the taxpayer and the Organizations met with Marlene Gross, Acting Deputy Chief Counsel of the IRS, Mr. Kugler and members of their staffs to discuss the matter further. At that meeting it was made clear that in the IRS view any generic drug product that (i) uses the same molecule of active ingredient as the corresponding brand product, and (ii) achieves the same therapeutic result as a brand name product is excluded from credit benefits by Section 41(d)(4)(C). It was also clear that Ms. Gross, who is in a position to overturn that IRS position, has no intention of so doing.

Virtually all of the generic industry products meet these two conditions. Moreover, despite contrary Treasury views, the IRS has made it clear that it will not change its position. It is thus highly likely that this position will be taken by IRS auditing agents against all companies manufacturing generic products to preclude the tax credit for such products. Therefore, the only avenues to resolution of this issue are litigation on the individual companies' tax deficiencies or legislation. Litigation is expensive and an unnecessary and unfair use of both taxpayer and Government resources in light of the statute, Congressional intent and Treasury's expressed views. Congressional reiteration of its original intent would eliminate the problem.

DEVELOPING AND SECURING REGULATORY APPROVAL FOR A GENERIC DRUG

A generic drug product is a new drug that can achieve the same therapeutic results as a brand name drug product and that can be substituted in prescriptions for the brand name product. What is new are the formula of inactive ingredients and the manufacturing and delivery process, and the research and experimentation of a generic drug manufacturer focuses on that.

A generic drug is developed by original research that delivers a known active ingredient using a newly developed and unique combination and ratio of inactive ingredients with the active ingredient. While a generic product usually uses the active ingredient having the same molecular structure as the brand product, the other physical characteristics of the generic's active ingredient, such as the polymorphic form, impurities, and particle size, often affect the bioavailability of the final drug. Such effects must be compensated for by variations (i.e., differences) in the inactive formula and/or manufacturing process of the generic product (from those of the brand), so that the generic product is "bioequivalent" to the brand within a tolerance allowed by the FDA. Such compensation (and other factors) usually result in the generic product having a different formula of inactive ingredients and a different manufacturing process from the brand.

The identity, type, nature, characteristics and sources of each inactive ingredient must be intensively researched and evaluated because each ingredient must serve a specific purpose in the final formulation. Variations in combinations and identity of inactive ingredients with the active ingredient affect performance, as measured by bioavailability. The quantity and ratio of the inactive ingredients must be developed in combination with the active ingredient in the generic manufacturer's own formulation to achieve a successful generic drug product. Every aspect of the formulation of any drug

product requires a delicate balance to achieve the desired result. Moreover, in addition to its own formulation, the generic drug manufacturer creates a new manufacturing process. That process described in detail the record of the October 6, 1994 hearing at pages 27 to 30.

A generic drug is, by definition, a new drug under the Food, Drug and Cosmetic Act (the "FDC Act"). 21 U.S.C. § 321(p)(1) (1988). It is a violation of the FDC Act to market a new drug in interstate commerce unless the FDA has approved a new drug application for the drug. 21 U.S.C. §§ 355(a), 331(d).

A generic drug may be approved through one of two types of new drug applications. The only difference between FDA approval standards for the two types of new drug applications, (1) full new drug applications ("NDA") and (2) abbreviated new drug applications ("ANDA"), is that ANDAs require bioequivalence data rather than clinical studies. Compare 21 U.S.C. § 355(b)(1)(A)-(F) with 21 U.S.C. § 355(j)(2)(A)(i)-(vi). Although an ANDA need not contain information on safety and effectiveness investigations, it is required to contain data demonstrating bioequivalence to a "listed" drug, i.e., a drug previously approved in a full NDA. If a generic drug company's initial tests do not demonstrate bioequivalence, the company must alter its formulation and/or manufacturing process and retest. The cycle of testing and revising the formulation is followed until (1) the tests indicate that the two products are bioequivalent within a range of plus or minus 10% to 20% with respect to the rate and extent of absorption or (2) the company fails to achieve its objective abandons its effort.

An ANDA must contain the same types of information concerning components, composition, manufacturing methods, samples, and labeling, as a NDA. 21 U.S.C. § 355(j)(2)(A)(i)-(vi) (1988). Because the FDA considers each new drug as a unique product, an ANDA is not required to compare its qualitative and quantitative formulation and manufacturing process with that of the listed drug's manufacturer. See 21 U.S.C. § 355(j)(3) (1988). Each new drug's performance depends on product-specific variables, including chemistry, manufacturing, and control factors that are specific to the manufacturer and its product.

For each new product it attempts to develop, a generic drug manufacturer goes through a process of experimentation to discover chemical properties of its source of the active ingredient, the dosage form technologies, combinations of inactive ingredients with the active ingredient, enclosures, and the equipment and manufacturing techniques that will produce a product that satisfies the ANDA performance test.

CURRENT LAW AND CONGRESSIONAL INTENT

Section 41(a), originally enacted as Section 44F in 1981, allows a tax credit for incremental "qualified research" expenses. Section 41(d)(4)(C), enacted in 1986, excludes from the definition of qualified research "any research related to the reproduction of an existing business component (in whole or in part) from a physical examination of the business component itself or from plans, blueprints, detailed specifications, or publicly available information with respect to such business component." The Treasury has yet to issue Regulations interpreting Section 41(d)(4)(C).

In many cases the IRS has conceded that, but for Section 41(d)(4)(C), the expenses of developing a generic drug would constitute qualified research expenses. However, it takes the position that Congress intended generic drugs submitted for approval under the ANDA procedure to be "duplicative" of existing drugs and therefore ineligible for the credit under Section 41(4)(C).

A generic drug is not a "duplicate" of an existing drug. The FDA has supplied a statement included is the record of the October 6, 1994 hearing at pages 30 and 31, explaining the FDA's requirements for approving a generic drug and the agency's interpretation of the status of generic drugs under the FDC Act. In the view of the FDA, "Because a generic drug's performance depends on product specific variables, the FDA considers each generic drug as a distinct product. ... A generic drug is, therefore, not the same drug as the one approved in the NDA."

Second, the activities listed in Section 41(d)(1)(4) are Congress' express illustrations of situations in which the credit will not be allowed because the research is not research in the experimental sense. A generic drug company's research activities are clearly experimental.

Thus, the scope of the exclusion of research related to reproduction of an existing business component from an examination is the critical question. Although the heading of Section 41(d)(4)(C) is "Duplication of Existing Business Component," as noted above the exclusion is for "research related to the reproduction of an existing business component (in whole or in part) from a physical examination of the business component itself or from plans, blueprints, detailed specifications, or publicly available information with respect to such business component." Because a generic drug company conducts its own original research to produce its own new business components, and does not copy existing products by cloning or reverse engineering, its research activities are eligible for the Section 41 credit under current law.

The legislative history on this issue specifically states, "The exclusion for duplication does not apply merely because the taxpayer examines a competitor's product in developing a different component through a process of otherwise qualified experimentation requiring the testing of viable alternatives and based on the knowledge gained from such tests." H. Rep. No. 841, 99th Cong., 2nd Sess. (1986), at II-75 (report of the Conference Committee on the Tax Reform Act of 1986, Pub. L. No. 99-514) [hereinafter "1986 Conference Report"]. The plain implication is that a taxpayer who examines a competitor's product that achieves a particular result and then, through experimentation, develops its own original product that duplicates the result achieved by the competitor's product, is entitled to the Section 41 credit. The original formulation and manufacturing process developed in connection with a generic drug are clearly new and different business components under the statute.

As explained in the 1986 Conference Report, duplication means producing something that exactly corresponds in composition and structure to an original. The House Ways and Means Committee Report explanation of the Section 41 changes in P.L. 99-514 (H.R. Rep. No. 426, 99th Cong., 1st Sess. (1985)) defines duplication as "The reproduction of an existing business item of another person from a physical examination of the item itself or from

plans, blueprints, detailed specifications, or publicly available information with respect to such item." Such duplication is referred to as "reverse engineering" in the 1986 Conference Report at II-75, restating the language from the Ways and Means Committee report cited above. A generic drug invention is not a duplicate or a reproduction, but is a new and different product; the new product duplicates results, but the product itself is not a duplicate or a reproduction.

The conclusion that generic drug research should be entitled to the credit is reinforced by the numerous references to drug products in the legislative histories of Section 41 and Section 174. In particular, the legislative history of Section 41 is crystal clear: "[C]osts of experiments undertaken by chemists or physicians in developing and testing a new drug are eligible for the credit because the researchers are engaged in scientific experimentation."

Moreover, it is also clear from various amendments to the FDC Act and from legislative history that Congress intended to encourage the development of generic drug products. For example, in 1984, Congress estimated that the availability of generic equivalents to brand name drug products approved after 1962 would save American consumers $920 million over 12 years. H.R. Rep. No. 857, 98th Cong., 2d Sess., pt. 1, at 17 (1984). Older Americans, in particular, would benefit, since they use almost 25% of all prescription drugs. Id. In addition, the federal government would save millions of dollars from the increased availability of generic drug products, since it purchases drugs through the Medicaid program and in veterans' and military hospitals. Id. at 17, 19. State governments would also save on drugs purchased through Medicaid. Id.

The availability of high quality, low cost alternatives to brand name drug products is desirable from both an economic and a public health standpoint. A generic drug product is usually sold for a significantly lower price than a brand name product. As mentioned above, the lower level of costs of research for generic drug developers compared to the development of a brand name drug results in lower credit compared to the major pharmaceutical houses, but it does not mean that the credit is not a major incentive for research.

The research required to develop a generic drug product consists of experiments related to the physical content, form and production process of the new drug, and, once a model has been developed, studies that compare the model's bioavailability with the bioavailability of the target brand name product. These studies are necessary in order to obtain FDA approval to market the generic drug product. 21 U.S.C. § 355(j)(2)(A)(iv) (1988). This process is less expensive, however, than the process would be if it also included the clinical studies necessary to show that a drug product is both safe and effective for the purpose for which it will be marketed. H.R. Rep. No. 857, 98th Cong., 2d Sess., pt. 1, at 19.

The potential for lower cost prescription drug products was one of the major factors that Congress discussed in connection with 1962 amendments to the Food, Drug, and Cosmetic Act. Drug Amendment of 1962, Pub. L. No. 87-781. The FDA established a procedure for submitting abbreviated new drug applications (ANDAs) for new generic versions of brand name products initially approved before enactment of the 1962 Amendment. See 21 C.F.R.

314.56 (removed by 57 Fed. Reg. 17950, 17963 (April 28, 1992)). In a further effort to expand the use of lower cost generic drug products and increase competition within the pharmaceutical industry, Congress enacted the Drug Price Competition and Patent Term Restoration Act of 1984. Pub. L. No. 98-417. This Act amended the Food, Drug, and Cosmetic Act by adding an ANDA procedure for generic equivalents to any FDA-approved drug product for which a valid patent was not in force. 21 U.S.C. § 355(j).

Congress clearly intended to encourage the development of generic drug products by enacting special FDA procedures. Excluding the costs of such development from eligibility for research-related tax benefits would flatly contradict that intent. Allowing research credits for brand name drug product development while denying such credits for generic drug product development would decrease the competitiveness of generic drug products, discourage the development of generic products, and increase the costs of generic products. Congress certainly did not intend the application of the R&E credit to produce such results.

CONCLUSION

It is frustrating to have to submit a statement to the Subcommittee and suggest that clarifying legislation is necessary because the Treasury will not exercise its tax policy authority and direct the IRS to interpret the statute in accordance both with its views as expressed before a Congressional Committee and with Congressional intent. The generic drug industry believes the result it seeks would ultimately be achieved through costly, time consuming litigation. Clearly these costs can be totally avoided if the IRS were to change its position. If it does not, clarifying legislation will be needed to resolve the issue.

Chairman JOHNSON. Thank you very much.
Mr. Steel.

STATEMENT OF GORDON M. STEEL, VICE PRESIDENT OF FINANCE AND CHIEF FINANCIAL OFFICER, XILINX, INC., SAN JOSE, CALIF.

Mr. STEEL. Thank you. Madam Chair and members of the subcommittee, good afternoon. I am Gordon Steel. I am the vice president of Finance and chief financial officer for Xilinx, Inc. I wish to thank the subcommittee for providing me the opportunity to testify on what I consider to be a technical flaw in the R&D credit definition as it applies to startup companies. This has often been referred to as the R&D equivalent of the "notch baby" issue.

By way of background, Xilinx is based in San Jose, Calif., and is the world's largest supplier of programmable logic semiconductors and related development systems software. Founded in early 1984, Xilinx, in late 1985, introduced a new programmable component, the field programmable gate array, or FPGA. This market is currently in the vicinity of $400 million in size, and is projected by some analysts to grow to some $1.5 billion by the end of this decade.

In the fiscal year that ended March 1995, Xilinx reported revenues slightly in excess of $350 million. We currently have approximately 1,000 employees of whom 750 are located in San Jose, Calif.; roughly 250 are employed in R&D. I note in passing that two companies represented on this panel are customers of ours.

Perhaps the most critical ingredient in fueling Xilinx's growth has been our substantial commitment to research and development in a variety of areas including software development, integrated circuit design, and manufacturing process engineering. The success of our R&D efforts has provided our customers with the industry's broadest range of products and with consistent predictable enhancements in performance and reductions in cost. It has also led to substantial increases in employment not only at Xilinx, where employment has grown more than 25 percent annually, but also for many of the firms with whom we work.

The pace at which new technology is introduced is accelerating rapidly. Accordingly, I am convinced that the commitment to research and development in the future will be even more critical tomorrow than it is today.

The implementation of the R&D tax credit has significantly expanded business commitment to R&D, not only for startup companies like Xilinx, but also for many major corporations as well. I am concerned, however, that a technical glitch concerning the definition of a startup company will severely limit or even eliminate the intended benefits of the R&D credit for those fast-growth corporations who commenced operations in 1984, 1985, or 1986. This includes companies such as Sierra Semiconductor of California, Sequent Computer Systems of Oregon, and Xilinx.

The explanation of this technical glitch is rather complex. Under the current approach, only qualified research expenses over a fixed base amount are eligible for the credit. In 1989 the computation of the fixed base amount was changed. Recognizing that companies in a startup mode will experience distorted relationships between re-

search expenses and gross receipts, Congress provided a special base for startup companies. Specifically, those companies that did not have gross receipts and qualified research expenses during at least 3 years of the base period beginning 1984 through 1988 were eligible to use a lower ratio of qualified research expenses to gross receipts.

This definition inadvertently introduces a problem, since those companies that were unfortunate enough to have started operations in 1984, 1985, or 1986 were ineligible to use the lower ratio. Xilinx's experience can highlight this point. As a result of our startup operations, which began in 1984, our year fixed base percentage of research to gross receipts is so high, at approximately 26 percent, that for the foreseeable future we will receive no R&D credit even though our R&D expenditures are approximately 13 percent of our aggregate revenues. Our inability to utilize the credit places us at a significant competitive disadvantage relative to many of our competitors. We understand, from speaking with some of those involved in putting the initial provision together in 1989, that this result was not intended.

The remedy to this technical glitch is straightforward—change the definition of a startup company to include any company with its first year of both research and development and revenues in 1984 or thereafter and to discontinue the 3-out-of-5-years' requirement.

This proposal has been endorsed by the AEA, American Electronics Association, which represents some 3,000 U.S. technology companies ranging from small startups to Fortune 100 firms. Based upon a revenue estimate given on this proposal when it was introduced in H.R. 11 in 1992, a bill that was vetoed by President Bush for reasons unrelated to this issue, the cost of this correction over 5 years was estimated to be under $50 million. I assume that the cost would be similar today.

On behalf of Xilinx and other similarly situated companies, I request that you seriously consider rectifying this problem through either a technical correction or through another form of R&D credit legislation.

Thank you again for providing me with this opportunity to share my views.

[The prepared statement follows:]

STATEMENT OF GORDON M. STEEL

VICE-PRESIDENT OF FINANCE,
CHIEF FINANCIAL OFFICER
FOR
XILINX, INC.
SAN JOSE, CALIFORNIA

RESEARCH AND DEVELOPMENT CREDIT

BEFORE THE HOUSE WAYS & MEANS COMMITTEE
SUBCOMMITTEE ON OVERSIGHT

UNITED STATES HOUSE OF REPRESENTATIVES

MAY 10, 1995

Madame Chair and Members of the Subcommittee. My name is Gordon Steel. I am the Vice-President of Finance and Chief Financial Officer of Xilinx, Inc. Xilinx is based in San Jose, California and is the world's leading supplier of complementary metal oxide semiconductor (CMOS) programmable logic and related development system software. In March 1995, the end of our most recent fiscal year, Xilinx had approximately 850 employees worldwide, the majority of whom are located in the United States. Approximately 35% of our total revenue comes from sales made to customers outside the U.S. Founded eleven years ago, Xilinx's last fiscal year generated revenues in excess of $350 million. R&D expenses over the past ten years exceeded $150 million. Approximately 28% of our employees are engaged in R&D in San Jose, California.

I wish to thank this Subcommittee for providing me this opportunity to testify on what I consider to be a technical flaw in the R&D credit definition of start-up companies. This glitch severely impacts Xilinx as well as a few other similarly situated companies -- such as Sierra Semiconductor from California and Sequent Computer Systems of Oregon -- and has resulted in our receiving reduced credits since the credit structure was changed in 1989. In its current form, the R&D credit provision would preclude us from realizing such credit, even though our research expenditures have increased substantially each year since the inception of the company.

Xilinx was founded in 1984 by three former Zilog employees with a product concept and future vision that the R&D credit was designed to encourage. As a result of our successful R&D efforts, Xilinx had revenues in excess of $350 million for our most recent fiscal year and offers the industry's broadest selection of programmable logic devices. The success of our R&D efforts has also facilitated our annual growth in revenue, which has averaged 48% per year since becoming a public company in 1990. The first field programmable gate array (FPGA), introduced in 1985, cost $55. Today, the same part sells for $5, due in part to the research and development undertaken by Xilinx.

Before the structure of the credit was changed in 1989 and the start-up definition was written in such a way as to exclude certain start-up companies, the R&D credit was critically important to Xilinx, even though we couldn't currently use the credit dollars because of the net operating losses associated with an R&D intensive start-up operation. The credit was very important to us, nonetheless, because it reduced our effective tax rate for book accounting purposes, which in turn reduced our cost of capital. As a result, I believe that it worked as an incentive to encourage Xilinx to spend more on R&D. I further believe that the technical glitch referred to as the "notch baby issue" which prevents us from obtaining any credit is incompatible with the objectives of the R&D credit and accordingly should be corrected.

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THE TECHNICAL GLITCH AFFECTING START-UP COMPANIES LIKE XILINX

Under the current credit, only qualified research expenses over a fixed base amount are eligible for the credit. In 1989, the base calculation was changed so that the base is now computed by multiplying the ratio of a company's qualified research expenses to gross receipts for 1984-1988 by the company's average gross receipts in the prior four years.

Recognizing that companies in a start-up phase will experience a distorted relationship between research expenses and gross receipts in their initial years of operation, Congress provided a special fixed base for start-up companies. Specifically, under those rules, a start-up company is defined as any company with fewer than 3 years of both gross receipts and qualified research expenses during the base period (1984-1988).

The problem with this three out of five year test is that it affords incompatible treatment for R&D credit for those companies that began during the early years of the base period, as contrasted with those starting in the later years of that period or thereafter. Indeed, any successful company that starts selling or starts R&D in the early years of that period would not have stopped R&D spending or sales during the later years of that period. As such, any company with its first year of both gross receipts and R&D falling in 1984, 1985 or 1986 will not be considered a start-up company even though its R&D to sales ratio could have been well beyond 100% during many of the base years. We understand from those involved in putting the provision together in 1989 that this result was never intended.

Xilinx is a perfect example of the inequity exacted by this rule. Like many companies in the early to mid 80's, Xilinx was funded by venture capital. This initial capital provided the founders of the company with the resources and time necessary to develop a marketable product without the immediate need to generate revenue to cover operating costs. As a result, in the early years of operations, the company's R&D as a percentage of sales was extremely high.

Xilinx incurred its first year of research costs in 1984 and its first year of gross receipts in 1985. As a result, our four year fixed base percentage is so high (approximately 26%) that for all of the foreseeable future, we will not receive any R&D credit, even though our R&D expenditures are approximately 13% of our total revenue. Our history and our R&D to sales ratio show that we were clearly in a start-up phase and thus, were the type of company Congress intended to include in future eligibility.

Without This Change The Credit's Incentive Value is Zero For Companies Like Xilinx: We agree that the best policy goal of the credit should be to cause companies to spend more on R&D than they otherwise would without the credit. This increased R&D effort is beneficial to society because companies will be better able to bring new and more efficient technologies to society. In Xilinx's case, however, the credit doesn't work because of the technical glitch.

The Credit Actually Puts Xilinx at a Competitive Disadvantage vis-à-vis its Competitors: More importantly, the current start-up company definition puts Xilinx at a significant disadvantage when we compete with an already established company or a new company. Either of these companies will get a 20% incentive for the extra R&D they spend in developing future generations of product. We, in contrast, will not receive such assistance.

The high technology industry has evolved and changed over the years since Xilinx began business. The overriding mainstay to survival in the marketplace is having a competitive edge. Without an R&D credit, Xilinx will be at a distinct disadvantage against our competitors due to our misfortune of having our first year of sales and R&D fall in 1985 rather than in 1987 or beyond.

PROPOSAL

The proposal that would solve this problem is very simple. It would be to change the definition of a start-up company to include any company with its first year of both R&D

and sales in 1984 or thereafter. Indeed, this revised definition was included in H.R. 11 in 1992, which was vetoed by President George Bush for reasons unrelated to this issue. At the time, the cost of this fix over 5 years was estimated to be under $50 million, a cost that I would expect to be similar today.

The American Electronics Association (AEA), which represents some 3,000 U.S. technology companies ranging from small start-ups to Fortune 100 firms, has also endorsed this technical correction. I hope that you will seriously consider fixing this problem through a technical correction or through another form of R&D credit legislation to ensure that start-up companies like Xilinx who began business during the early years of the fixed base period (1984-1986) are not penalized merely for the year they were formed.

CONCLUSION

Xilinx is a perfect example of an innovative, leading edge technology company doing business in a rapidly evolving marketplace in an industry where commitment to substantial expenditures of R&D is essential. We ask that you acknowledge the oversight that resulted from the 1989 tax legislation with respect to the start-up definition. We also ask for your support in making this technical correction.

I would be happy to answer any questions you may have.

Chairman JOHNSON. Thank you very much, Mr. Steel.

How do the rest of you react to Mr. Steel's proposal?

Mr. JERNIGAN. It doesn't impact AMD, but I think it is a worthwhile proposal.

Mr. KOSTENBAUDER. At Hewlett-Packard, it doesn't impact us. We weren't involved in starting up during that 1984–88 period.

Chairman JOHNSON. Because we have heard this from a number of folks, I appreciate your being specific.

In terms of the discussion that you have heard from Members and the preceding panels, would any of you care to comment on the issue of moving to a simpler, flat tax versus retaining the incremental tax with its complexities?

Mr. JERNIGAN. I would like to comment on that.

AMD would very much support a flat tax, because with our high R&D to sales ratio of 18 percent for the last 11 years and increasing every year, the present formula is just not working; and some companies are benefiting, others are not, and I think the flat tax is the only way to be equitable to all of the companies in the country that do R&D.

It is also simple, and I think that is very worthwhile.

Mr. KOSTENBAUDER. I make the observation that for at least the limited amount of revenue that is available to fund it, the more incremental, the higher the rate; and the higher the rate, obviously the more incentive impact there can be.

On the other hand, as my testimony described, the structure of the credit as it exists has the impact of providing, at least in a number of cases, significantly greater R&E credit in cases that really do not have a lot to do with a company significantly responding to the incentive, but rather a company perhaps switching the mix of businesses in which it is already operating, or conducting its business in some other way that impacts this relationship between revenue and sales.

The point was made on another panel that today's sales have a lot to do with yesterday's R&D. I think to the extent that there is a disconnect on that point, which isn't addressed structurally, certainly moving toward a flat credit would help to ameliorate that phenomenon. Although if we can figure out a way to do it, something that keeps more of an incremental nature has the benefit of a higher rate. We don't have the final answers, but we are pleased to try to work with everyone to resolve this conundrum.

Chairman JOHNSON. Mr. Jones, in your experience in dealing with the IRS, in some of these cases wouldn't a simpler tax structure make it far easier for companies to benefit from this tax? From what I have heard today, I don't see any way we can fix the definition of what is an eligible expense. Aside from the base period issue, what is an eligible expense is very unclear to me, and I should think it would be increasingly difficult for companies to allocate expenses to innovative work versus work.

Mr. JONES. It is hard to say. In dealing with IRS controversies, I don't think the controversies arise so much over the mechanical computations and looking at the base period, but from the definitional problem. I agree that is not something that we are going to solve today or that perhaps even Congress can solve.

Some would say I am being too generous to IRS, but I really feel that to a great extent their problem has been, as the law has changed, they too have had to deal with this uncertainty. I have heard it from some within the IRS that if it isn't going to be enacted on a permanent basis, why should we continue to focus resources on it? I think permanent enactment, in whatever form, would allow the IRS to give guidance to start taxpayers to work with the IRS and make sure that everyone understands the rules.

I don't necessarily think that a flat credit is going to be any simpler in terms of tax administration. Obviously, the IRS would have to give you their opinion on that. But I suspect most of the controversy, as you have suggested, will revolve around whether or not the activity is qualified or not.

Chairman JOHNSON. Why wouldn't it be much simpler?

Mr. JONES. It would be simpler in terms of the computations. That is not the issue with the IRS. The issues and the controversies I am involved in with the IRS are whether or not a certain type of activity even qualifies.

As we have indicated in our prepared statement, it took the IRS a couple of decades to get guidance out at the very base threshold level. But again, the controversies that we see are not necessarily over the computation. It is more or less over the definitional aspects of the credit.

I know that the gentleman to my left testified about the problems with generic drugs. That is a poignant example of what has occurred to date. It is a definitional problem.

Mr. GUTMAN. I agree. It is simple to do one mathematical process, multiplying a flat number times a base. It is not much more difficult to do some averaging and then multiply numbers against a base. What is really hard is to try to figure out what is eligible for the credit. That is where we have been having the difficulty.

That is what my statement was about and my particular situation, I suspect, is not one in isolation.

Chairman JOHNSON. I certainly would hope that you would give us your thoughts on how we could simplify the terminology, what is eligible. Because the staff has helped me understand why I thought this would be a lot simpler than it is clearly going to be. But I think that a much cleaner line, if we are going to make this permanent, we have to do a better job of clarifying what is in and what is out.

Your thoughts on that would be very useful.

[The information was not available at time of printing.]

Chairman JOHNSON. Mr. Steel.

Mr. STEEL. I would agree with the previous two speakers that the administration issue would not necessarily greatly simplify the efforts involved. The problems are more like in definition and implementation.

At the risk of displaying ingratitude to the earlier two speakers, who were kind enough to support my position for tax relief for companies in the 1984–88 timeframe, I would argue slightly differently with respect to the flat rate versus the incremental. My argument would go much along the lines of Randy Capps, a previous speaker.

I suspect most employees who are serving with a rapid-growth firm would favor an incremental approach, as it probably provides

the greatest incentive to them for their overall R&D commitment. As I am sure you are aware, the incremental approach has a cap for very rapid-growth companies, 10 percent of R&D. So, clearly, in those cases where a flat tax rate would be 10 percent, that would be break-even to us if we are experiencing very, very rapid growth, but I doubt that that would be the percentage that will be seen as wise by Congress.

I also point out that employment over the last 5 years or so has been driven not so much by the Fortune 100 companies but rather by the rapid growth of small and medium-sized companies who have leveraged high technology very successfully. I believe that the most direct incentive to that future growth is to reward those rapid-growth companies by providing some additional incentive in the R&D arena.

Mr. JERNIGAN. Madam Chair, I would like to give a different perspective on the simplicity issue. I think it is more than just a mechanical simplicity.

Having a flat rate credit would also have simplicity value as far as determining what R&D is for any kind of base period—whether 1984–88, what is the R&D per year? If you move the base to a current year, you still have to determine, what is the R&D for each of those years? You are going to have to determine the sales for each of those years; you are going to have to determine the current year's sales. This has complexity, and just going to a flat credit on the current year's R&D would be much simpler, in my view.

Mr. JONES. I might add, our experience again with the IRS has been that most of the fights are over the definitional issues; and those fights, I can assure you, consume an awful lot of time and professional fees that could be more appropriately devoted to research activities. So certainly to the extent that the subcommittee and Congress can help in giving the IRS some guidance to put a little more meat on the definitional bone, that would be most helpful, and we would be glad to help in any way possible.

Chairman JOHNSON. I will appreciate your comments on the new regulations that the IRS is about to publish in this area. They promise that they will be out very soon.

Mr. JONES. The allocation issues, yes.

[The following was subsequently received:]

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September 11, 1995

The Honorable Leslie B. Samuels
Assistant Secretary (Tax Policy)
United States Department of the Treasury
1500 Pennsylvania Avenue, NW
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The Honorable Margaret M. Richardson
Commissioner of Internal Revenue
Internal Revenue Service
1111 Constitution Avenue, NW
Washington, DC 20224

The Honorable Stuart L. Brown
Chief Counsel
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Attention: CC:DOM:CORP:T:R (INTL-0023-95)
Room 5228

Dear Sir or Madam:

We respectfully submit the following comments on the proposed regulations released May 19, 1995 (INTL-0023-95), governing the allocation and apportionment of research and experimental expenditures for purposes of determining taxable income from United States and from foreign sources.

The Treasury Department and IRS have long recognized the importance to the United States economy of research and experimental ("R&E") activities conducted in the United States, and the significant impact the existing provisions of the tax law governing the allocation and apportionment of R&E expenses (in determining a taxpayer's net income from United States and foreign sources) have on a taxpayer's R&E activities. The continued attention and concern of the Treasury Department and IRS is most recently reflected in the Treasury Department's report released May 19, 1995, "The Relationship Between U.S. Research and Development and Foreign Income" (the "Treasury Report"), and proposed regulations issued on that same date

(INTL-0023-95, hereinafter the "Proposed Regulations") prescribing rules governing the allocation and apportionment of R&E expenditures.

We note with approval that the Proposed Regulations would favorably modify existing regulations in several significant respects -- e.g., permitting a taxpayer to use three-digit SIC code categories in allocating its R&E expenses among its different activities, and increasing from 30 percent to 50 percent the percentage of R&E expenses that may be exclusively apportioned to income arising from the geographic location where the R&E activities are performed. Though the changes to existing regulations that are proposed are welcome, we believe certain additional modifications and clarifications are necessary to improve their efficacy. The amendments we propose are consistent with and follow upon the basic conclusions of the Treasury Report on the relationship between a taxpayer's United States R&E activities and its net foreign source income. In particular, we recommend the following changes to the proposed regulations:

1) to apply the "exclusive allocation" rule to a greater percentage of R&E expenditures,

2) to allow taxpayers to apply the optional gross income method of allocation without making a binding election,

3) to allow taxpayers the option of applying more focused SIC code categories,

4) to clarify the rules governing the treatment of a possessions corporation that has elected the profit split method under section 936(h)(5)(C)(ii) of the Code, and

5) to modify the proposed effective date in cases where a taxpayer otherwise would be unable to apply either these regulations or section 865(f).

1. The "exclusive allocation" percentage should be increased

We believe the "exclusive allocation" rule should apply to a greater percentage of R&E expenses attributable to activities performed in the United States. As the Treasury Report states, there is *considerable uncertainty* in determining the factual relationship between R&E expenses attributable to activities in the United States and foreign source income. Indeed, the Treasury Report states that there is a wide range of uncertainty, and its own estimate under the 50 percent exclusive allocation rule of the Proposed Regulations would result in an allocation of an amount that is within the range of estimates determined in the report but that is considerably above the lower end of that range.

For several reasons, we believe it is appropriate to adopt an exclusive allocation percentage that is at the lowest end of the "range of uncertainty" described in the Treasury Report. First, the Treasury Report rightly concludes that there is a high level of uncertainty in its determinations. Second, the Treasury Report's own estimation of the impact of the allocation under the Proposed Regulations would be significantly above the lower end of its range of uncertainty. Perhaps most importantly, the Treasury Report and the Congressional consideration of this issue all acknowledge the fundamental importance of United States-based R&E activities to the U.S. economy generally and the sensitivity of these activities to the effects of the tax law.

Specifically, for the reasons discussed below, we believe an exclusive allocation percentage of 64 percent is appropriate. First, a 64 percent exclusive allocation percentage has been statutorily endorsed by a prior Congress, which recognized that a reduction in U.S.-based R&E activities might adversely affect the competitive position of the United States. Congress also recognized that tax rules allocating an inappropriately large amount of R&E expense to foreign source income might unduly increase the tax cost of these activities to U.S. taxpayers -- notably, in the common circumstance where a foreign jurisdiction fails to allow the U.S. taxpayer a deduction for amounts allocated under U.S. rules to foreign source income, the foreign tax credit limitation available to the taxpayer would be inappropriately reduced. See section 11114(a) of Pub. L. 101-239; H.R. Rept. No. 247, 101st Cong., 1st Sess. 1205-1208 (1989); see also H.R. Rept. No. 795, 100th Cong., 2d Sess. 458 (1988) (A 64 percent threshold would be "consistent with tax and competitiveness policy while reducing somewhat the cost of [an earlier 67 percent threshold.]").

Second, the Baily-Lawrence study discussed in the Treasury Report and the Mansfield and Romeo data upon which it is based (also cited in the Treasury Report) conclude that a 64 percent exclusive allocation is an appropriate figure. We find the conclusions of the Baily-Lawrence study difficult to challenge, and are concerned with the arguments presented in the Treasury Report that attempt to rebut certain of the study's conclusions. For example, the Treasury Report states that the growing integration of the world economy has resulted in a decrease from that relied upon in the Baily-Lawrence study in the time lag between the introduction of technology in the United States and its introduction abroad. The Treasury Report then states that a shorter time lag would justify a smaller exclusive allocation percentage.

We are surprised by this conclusion of the Treasury Report, and find it internally inconsistent. Our own experience in high technology industries suggests that for many of the new technologies developed in the United States, the time lag between introduction in the United States and introduction abroad has actually *increased* (one of a number of examples is the fiber-optics industry). Thus, we do not believe that the Treasury Report's sweeping conclusion applies to industries in the higher end of the technological spectrum, though this determination

could be true with respect to certain industries that are not technology-intensive. The results described in the Treasury Report in this regard therefore are misleading. Moreover, the Treasury Report also states that there may be a *longer* lag in the application of R&E to foreign income than to domestic income. Though this statement appears directed at the lag in the realization of a return on technology outside the United States rather than the introduction of technology outside the United States, as a blanket statement it cannot be reconciled with the Treasury Report's determination that a globalized economy would lead to a shorter lag in the introduction of technology abroad.

The foregoing discussion illustrates a fundamental flaw in the Treasury Report and the evidence upon which it relies -- namely, the Treasury Report fails to distinguish between the application of R&E activities of high technology versus low technology industries. In the latter case, we believe that R&E expenditures are likely to be low. Including these industries in the figures relied upon in the Treasury Report's "Estimating the Domestic Return to U.S. R&D" results in grave distortions. To a certain extent the Treasury Report acknowledges these distortions, noting in its discussion of its principal and alternative methodologies that computing a return on domestic R&E is subject to "substantial error." The substantial error is illustrated by the very numbers the Treasury Report presents: it states that for 1990 the domestic R&E expenditures amounted to $63.5 billion, yet projects a range of return on this investment the low end of which is $104.8 billion, which we believe is an unusually modest projection. This projection may indeed factor too heavily the impact of low R&E industries that distort the true economic impact of R&E activities generally.

These uncertainties, inconsistencies, and possible substantial errors preclude any sort of substantial reliance on the range of results projected by the Treasury Report in its Table I. Instead, these figures must be adjusted to accommodate more fully the imperfections of the methods to avoid any undue economic impact on this critical U.S. activity. Accordingly, we believe the range of results should appropriately be expanded to include an allocation that utilizes an exclusive apportionment of at least 64 percent.

2. The optional gross income method election should not be binding

The Proposed Regulations dictate that the optional use of the gross income method of allocation is available only if the taxpayer makes an election *binding* on the taxpayer for all subsequent years unless revoked with the consent of the Commissioner. Prop. Reg. section 1.861-8(e)(3)(iii)(C). The requirement that the gross income method is available only by making a binding election represents a significant limitation on the ability of taxpayers to manage effectively the tax cost associated with their R&E expenditures. As noted above, the Treasury Report itself emphasizes the considerable uncertainty associated with the determination of the factual relationship between R&E activities conducted in the United States and foreign source

income. The dictate that taxpayers make a binding election for apportioning expenses under the gross income method forces taxpayers to commit to a position involving an allocation of expenditures for which the tax effects are profound, but whose policy base is uncertain. Moreover, this position is inconsistent with the Treasury Report's acknowledgment of this uncertainty. Accordingly, we recommend deletion of the binding election requirement, and propose instead to allow taxpayers annually to choose to apply the gross income method of allocation, which would be entirely consistent with the existing regulations.

3. Taxpayers should be permitted the option of applying more focused SIC codes

In dividing a taxpayer's R&E expenses among its different product categories, the Proposed Regulations provide that the taxpayer may determine its relevant product categories by reference to the three digit SIC code. This refines the provisions of existing regulations limiting the allocation to product categories determined by reference to the two digit SIC codes, and prohibiting any subdivision of categories. It is unclear from the language of the Proposed Regulations, however, whether application of the three digit code is mandatory where it is available, or if the two digit SIC code may otherwise be used. See seventh and eighth sentences of Prop. Reg. section 1.861-8(e)(3)(i)(B). It is appropriate to allow taxpayers flexibility in determining the specificity with which it may define its product categories. Therefore, we urge that the proposed regulations be clarified to permit taxpayers to choose whether to utilize the two digit SIC code.

Consistent with this view, it also would be appropriate to allow taxpayers that have information sufficient to allow them to define a product category by reference to a more specific SIC code (i.e., of four, five or greater digits) to choose those product categories, so long as the taxpayer's method is consistent from year to year and cannot be changed without the Commissioner's approval (as provided in the Proposed Regulations).

4. Taxpayers electing section 936 profit split method should be allowed corresponding adjustments

Stated broadly, Prop. Reg. section 1.861-8(e)(3)(i)(C)(2) provides that sales and gross income from products produced in whole or in part by a possessions corporation will not be taken into account in allocating and apportioning R&E expenditures. Prop. Reg. section 1.861-8(e)(3)(i)(C)(3) provides that the R&E expenses taken into account for purposes of these provisions must be reduced by the amounts included in computing the cost-sharing amount of the possessions corporation under section 936(h)(5)(C(i)(I). A reduction is necessary to avoid double counting the same expenses -- once in reducing the allowable income of a possessions corporation and a second time in reducing the parent company's foreign source income. Where the possessions corporation subsidiary has elected the profit split method prescribed in section

936(h)(5)(C)(ii), however, the proposed regulations appear to require this improper double counting. This arises because the combined taxable income computed under the profit split method must be reduced by 120 percent of the applicable product area research expenses incurred by the parent corporation. To the extent the allowable income of the possessions corporation subsidiary has been reduced pursuant to this rule, it would be appropriate for the Proposed Regulations to prescribe a rule reducing by a corresponding amount the R&E expenditures taken into account under Prop. Reg. section 1.861-8(e)(3).

5. Effective date should be amended to cover taxpayers otherwise excluded from both these regulations and section 865(f)

Section 864(f), which prescribes a 50 percent exclusive allocation rule under both the sales and the gross income methods, is generally applicable for a taxpayer's first taxable year beginning on or before August 1, 1994. The effective date of the Proposed Regulations is proposed to be for taxable years of a taxpayer beginning after December 31, 1995. See Prop. Reg. section 1.861-8(e)(3)(vi). The Proposed Regulations would allow a taxpayer to choose to apply the regulations instead to its taxable year beginning after December 31, 1994. In spite of this option, however, there remains a gap in timing under which a taxpayer whose taxable year begins after August 1, 1994 but before January 1, 1995 can apply NEITHER the provisions of section 864(f) NOR those of the Proposed Regulations. We therefore urge that the optional effective date of the Proposed Regulations be amended to extend to taxpayers whose taxable years began after August 1, 1994.

We appreciate the opportunity to offer comments on the Proposed Regulations. If you have any questions on these comments or would like to discuss them further, please contact Nilesh Shah (714-850-4317) or Larry DeLap (415-354-4016).

Respectfully,

KPMG Peat Marwick LLP

R. L. DeLap
Partner-In-Charge
Information, Communications, and Entertainment
Palo Alto

Nilesh K. Shah
Partner
Information, Communications, and Entertainment
Orange County

cc: Benedetta Kissel, Acting Associate Chief Counsel (International)
Joseph Guttentag, International Tax Counsel

Mr. GUTMAN. If I could make one comment, what I think you are hearing now and what you have heard this morning is an illustration of an important tension that exists in terms of trying to determine where the subsidy should go, how you determine whether it is going into the right place, and what is good and bad R&D.

To the extent that the statute is less rather than more precise, the IRS is the entity that has to make that decision, and the kinds of difficulties that we encounter in practice come because the IRS is forced to make these kinds of decisions. Sometimes they make them in a way that is correct, sometimes probably against congressional intent; but the difficulty, I think, is endemic and has to be faced. When you are going to legislate this kind of incentive you have to decide the scope of the incentive and then who will decide who is entitled to it. That is a difficult tension.

Chairman JOHNSON. I agree. I have seen this subcommittee go through those kinds of rethinking processes and struggle with those very issues. I would say that I want the subcommittee to go through that again on this.

On the other hand, because of the overriding importance of permanence, if there is one message that has been consistent, it is that we have to make it permanent; and it may be that because of our process, that will be all we can handle.

Mr. GUTMAN. I understand that. I think that is very important.

Chairman JOHNSON. I would like to bring to the committee a greater depth of discussion, or at least to the subcommittee.

I have a vote. I will run over and vote. If the last panel will assemble, I will be right back. Thanks.

[Recess.]

Chairman JOHNSON. Thank you very much. The hearing will reconvene.

Mr. Warren of TRW.

STATEMENT OF WILLIAM A. WARREN, VICE PRESIDENT, TAX, TRW, INC., CLEVELAND, OHIO, ON BEHALF OF ELECTRONIC INDUSTRIES ASSOCIATION

Mr. WARREN. Madam Chair, I am William Warren, vice president of Tax for TRW, Inc. TRW is a U.S. company, based in Cleveland, Ohio, which provides advanced technology and worldwide products for the automotive, space, and defense markets. I am here today representing the EIA, Electronic Industries Association. EIA represents over 1,000 members involved in the manufacture of electronic components for communications, industrial, government, and consumer end uses.

Today, U.S. companies compete on a global basis. A sound R&D tax policy is essential if U.S. companies are to compete effectively in the global marketplace. A permanent and effective R&E tax credit is essential to this policy, along with a permanent and fair resolution of the continuing controversy on the section 861 R&D allocation rules.

Since its inception, the R&E tax credit has provided a valuable economic incentive for U.S. companies to increase their investment in R&D in order to maintain their competitive edge in the global marketplace and to keep that R&D in the United States. On the margin, $1 of credit stimulates as much as $2 of additional R&D

spending in the long run, but this incentive effect is reduced because of lack of permanence.

At TRW, for example, we hold a leadership position on automotive safety systems such as air bags. The technology evolves rapidly and we compete with many non-U.S. companies. Our technology has led to major investments in the United States and thousands of U.S. jobs. However, despite our success to date, we must continue to invest in new R&D, and that new R&D must always have uncertain returns. Further, these high-risk R&D dollars must compete internally with other global capital budget opportunities. A permanent and effective R&E tax credit is needed in this environment.

For many EIA companies, the current credit is very effective. However, for some, such as TRW, structural reform would be very helpful. Space technology products, for example, used to be over 50 percent of our business; due to a downsizing of that segment, it is now about 40 percent. However, our historically high levels of space technology research continue to be reflected in the 1984–88 base period component of the credit calculation, which then restricts the deliverability of the credit on current automotive research.

Permanence is a first priority. However, we urge the Congress to address these structural reform needs.

The last issue is the allocation of U.S.-based research expense for Federal tax purposes. Under the section 861 regulations, first issued in 1977, U.S.-owned research-intensive companies with foreign operations are required to treat a significant portion of their U.S. R&D as if the research was, instead, conducted offshore for purposes of determining foreign tax credits. These arbitrary allocations create a bias against U.S.-based research and against U.S.-owned companies competing in this global environment.

In my experience, I have found no foreign country that allows a tax deduction for this research, which has, in fact, been conducted right here in the United States. Consequently, these U.S. companies effectively lose the benefit of a deduction for a significant segment of their U.S. R&D. Thus, American companies with U.S. R&D successfully competing in global markets are penalized. It also creates a competitive disadvantage for those U.S.-owned companies. U.S. tax rules should not put any U.S.-owned companies at such a disadvantage.

Absent relief, the only way to ensure full deductibility would be to perform the research in a foreign country. Of course, movement of such research abroad would be contrary to American economic interests, so the Congress has periodically and rightly imposed moratoriums on these 1977 rules.

Treasury has recently indicated that the 1977 rules in question are under review, which may lead to a permanent regulatory solution. However, if not, we ask this subcommittee to support a permanent legislative moratorium on the 1977 regulations using the so-called "64-percent solution" which has been previously enacted.

We appreciate the support of past congressional leadership in urging Treasury to resolve the section 861 R&D allocation issue. We urge the Congress to continue this support. We also need a permanent R&E tax credit to keep us competitive and, again, permanence is our No. 1 priority.

Thank you very much.

[The prepared statement follows:]

STATEMENT OF WILLIAM A. WARREN
VICE PRESIDENT, TAX, TRW, INC.
ON BEHALF OF ELECTRONIC INDUSTRIES ASSOCIATION

My name is William A. Warren. I am Vice President of Tax for TRW Inc. TRW is a U.S. company based in Cleveland, Ohio, which provides advanced technology products and services for the automotive, space and defense, and information markets on a worldwide basis.

I am here today representing the **Electronic Industries Association (EIA).** EIA is the industry's oldest, full service national trade association for the electronics industry, comprised of more than 1250 companies involved in the design, manufacture, distribution and sale of electronic components, equipment and systems for consumer, commercial, military, industrial and space use. Overall, the industry was responsible for more than $340 billion in factory sales in 1994, of which approximately 30% were export-oriented.

THE NEED FOR PERMANENT RESEARCH & DEVELOPMENT INCENTIVES

EIA believes that broad-based research and development incentives are good policy because they allow the marketplace to continue to drive the decisions as to what types of research and development are needed to help the nation stay competitive. R&D spending by U.S. firms has improved from the low levels of the late 1970s -- in part, we believe, because of the R&D tax credit's impact.

However, most of the major industrialized European and Asian countries as well as Canada offer various R&D related tax and financial incentives to assist native companies and to encourage foreign companies to locate R&D projects within their borders. These incentives lower the cost of R&D in these foreign countries and provide foreign companies competitive advantages over U.S. industries absent similar U.S. research and development incentives.

Indeed, EIA believes the high rates of R&D in other nations underscore the success these nations have had in fashioning successful national strategies --- including tax policies -- which advance their own technology-based industries' global competitiveness.

A sound research and development tax policy is essential if U.S. companies are to compete effectively in the global marketplace. A permanent and effective R&E tax credit is critical to this policy along with a permanent and fair resolution of the continuing controversy on the section 861 R&D allocation rules.

R & D TAX CREDIT

Since its inception the R&D credit has provided a valuable economic incentive for U.S. companies to increase their investment in research and development in order to maintain their competitive edge worldwide. A permanent R&D credit is critical to research-intensive companies such as those in electronics and to encourage U.S. industry to continue research and development activities in the U.S. rather than moving them offshore. On the margin, one dollar of the R&D credit stimulates as much as two dollars of additional R&D spending in the long-run. However, the incentive effect is reduced because of its lack of permanence; corporate decisionmakers are hesitant to factor in the credit's benefits due to the uncertainty over the long-term availability of the credit.

For example, at TRW, we hold a leadership position on automotive safety systems such as air bags. The technology for these products evolves rapidly, and we compete with many non-U.S. companies. Our technology has led to major investments in the U.S. and thousands of U.S. jobs. However, despite our success to date, we must continue to invest in new R&D and that new R&D will always have uncertain returns. Further, these new high-risk R&D dollars must compete with many other global capital budget opportunities within the company. A permanent and effective R&E tax credit is needed in this environment. This is true for all research-intensive, U.S. companies -- the credit can make the key difference.

For many EIA companies, the current credit is very effective; however, for some such as TRW, structural reform of the credit would be helpful. Space technology products used to be 50% of TRW's business. Due to downsizing of that segment, it is now about 40% and declining. However, our historically high levels of space technology research continue to be reflected in the 1984-88 base period component of the credit calculation which then restricts the deliverability of the credit on current automotive research. Permanence is a first priority. However, we urge the Congress to study and address these structural reform needs.

SECTION 861 ALLOCATION RULE

The last issue is the allocation of U.S.-based research expense for federal tax purposes. This issue spans an 18-year period of continuing controversy. Under the section 861 regulations, issued in 1977, U.S.-owned, research-intensive companies with foreign operations are required to treat a significant portion of their U.S. research expense "as if" the research was instead conducted offshore for purposes of determining foreign tax credits. These arbitrary allocations create a bias against U.S.-based research and U.S.-owned companies competing in a global environment. In my experience, no foreign country allows a tax deduction for this research which has, in fact, been conducted in the U.S. Consequently, these U.S. companies effectively and economically lose a deduction for the expenditures and are exposed to international double taxation to the extent they have excess foreign tax credits. In effect, a penalty is directed at those American companies performing substantial U.S. R&D and successfully competing in global markets; and yet both of these characteristics are highly beneficial to the U.S. economy and crucial to the growth of the high-tech companies that comprised EIA.

The only way to ensure that such expenses receive full deductibility would be to perform the research in the foreign country rather than in the U.S. Of course, movement of such research abroad is counterproductive to American economic interests. Recognizing this, the Congress has periodically imposed a complete or partial moratorium of the 1977 regulatory rules.

In addition to being an incentive for the movement out of the U.S. of U.S.-based R&D, the section 861 rule imposes a competitive disadvantage on those U.S. owned companies subject to the rules. Consider for a moment two multi-national companies, one U.S.-owned and one foreign-owned, and both investing in new R&D. To focus on the effects of 861, assume that the two companies have identical U.S. operations -- same investment, cost structure, products, technology, management, workforce, and the same level of U.S.-based R&D. The U.S.-owned operation would carry a higher tax burden than the foreign-owned U.S. operation due to section 861 and would be at a serious competitive disadvantage relative to the foreign-owned competitor -- a disadvantage which would grow each year solely as a result of the section 861 R&D allocation provisions. Further, to the extent the foreign-owned competitor conducts its research outside the U.S., it would again enjoy full deductibility in its home country. Again, by comparing this to the U.S.-owned company, we can see that a competitive disadvantage is created by U.S. tax rules against many U.S.-owned companies.

Surely U.S. tax rules should not put any U.S.-owned companies at such a disadvantage for R&D located in the U.S. Growing U.S. research is critical to U.S. economic growth. This requires a permanent and fair solution to the issue of the allocation of U.S.-based research expenses.

Thus, just to reiterate this key point, American companies with U.S. R&D, successfully competing in global markets, are penalized. It also creates a competitive disadvantage for those U.S.-owned companies relative to U.S. and foreign competitors not subject to these reallocations. U.S. tax rules should not put any U.S.-owned companies at such a disadvantage.

Absent legislative or regulatory relief, the only way to ensure that such expenses receive full deductibility would be to perform the research in a foreign country rather than in the U.S. Recognizing that movement of such research abroad is counterproductive to American economic interests, the Congress has periodically and rightly imposed a complete or partial moratorium on the 1977 rules.

Recently, Treasury has indicated that the 1977 rules in question are under review. We hope this will lead to a permanent, satisfactory regulatory solution which will eliminate the continuing controversy. Treasury certainly has the authority to resolve these issues, and we hope this committee and the congressional leadership will urge Treasury to exercise that authority. However, if a regulatory solution is not forthcoming, we ask this committee to support a permanent legislative moratorium on the 1977 regulations and impose the so-called "64% percent solution" which has been previously enacted in response to this issue.

CONCLUSION

In closing, on behalf of the Electronic Industries Association I thank you for the opportunity to testify before the committee today. EIA urges you and your fellow committee members to make permanent the R&E tax credit to keep us competitive in this global economy, to drive the creation of new technology and to make us a more productive America in the years ahead.

We also appreciate the support of the past congressional leadership in urging Treasury to resolve the section 861 R&D allocation issue administratively. We urge this Committee and the Congress to continue this support in order to find a joint and permanent solution to this continuing controversy.

Chairman JOHNSON. Thank you. Now my earlier mistaken comment is not relevant. We will be interested in your reaction to those regulations that are due out any time and see if they solve some of the problems. We have been led to believe they will.

Mr. WARREN. Would you like comments now or later?

Chairman JOHNSON. Later. They are due out any day. So when they come out, we will look at that before we decide how to move in this area. So if you will get back to us when you see that, that goes for anyone whose interests are in this area.

[The following was subsequently received:]

Electronic Industries Association

September 6, 1995

Commissioner Margaret Richardson
Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, D. C. 20114

Attn:CC:DOM:CORP:T:R (INTL-0023-95)

Re: Proposed Regulation Section 1.861-8(e)(3)

Dear Commissioner Richardson:

I am writing on behalf of the Electronic Industries Association (EIA) in response to the Notice of Proposed Rulemaking published in the Federal Register on May 24, 1995 (60 Fed. Reg. 27453) relating to proposed regulations concerning the allocation and apportionment of research and experimental ("R&D") expenditures for purposes of determining taxable income from sources within and without the United States (hereinafter referred to as the "Proposed Regulations").

EIA is the industry's oldest, full service national trade association for the electronics industry, comprised of more than 1250 companies involved in the design, manufacture, distribution and sale of electronic components, equipment and systems for consumer, commercial military, industrial and space use. Overall, the industry was responsible for more than $340 billion in factory sales in 1994, of which approximately 30% were export-oriented.

EIA commends Treasury's efforts in reexamining the proper allocation and apportionment of deductions for U.S. based R&D expenditures to foreign income, Treas. Reg. *Sec.* 1.861-8(e) (the "1977 Regulations"). There has been a great deal of uncertainty regarding the proper allocation and apportionment of deductions for U.S. based R&D expenditures to foreign income for more than 17 years. EIA supports a permanent resolution to this issue and believes that the Proposed Regulations represent a significant step in the right direction.

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EIA is pleased with a number of technical decisions underlying the Proposed Regulations including:

1) The decision to conform the treatment of the Section 936 and R&D allocation rules with the former section 864(f) rules, which provided that the R&D expenditures taken into account under the allocation rules should be reduced by amounts taken into account under either the cost sharing or profit split method computed under section 936(h)(5)(C). EIA believes that to fully achieve that result, the language of the Proposed Regulations should be explicitly modified to clarify that the reduction in R&E expenditures provided by Prop. Reg. S 1.861-8(e)(3)(I)C)(3) applies when the taxpayer has elected either the cost sharing or the profit split method under section 936(H)(5)(C).

2) EIA was pleased with Treasury's decision not to adopt the so-called "goose-to-gander" provision included in section 864(f) of the Internal Revenue Code of 1986, as amended (the "Code"), because that provision failed to recognized the greater impact of parent country affiliation on commercialization of R&D. EIA feels the rule in the Proposed Regulation achieves a more accurate matching of income and expense.

EIA believes that the Proposed Regulations are a substantial improvement over the 1977 regulations; however, EIA believes that the Proposed Regulations must be further improved, particularly to afford some tax relief to companies that utilize the gross income method. Absent such relief these companies effectively remain under the 1977 regulations.

EIA recommends that the Proposed Regulations be amended to address the following points. First, the exclusive apportionment provision applicable to the gross sales method of apportionment should be expanded to include the optional gross income method of apportionment. Second, taxpayers should not be required to make a binding election in order to use the gross income method. Third, although the proposed regulations adopt the three digit (rather than two digit) SIC code grouping rule allowing certain taxpayers to avoid allocating U.S. research to foreign income that is truly unrelated to that U.S. research, we suggest that further relief is warranted for taxpayers that have worldwide product lines in the same three digit SIC code but the products by geographical region are sufficiently different that non-U.S. R&D is both necessary and appropriate. For these taxpayers with significant non-U.S. R&D, further allocations of U.S. R&D is inappropriate. Lastly, that the effective date of the Proposed Regulations should be modified to cover fiscal year taxpayers whose taxable years begin after August 1, 1994 but before January 1, 1995.

1) In order for all taxpayers to avoid the potential of double taxation, allocations of R&D expenditures should be based solely on each taxpayer's facts and circumstances. The 1977 Regulations acknowledged that due to differences in facts and circumstances, some taxpayers

could reduce their exposure to double taxation by use of the gross sales method and others through use of the gross income method. Treasury should maintain consistency in this matter (i.e., such as Rev. Proc. 92-56, 1992-2 C.B. 409) by permitting those taxpayers on the gross income method to exclusively apportion their R&D expenditures on the same basis as taxpayers who use the gross sales method of apportionment.

2) The requirement in the Proposed Regulations that taxpayers who elect to apportion R&D expenditures on the optional gross income method are bound to use such method in future taxable years ignores both the aforementioned differences in taxpayers' facts and circumstances and the basic tenet espoused by both Treasury and the Congress of reducing taxpayers' exposure to double taxation by allowing the taxpayer the choice of either the gross sales method or gross income method. It is not even clear from the related Treasury study why the binding election rule was adopted in the proposed regulations. The gross income method is an acceptable method, and as such, should not be burdened by extra requirements not placed on the other acceptable method. Taxpayers should be entitled to choose each year the method of apportionment that best reduces the potential for double taxation. There is no tax advantage to taxpayers who elect to apportion R&D expenditures on the basis of gross income in one year and then on the basis of gross sales the next; such taxpayers are merely reducing the real cost of double taxation.

3) There is a lack of clarity of what is normally referred to as the facts and circumstances test for special allocations. EIA would suggest that you consider some method of relief in these areas both from a tax policy point of view as well as a competitiveness issue in a global marketplace. Specifically we propose that you address this area by defining a bright line test by three digit SIC code. Under this method, if the ratio of foreign R&D in a three digit SIC code of all foreign affiliates of a U.S. consolidated group over foreign affiliate sales in that SIC code exceeds 50% of the ratio of U.S. consolidated R&D in that SIC code to consolidated group sales in the same SIC code, then the U.S. consolidated group R&D would be exclusively (100%) allocated to U.S. source income. For any three digit SIC code group which does not meet this test, the normal 50% allocation followed by a sales method apportionment would then apply with comparable adjustments for taxpayers on the gross income method. Incorporation of this test in the regulations would permit taxpayers with extensive foreign R&D to properly avoid inappropriate allocations and apportionments of U.S. R&D to foreign source income.

4) The effective date of the Proposed Regulations is for taxable years beginning after December 31, 1995, although the regulation gives taxpayers the option of electing to apply the regulation for taxable years beginning after December 31, 1994. This effective date permits calendar year companies to apply the new regulation to their first taxable year beginning after the regulation's latest moratorium. Fiscal year companies whose taxable years begin after August 1, 1994, but before January 1, 1995, however, will suffer a one year "gap" during which

the 1977 Regulations will apply because the last extension of the moratorium on the 1977 Regulations applied to the first taxable year beginning on or before August 1, 1994. Section 864(f)(6) of the Code, as amended by the OBRA OF 1993.

Although the gap in the effective date provisions of section 864(f)(6) of the Code and the Proposed Regulations may only be an oversight, it needs to be corrected in order to prevent unfair results to fiscal year taxpayers whose taxable years began after August 1, 1994, but before January 1, 1995.

Thank you in advance for considering these comments.

Sincerely,

Donna Siss Gleason

Donna Siss Gleason
Director
Government Relations

Chairman JOHNSON. Mr. Sinaikin.

STATEMENT OF RONALD A. SINAIKIN, VICE PRESIDENT, TAXES, ALLIEDSIGNAL, INC., MORRISTOWN, N.J., ON BEHALF OF THE CHEMICAL MANUFACTURERS ASSOCIATION

Mr. SINAIKIN. Thank you, Madam Chair. I am Ronald Sinaikin, vice president of Taxes, AlliedSignal, Inc. I am appearing on behalf of the CMA, Chemical Manufacturers Association. I am going to summarize our written statement which I ask be included in full in the hearing record.

CMA welcomes this opportunity to present the views of the U.S. chemical industry on the research credit and on the allocation of research and development expenses. Our member companies represent more than 90 percent of America's productive capacity for basic industrial chemicals. Since 1991 the chemical industry has been the Nation's leading exporter with an estimated $50 billion in exports and a net trade surplus of $18 billion in 1994.

The chemical industry also ranks first among all U.S. manufacturers, with an estimated $18.1 billion in research and development spending in 1994. Our industry is an excellent example of how a strong research effort can develop new products and increased productivity to help overcome high labor and capital cost disadvantages.

Over time, the U.S. chemical industry has shifted from the production of basic commodity chemicals to the production of new specialty chemicals. Our industry has changed fundamentally, but it continues to provide high technology, high-wage jobs for more than 1.1 million U.S. workers and continues to be a strong, positive contributor to the U.S. trade performance.

On several occasions, CMA has supported extending and improving tax incentives for U.S. research and development. Without them, the competitiveness of both the United States and the U.S. chemical industry will decline. Other industrial nations offer strong incentives for research. The nations that develop new science and technology are normally those in which the new technology will first be employed and new plants and jobs will be created.

In addition, tax incentives for research offer an appropriate means to offset our competitive disadvantages of high labor and capital costs. Because research programs require long lead times, short-term extensions of the research credit will not achieve the full economic incentive of a permanent extension. At a minimum, Congress should adopt the permanent research credit now.

It should also be recognized that many companies that have strong research programs do not benefit from the present research credit. That is because the credit applies on an incremental basis. Our statement outlines several common fact patterns under which a company may not receive the research credit even though it maintains or increases its actual expenditures for research. We urge that you either amend the existing research credit or develop an alternative that will be available in those circumstances.

CMA also supports a permanent solution to the 18-year controversy over the Treasury's R&D expense allocation rules. The Treasury allocation rules work at cross-purposes with the research credit. A company can be eligible for the credit for its research ac-

tivities, but through the operation of the allocation rules, the company could effectively be denied a deduction for its research expenses.

The real economic effect of the allocation rules is to disallow any deduction for expenses of research conducted in the United States after the company is in an excess foreign tax credit position. For these companies, that could significantly increase the cost of conducting research in the United States. It makes no sense for the U.S. tax system to increase the cost of conducting research in America under any conditions.

CMA has testified since 1983 that the allocation regulations would undermine the effectiveness of the research credit. On at least seven occasions, Congress has enacted statutory moratorium to prevent allocation under the 1977 regulations. That is persuasive evidence that those regulations were ill advised. It is time to end the 18 years of controversy.

The most rational solution is for the U.S. Treasury Department to adopt a permanent allocation rule which, at a minimum, is similar to the most recent moratorium. In the alternative, Congress should enact legislation to achieve that result. Hopefully, we will see in a couple of days if Treasury did do that.

As a nation, America needs a strong private sector research establishment located in the United States. As we have testified, it is a source of the new technologies needed for continued economic growth and productivity that will provide new American jobs and higher living standards.

That concludes my oral statement. I will be happy to answer any questions.

[The prepared statement follows:]

STATEMENT OF
RONALD A. SINAIKIN
VICE PRESIDENT, TAXES
ALLIEDSIGNAL INC.
ON BEHALF OF THE
CHEMICAL MANUFACTURERS ASSOCIATION
ON THE
RESEARCH AND EXPERIMENTATION TAX CREDIT AND THE
ALLOCATION OF RESEARCH EXPENSES UNDER I.R.C. § 861
SUBMITTED TO THE
SUBCOMMITTEE ON OVERSIGHT
OF THE
COMMITTEE ON WAYS AND MEANS
MAY 10, 1995

SUMMARY OF PRINCIPAL POINTS

1) Research and development activities form the basis for new products, new markets, and increased economic productivity and living standards. Without these activities the United States becomes noncompetitive. The U.S. chemical industry – a high tech industry – would be particularly disadvantaged.

2) Other nations offer strong incentives for research, recognizing that these activities develop new science and technology. Research sites importantly influence the location of the plants in which the new technology will be employed.

3) CMA, accordingly, supports a permanent research tax credit. Because research programs require long lead times, short-term extensions of the research credit will not have the full economic incentive of a permanent extension.

4) Many industries that maintain important research and development programs do not benefit from the present incremental research credit. Congress should consider providing an alternative research credit for firms that conduct important research activities but that have not expanded those activities rapidly enough to qualify for the incremental research credit.

5) It also should be recognized that Treas. Reg. 1.861-8(e)(3) allocation rules work in direct opposition to the research credit. The practical impact of these regulations is to deny any deduction for research and development expenses after a company is in an excess foreign tax credit position.

6) National Science Foundation data continue to provide strong evidence that U.S. corporations are increasingly conducting research activities abroad.

7) It is time to end the 18 years of controversy over the allocation of research expenses between U.S. and foreign source income. Enacting a permanent allocation rule similar to the most recent moratorium would encourage the conduct of research activities in this country. This allocation should also be used to compute the allowable export incentive under the Foreign Sales Corporation ("FSC") provisions.

The Chemical Manufacturers Association (CMA) is a nonprofit trade association whose member companies represent more than 90 percent of the productive capacity of basic industrial chemicals within this country. We welcome this opportunity to submit the views of the U.S. chemical industry on (1) the importance of extending the research and experimentation tax credit ("research credit") before it expires on June 30, 1995, and the need to make the research credit permanent; and, (2) the need for a legislative solution for the current law rules requiring the allocation of expenses for research and development conducted in the United States between U.S. and foreign source income.

The U.S. chemical industry has a vital interest in the continuing search for ideas that will contribute to future expansion of productive capacity and new job opportunities in the United States. In 1994, our industry spent an estimated $18.1 billion for research, more than twice the amount expended in 1984. Moreover, the chemical industry ranks first among all U.S. manufacturing in research and development spending.

Over the past several years the U.S. chemical industry has been shifting from production of basic commodity chemicals toward production of new specialty chemicals that have evolved from continuing research and development. Research and development is also important to the U.S. chemical industry not only because it leads to the discovery of new, patent protected products, but because it leads to increased productivity which can overcome labor and capital cost disadvantages.

Although the fundamental nature of the U.S. chemical industry is changing, it continues to provide high-tech, high-wage jobs for more than 1 million U.S. workers. Moreover, the chemical industry continues to be a strong positive contributor to U.S. trade performance. As you know, our nation's merchandise trade balance in 1994 showed a $151.3 billion deficit, but exports of chemicals totaled $51.5 billion and exceeded imports by $18.3 billion. The strong export position of the U.S. chemical industry is, however, very much dependent on maintaining the productivity gains and stream of new products that derive from a large, effective private sector research effort.

On several occasions over the past 15 years, CMA has appeared before this committee to support the extension and improvement of tax incentives for U.S. research and development. The reason for these incentives is fundamental: research and development activities form the basis for new products, new markets, and increased economic productivity. Without these activities, the competitiveness of both the United States and the U.S. chemical industry will decline. For valid reasons, industrialized nations typically offer strong incentives for research and experimentation expenditures. Nations that develop new science and technology are normally those in which the new technology will be first employed and new plants and new jobs will be created. Since U.S.-based production has relatively high labor and capital costs, incentives for research and development offer the most appropriate means to offset these competitive disadvantages.

The research credit was enacted in 1981 to provide these incentives. But let us consider its history to date.

In 1981 the research credit equaled 25 percent of the excess of qualified research expenses in the current year over a moving average of such costs in the three prior taxable years. That research credit expired in December, 1985, but the Tax Reform Act of 1986 retroactively extended it on a modified basis through 1988. The 1986 legislation reduced the research credit rate from 25 percent to 20 percent, tightened the definition of qualifying expenses and modified the university basic research credit. The Technical Amendments and Miscellaneous Revenues Act of 1988 extended the research credit at 20 percent through December 31, 1989. The Act also reduced the deduction under Section 174 for qualified research expenses by an amount equal to 50 percent of the research credit for that taxable year. The Omnibus Budget Reconciliation Act of 1989 extended the research credit through December 31, 1990, replaced the moving average base period with a fixed-base percentage, and increased the Section 174 deduction disallowance to 100 percent of the research credit claimed for that year.

In the Omnibus Budget Reconciliation Act of 1990, Congress extended the research credit through December 31, 1991. The credit was subsequently extended to June 30, 1992, in the Tax Extension Act of 1991. Most recently, the Omnibus Budget Reconciliation Act of 1993 extended the research credit from July 1, 1992 until June 30, 1995.

CMA believes that the research credit should be improved and made permanent and has consistently expressed this position since 1981. The credit has contributed significantly to the continuation and expansion of research programs in general (cf. the 1994 study "Extending the R & E Tax Credit: The Importance of Permanence," by R.G. Penner, L.C. Smith, and D.M. Skanderson of the Policy Economics Group, KMPG Peat Marwick), and to the health and prosperity of the United States chemical industry in particular. The chemical industry has a vital interest in the continuing search for ideas which will contribute to future expansion in new technology, processes, production, and the development of new job opportunities in this country. The industry is in the forefront of U.S. research-oriented activities.

As a nation, we need a strong private sector research establishment. New technology is a primary source of continued economic growth and the basis for future increases in productivity and living standards. It is imperative that U.S. policy encourage domestic research activity. Research programs typically require long lead times, and the uncertainty about the future that results from short-term extensions of the research tax credit are detrimental to new research programs.

CMA believes that a permanent extension of the research credit would be a significant start on the job that needs to be done. At a minimum, Congress should adopt a permanent research credit now. Until that is done the real economic incentive the research credit can provide is substantially reduced.

It should be recognized that many companies that have made substantial contributions to the U.S. economy by maintaining strong research and development programs do not benefit from the present research credit. That is because the research credit currently applies on an incremental basis. The research credit is available only to the extent the taxpayer's current year ratio of research and development expenses to sales exceeds the same ratio for the base period 1984-1988.

Moreover, a company may not be eligible for the research credit even though it maintains or increases its actual expenditures for research. Regrettably, this can occur in several common fact patterns:

o A rapid increase in sales could adversely affect the company's ratio of research expenses to sales.

o A company develops new product lines that are not research intensive, thus lowering its overall ratio of research expenses to sales.

o To meet international competition, many companies have been forced to reduce their work force, thus lowering the overall ratio of research expenses to sales.

In each of these illustrations a company could be denied the research credit for reasons that are totally unrelated to its research efforts. Thus, Congress should consider providing an alternative research credit that would be available to these firms that conduct important research activities, but that have not expanded those research activities rapidly enough to qualify for the incremental research credit.

CMA also strongly believes that a permanent solution to the almost 18-year controversy over Treas. Reg. 1.861-8 (e)(3), the research and development ("R & D") expense allocation rules, is also critically needed. Treas. Reg.1. 861-8 (e)(3) works at cross purposes with the research credit because it provides a disincentive to conduct research in the United States.

Since 1981, Congress has adopted a statutory moratorium on seven occasions to prevent the allocation of R & D expenses between U.S. and foreign source income that

otherwise would be required under Treas. Reg. 1.861-8(e)(3). These include amendments to ERTA (1981), DEFRA (1984), COBRA (1985), Tax Reform Act (1986), TAMRA (1988), OBRA (1990), and OBRA (1993). In addition, in 1992 the chairmen of the House Committee on Ways and Means and Senate Committee on Finance urged the Treasury to deal with the unsatisfactory problems associated with the regulations administratively. Treasury responded, but only on a temporary basis. The OBRA 1993 moratorium expired December 31, 1994, for calendar year taxpayers. Therefore, the 1977 regulations must now be applied for future years unless a regulatory or legislative solution is adopted.

As indicated above, Treas. Reg. 1.861-8(e)(3) works at cross purposes with the research credit. Although Treas. Reg. 1.861-8(e)(3) deals with the ability of companies to use the foreign tax credit to offset a portion of their U.S. income tax, the real economic effect of the regulations is to disallow any deduction for research and development expenses after a company is in an excess foreign tax credit position.

In 1983, CMA testified at length on this issue before the House Ways and Means Subcommittee on Oversight. (Hearings, Subcommittee on Oversight, House Committee on Ways and Means, 98th Congress, First Session, October 26; November 3, 1983). At that time we stated that the operation of the regulations would undermine the effectiveness of the research credit and would significantly increase the cost of that research in the United States. Moreover, we indicated that this increased cost of conducting research in the United States would be an important factor that would be considered in choosing whether to locate new research facilities here or abroad. We continue to believe that the regulations are ill-advised.

On at least seven occasions, Congress has wisely enacted and renewed the moratorium on apportionment of research and development expenses under the regulations. Unquestionably, a principal reason for doing so was the concern that the operation of the regulations was to encourage multinational businesses to shift research activities abroad. (See "Description of Proposals Relating to Research and Development Incentive Act of 1987 (S.58) and Allocation of R & D Expenses to U.S. and Foreign Income (S.716)", Joint Committee on Taxation, JCS-6-87, April 2, 1987.)

In 1989, National Science Foundation data suggested that U.S.-based corporations were increasingly conducting research outside the United States. R & D spending abroad by U.S.-based companies increased significantly more than comparable spending in the United States. Although the falling dollar accounted for some of this increase, R & D spending rose much faster abroad even after adjusting for depreciation of the dollar. The latest available National Science Foundation data demonstrate this trend is continuing. Based on 1992 data, a 1994 National Science Foundation study found that total company financed R & D performed outside the U.S. was $10.0 billion, equivalent to 10.3 percent of total company R & D spending. This represents an increase from the equivalent 8.5 percent share in 1987 and 7.7 percent in 1982. ("Selected Data on Research and Development In Industry: 1992," National Science Foundation, 1994.)

One reason for this trend is that the effects of the excess foreign tax credit limitation on research are far more widespread than previously assumed. It is estimated that, as a result of the corporate tax rate reductions in the 1986 Act, almost 70 percent of all corporations have an excess foreign tax credit limitations problem. As recognized by the staff of the Joint Committee on Taxation in 1987:

> "On the other hand, the rate reduction potentially modifies the conclusions reached in the Treasury study. The percentage of worldwide income of U.S. corporations earned by firms in an excess foreign tax credit position is expected to rise as a by-product of the rate reduction, with the result that any change in the R & D allocation rules can now be expected to have a more uniform effect, from firm to firm, than was true in 1983. Consequently, the rate reduction tends to make any future revision of the R & D allocation rules a relatively more efficient mechanism for influencing taxpayers' R & D decisions. This is because the mechanism works only on taxpayers

> with excess credits, and it works better to the extent that it causes a greater proportion of taxpayers to face similar incentives for undertaking R & D in the United States."
>
> JCS-6-87, pg. 42.

CMA believes that it is time to end the 18 years of controversy. The most rational solution is for Congress to enact a permanent allocation rule similar to the most recent moratorium.

We should also point out that the allocation required under Treas. Reg. 1.861-8 (e)(3) is also required to be used to compute the allowable export incentive under the Foreign Sales Corporation ("FSC"). The FSC provisions were enacted to enable U.S. exporters to be more competitive in world markets. When the regulations are applied in this context, allocating research and development expenses to export income has the effect of reducing FSC export incentive. CMA urges that any solution on the allocation of research and development expenses should also apply to the Foreign Sales Corporation provisions.

As CMA has emphasized, continued and expanded research and development in the United States is vital to our nation's economic future. Domestic tax policies that increase the cost of research in the United States while other nations continue to offer strong incentives to conduct research in their countries will provide continued motivation to reduce U.S. research activities, or to locate the research activities of U.S. firms outside the United States.

As a nation, America needs a strong private sector research establishment located in the United States. Through research we gain new technologies which are the source of continued economic growth and productivity, and provide the basis for new jobs and rising living standards.

Chairman JOHNSON. Thank you.
Mr. Sample.

STATEMENT OF BILL SAMPLE, DIRECTOR OF FINANCIAL SERVICES AND PRINCIPAL ACCOUNTING OFFICER, LOTUS DEVELOPMENT CORP., CAMBRIDGE, MASS., ON BEHALF OF R&D CREDIT/SECTION 861 COALITION

Mr. SAMPLE. Madam Chairman and distinguished members of the subcommittee, my name is Bill Sample. I am director of Financial Services for Lotus Development Corp. I am appearing today on behalf of the R&D Credit/Section 861 Coalition and Lotus. On behalf of the Coalition and Lotus, I would like to thank you for convening this hearing and providing Lotus and the Coalition the opportunity to testify.

The Coalition is comprised of several prominent trade associations and their many members, including several thousand companies with several million employees. The industries represented by the Coalition are among the most dynamic and fastest growing industries in the United States.

Lotus was incorporated in 1982 and is headquartered in Cambridge, Mass. Lotus employs over 6,000 people worldwide, including over 1,600 product development professionals and support staff.

Lotus' initial product, 1–2–3, was the most popular PC application software product in the world. In 1989 Lotus introduced Notes and defined a new category of PC software, workgroup computing.

Lotus competes in an industry where products have a technological life cycle of 18 to 24 months, and accordingly, Lotus invests heavily in product development activities. Since 1982 Lotus has reinvested approximately 14 percent of its revenues in R&D, with cumulative R&D spending exceeding $900 million.

The R&D credit was enacted in 1981, the year before Lotus was born. The funding provided by the credit has helped nurture Lotus through its infancy, childhood, and now into its teen years. Lotus is a $970 million success story built on innovative technology, and the R&D credit has played an important part in our success.

Lotus is also an international software company deriving approximately 50 percent of its revenue from overseas. The 861 R&D allocation rules have caused excess foreign tax credits and double taxation for Lotus, and we feel permanent improved allocation rules are an important component of encouraging exports and domestic R&D.

Madam Chairman, like the other members of our Coalition, intensive research and development efforts are vital to Lotus' ability to compete in the worldwide market. We strongly and wholeheartedly urge Congress to make the R&D credit permanent. Opponents of the credit have argued that the credit is not needed since R&D activities will be done with or without a credit. Madam Chairman, this is simply not true. High technology companies will always conduct R&D, but more projects exist than can be funded and promising ideas must often be cut from the list. The R&D credit provides an effective financial incentive for companies to engage in R&D projects on the margin, which might otherwise be canceled. These projects have and will continue to produce important technological advances and may save companies and jobs.

At Lotus we are constantly reminded of the benefits of investing in R&D projects outside of our core competency. In 1984 sales of Lotus 1–2–3 were growing beyond all expectations, and the company was one of the darlings of Wall Street. A young Lotus software engineer had an idea for a new software product, completely unrelated to Lotus' current business. Lotus senior management were hesitant to fund a project outside of their area of expertise, but eventually agreed to fund some development work. In the late eighties, spreadsheet revenue growth slowed and cost pressures caused the company to cut back on some R&D projects. The availability of the R&D credit to fund incremental R&D helped save this project.

This research project culminated in the development of Lotus Notes. Today, Notes is the unquestioned key to Lotus' success and survival, supporting over 6,000 jobs.

Madam Chairman, there have been ongoing discussions on the various ways the credit's current structure might be improved in order to enhance its effectiveness. While the subcommittee has clearly heard from companies proposing modifications to the credit's current structure, it is critical for the subcommittee to understand that many companies prefer the existing structure and would probably suffer a reduced credit if the current structure is changed. The current credit works well for Lotus and many other members of the Coalition. We do not believe that Congress should delay permanence while studying whether the credit ought to be revised. Accordingly, we believe making the credit permanent should be the first priority.

Current section 861 R&D rules, which can cause double taxation to foreign earnings, create a disincentive to perform R&D activities in the United States and increase the costs incurred by U.S. companies to compete in international markets. This disincentive works against the R&D credit's objective to increase U.S. R&D.

The existing Treasury regulations promulgated in 1977 reduce the extent to which foreign taxes can be credited against U.S. taxes, thereby increasing the overall effective tax rate. Recently, the Treasury Department has indicated that the 1977 rules are under review and revised regulations are imminent. We hope this will lead to a satisfactory, permanent regulatory solution which will eliminate the continuing controversy. However, if a satisfactory regulatory solution is not forthcoming, we ask the Ways and Means Committee to support a permanent legislative moratorium on the 1977 regulations and make permanent the so-called 64-percent solution, which has been previously enacted in response to this issue.

Madam Chairman, in closing, on behalf of the Coalition, I again thank you for inviting us to appear before you today, and I would like to introduce into the record an association letter to Secretary Rubin on the section 861 R&D allocation rules. Thank you.

[The prepared statement and letter follow:]

STATEMENT OF BILL SAMPLE
DIRECTOR OF FINANCIAL SERVICES AND PRINCIPAL ACCOUNTING OFFICER
LOTUS DEVELOPMENT CORP., CAMBRIDGE, MASS.
ON BEHALF OF R&D CREDIT/SECTION 861 COALITION

May 10, 1995

I. Introduction

Madame Chairman and distinguished members of the Subcommittee:

My name is Bill Sample. I am Director of Financial Services and Principal Accounting Officer of Lotus Development Corporation ("Lotus"). I am appearing today on behalf of the R&D Credit/Section 861 Coalition ("Coalition") and Lotus.

On behalf of the Coalition and Lotus, I would like to thank you for convening this hearing and for providing Lotus and the Coalition the opportunity to testify and participate in your Subcommittee's consideration of whether the research and experimentation tax credit, commonly known as the R&D Credit, should be made permanent and on formulating a permanent and fair solution to the Section 861 R&D allocation rules.

A. R&D Credit/Section 861 Coalition

I am also very proud to serve as Chairman of the R&D Credit Working Group of the R&D Credit/Section 861 Coalition and to be able to represent today the Coalition members. The Coalition is comprised of several prominent trade associations and their many members, including the American Electronics Association, the Biotechnology Industry Organization, the Business Software Alliance, the Electronic Industries Association, the Information Technology Association of America, the Pharmaceutical Research & Manufacturers of America, and the Software Publishers Association. These trade associations represent several thousand companies who employ several million U.S. workers. The industries represented by the Coalition are among the most dynamic and fastest growing industries in the United States. The members of these associations are closely following this issue and are very strong and active supporters both of a permanent R&D Credit and a satisfactory solution to the Section 861 R&D allocation rules.

B. Lotus Development Corporation

Lotus Development Corporation was incorporated in 1982 and is headquartered in Cambridge, Massachusetts. Lotus is engaged in the development, manufacture, sale and support of software products and services that meet the evolving technology and business applications requirements of individuals, workgroups, and entire organizations. Lotus employs over 6,000 people worldwide, including over 1,600 product development professionals and support staff.

Lotus' initial product, 1-2-3, was the most popular PC applications software product in the world, and is credited with helping to redefine business financial analysis techniques. In 1990, Lotus introduced Notes and defined a new category of PC software, workgroup computing. Notes is widely acclaimed for its ability to enable workgroups to access, track, share, route and organize information across diverse computing platforms and geographical boundaries. Notes is the preeminent client-server product for developing and deploying groupware applications, including those found in customer service, sales, account management, and product development. Notes workgroup capabilities improve the responsiveness and flexibility of product development organizations by enabling companies to decentralize their product development organizations to be closer to their markets.

Lotus competes in an industry where products have a technological life cycle of 18-24 months and accordingly Lotus invests heavily in product development activities. As our products become simpler to use, they are much more difficult to develop. For example, the

original version of 1-2-3 contained a little over 100,000 lines of code; later Windows versions contained over 500,000 code lines. Since 1982, Lotus has reinvested approximately 14% of its revenues in R&D, with cumulative R&D spending exceeding $900 million. Lotus' R&D investment is increasing, with over 16% of 1994 revenues invested in R&D and an even higher percentage planned for 1995.

The R&D credit was enacted in 1981, the year before Lotus was born. Lotus has taken full advantage of the R&D credit in each of the first 13 years of Lotus' existence, and the funding provided by the Credit has helped nurture Lotus through its infancy, childhood, and now into its teen years. Lotus is a $970 million success story built on innovative technology, and the R&D credit has played an important part in our success. Lotus is an international software company deriving approximately 50% of its revenue from overseas. The Section 861 R&D allocation rules have caused excess foreign tax credits and double taxation for Lotus and we feel permanent, improved allocation rules are an important component of encouraging exports and domestic R&D.

II. Importance of a Permanent R&D Credit

Madame Chairman, like the other members of our Coalition, intensive research and development efforts are vital to Lotus' ability to compete in the worldwide market. We strongly and whole-heartedly urge Congress to make the R&D Credit permanent.

Since its inception, the R&D Credit has provided a valuable economic incentive for U.S. companies to increase their investment in research and development in order to maintain their competitive edge in the global marketplace. The software industry has invested heavily in R&D and the U.S. software industry currently maintains a majority market share in each of the world's major economies. A permanent R&D Credit is critical to fast-growing R&D intensive companies such as those in the software industry and the many other industries represented by the Coalition.

A permanent R&D Credit is also important to encourage U.S. industry to continue R&D activities in the U.S. rather than moving such activities offshore. Most of the major industrialized European and Asian countries (including the United Kingdom, France, Germany, Japanese and others), as well as Canada, offer various R&D-related tax and financial incentives to assist native companies and to encourage foreign companies to locate R&D projects within their borders. These incentives lower the cost of R&D in these foreign jurisdictions and provide foreign companies competitive advantages over U.S. industries absent similar U.S. R&D incentives. Foreign incentives have encouraged Lotus and other U.S. companies to locate some product development offshore, especially R&D targeted towards developing products for foreign markets. Communications products like Lotus Notes are making it easier to decentralize R&D activities. The U.S. must continue to offer R&D incentives to compete for such R&D projects.

III. Effectiveness of R&D Credit

The R&D Credit has been effective in achieving the goals for which it was originally enacted. A key finding of the 1994 study by Rudy Penner on behalf of the KPMG Peat Marwick Policy Economic Group entitled "Extending the R&E Tax Credit; The Importance of Permanence" is that the marginal effect of one dollar of the R&D Credit has been to stimulate one dollar of additional private R&D spending in the short-run and as much as two dollars of additional R&D spending in the long-run.[1/]

Opponents of the Credit have argued that the Credit is not needed since R&D activities will be done with or without a credit. Madame Chairman, this is simply not true for the software industry and the research-intensive industries represented by the Coalition. Although

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[1/] A copy of this 1994 study is submitted herewith for the record.

high technology companies will always conduct R&D, more projects exist than can be funded and promising ideas must often be cut from the list. The R&D Credit provides an effective financial incentive for companies to engage in R&D projects on the margin which, because of fiscal and other restraints, might otherwise be canceled. These projects have, and will continue to produce important technological advances and may save companies and jobs.

At Lotus, we are constantly reminded of the benefits of investing in marginal R&D projects outside of our core competency. In 1984, sales of Lotus 1-2-3 were growing beyond all expectations and the Company was one of the darlings of Wall Street. A young Lotus software engineer had an idea for a new software product completely unrelated to Lotus' current business. Lotus senior management, satisfied with their spreadsheet success, were hesitant to fund a project outside of their area of expertise, but eventually agreed to fund some development work if the engineer agreed to perform the R&D in a separate company so as not to interfere with Lotus' existing business. In the late 1980's, spreadsheet revenue growth slowed and cost pressures caused the Company to cut back on some R&D projects. Lotus' Vice President of Finance, who believed in the young engineer's product vision, used the availability of the R&D credit to fund incremental R&D to help save this project. This research project culminated in the development of Lotus Notes which first went on the market in 1989. Today, Notes is the unquestioned key to Lotus' continued success and survival, supporting over 6,000 jobs.

IV. Lack of Permanence Reduces Effectiveness of R&D Credit

Unfortunately, the incentive benefit of the current R&D Credit has been reduced because of its temporary and uncertain nature. In industry today, many product development initiatives and research projects have long lead times - often up to twelve years - and corporate decision makers are hesitant to factor in the Credit's benefits due to the uncertainty over the long-term availability of the Credit.

History has shown their hesitancy is well-founded. While the Credit has been renewed six (6) times since 1981, in one instance the Credit was renewed for only six months and on two occasions, the R&D Credit was actually allowed to expire only to be renewed retroactively. Further, adding to the frustration of American industry has been the fact that each time the Credit has been extended, its supporters have had to find revenue offsets to "pay for" the Credit which have become a permanent part of the Tax Code while the Credit remains only temporary. Supporters of the Credit feel they have had to "pay for" the Credit time and time again. This pattern of short-term extensions and lapses in the Credit followed by periods of uncertainty, reduces our ability to factor the R&D Credit into planning for long-term projects and reduces the incentive value and effectiveness of the R&D Credit.

V. R&D Credit Should Be Made Permanent

As our companies and markets mature, and competition increases, management faces the same dilemma over and over again. It must fund research, which like all research efforts is high-risk, over a long period of time while showing a profit to satisfy equity investors. Lotus, although it is only 13 years old and still undergoing major product transitions, is expected to produce significant profits. This requires management to reduce non-research costs, as well as make difficult and painful decisions on which research projects to fund and which to abandon. Given the lean budgets companies must maintain in order to remain competitive, R&D projects frequently are the swing items in the budget. Thus, management is constantly faced with the dilemma of whether it must drop some of its promising but higher risk R&D projects in order to meet financial targets. The R&D Credit is critical to companies and their long-term R&D projects and can make the difference in whether a particular project is retained or abandoned. In fact, this is precisely the result Congress intended when it first enacted the R&D credit - namely that the Credit would provide the additional incentive to encourage real increases in R&D.

Madame Chairman, that is why we need permanence. The R&D Credit can most effectively incentivize R&D projects if decisionmakers know the Credit will be there for the long run.

VI. Background on R&D Credit - A Good Investment

The R&D Credit was originally enacted in 1981 to provide an incentive for companies to increase existing levels of R&D in the United States. The Credit was designed to encourage industry to increase U.S.-based R&D and applies only to increases in domestic R&D above a specified base amount.

Under the current credit, taxpayers are eligible to receive a credit equal to 20% of Qualified Research Expenditures or "QREs", in excess of a specified base amount. The current year base amount is calculated by applying a historical R&D spending-to-revenue ratio (using 1984-1988 amounts) to the taxpayer's average revenues for the preceding four years. However, the base amount can never be less than 50% of current year QRE's, which will reduce the Credit's marginal rate to 10%. This effective rate is further reduced to 6.5% because corporations must reduce their tax deduction for R&D expenses by an amount equal to the credit. These rules effectively leverage the Credit such that a U.S. taxpayer must spend $100 on QREs to receive $6.50 of R&D tax credit. Conversely, the U.S. government is assured that every $1 of R&D credit given has generated over $16 of private sector QRE spending.

QREs are limited to domestic spending and consist primarily of salaries and wages paid for direct research, supervision and support of R&D, 65% of payments to outside contractors for R&D, certain R&D supplies, computer time sharing directly related to R&D activities, and basic research payments to universities. The Credit does not apply to indirect expenditures, R&D expenditures supporting R&D activities such as R&D facilities, overhead (or depreciation), computers, equipment, infrastructure, executive compensation or most employee fringe benefits. In fact, roughly one-half of a company's financial statement R&D does not qualify for the Credit thereby further limiting its effective rate and increasing its spending leverage. Hence, the Credit's narrow base limits abuse and applies only to direct, legitimate R&D efforts. Moreover, since the conduct of R&D is a labor intensive activity, the single biggest component of the credit base historically has been wages and salaries. These wages and salaries tend to be for engineers, scientists, researchers and their direct assistants, which generally comprise "middle-class" jobs, a critical sector of job growth in our economy. Further, certain developmental efforts such as those by pharmaceutical companies are often conducted at university hospitals, thereby assisting the university systems.

In short, the Credit allows the private sector (rather than the government) to determine where R&D dollars are most efficiently allocated, rewards incremental R&D domestic spending, is highly leveraged, encourages middle-class job growth, and enhances the ability of U.S. companies to compete in the global marketplace.

VII. Consideration of Structural Changes to R&D Credit

Madame Chairman, as you know, there have been ongoing discussions on the various ways the Credit's current structure might be improved in order to enhance its effectiveness, such as having a rolling base period, making the Credit a flat rate with no reference to a base period, reducing the maximum fixed base percentage limitation below 16%, and eliminating the 50% minimum base rule. Alternatively, some have suggested that the current structure be retained but that taxpayers be given a right to elect at specific times to change to alternate rules. While the Committee has clearly heard from companies proposing modifications to the Credit's current structure, it is critical for the Committee to understand that many companies prefer the existing structure and would probably suffer a reduced credit if the current structure is changed. One of the reasons for adopting the 1989 changes creating a fixed base percentage, and calculating the base period amount by reference to revenue, was to correct a

flaw in the original Credit's base period computation which caused companies to spend their way out of the Credit. Under the original three-year rolling average spending base amount computation, increased R&D spending also increased the base amount, making the Credit more difficult to obtain in future years. Since the purpose of the R&D Credit is to encourage increases in R&D spending, the base period mechanics should not penalize companies for increasing R&D spending. The 1989 changes generally corrected this problem. The current Credit works well for Lotus and many other members of the Coalition. This important feature of the current Credit should be retained.

Many options exist as to the various changes that could be made to the credit; however, there is no consensus at this time as to which, if any, would be beneficial to the business community. The Committee would find general support for reversing the various limitations imposed on the original Credit during the 1980's, such as the reduction in the credit rate from 25% to 20% and the loss of the deduction for Section 174 expenses. Changing the Credit mechanics within a fixed revenue limitation, however, will be a difficult process creating winners and losers which deserves careful consideration and study.

We do not believe that Congress should delay permanence while studying whether the Credit ought to be revised. Accordingly, we believe making the Credit permanent should be the first priority.

VIII. Section 861 R&D Allocation Rule

The current Section 861 R&D allocation rules, which can cause double taxation of foreign earnings, create a disincentive to perform R&D activities in the U.S. and increase the costs incurred by U.S. companies to compete in international markets. We strongly believe the current regulatory rules adversely affects U.S. R&D and the R&D Credit; the rules discourage the same U.S. R&D the R&D Credit is intended to encourage.

The Section 861 R&D allocation issue relates primarily to the allocation of U.S.-based research expense for purposes of computing a U.S. company's foreign tax credit. The issue spans an 18-year period of continuing controversy, focused on Treasury Regulation section 1.861-8(e)(3). Under this regulation, issued in 1977, U.S.-owned, research-intensive companies with foreign operations are required to treat a significant portion of their U.S. research expenditures "as if" such research was conducted offshore for purposes of determining foreign tax credits. This reduces the extent to which foreign taxes can be credited against U.S. taxes thereby increasing the overall effective rate of tax (U.S. and foreign) to which such companies are subject and possibly causing double taxation of foreign source income. These allocation rules are arbitrary and create a bias against U.S.-based research and U.S.-owned companies competing in a global environment. In my experience, no foreign country allows a tax deduction for this research which has, in fact, been conducted in the U.S. Consequently, these U.S. companies effectively and economically lose a deduction for the expenditures and are exposed to international double taxation to the extent they have excess foreign tax credits. In effect, a penalty is directed at those American companies performing substantial U.S. R&D and successfully competing in global markets; both of these characteristics are highly beneficial to the U.S. economy and crucial to the growth of the high-tech companies in the Coalition. As a multinational company competing in a variety of foreign markets, Lotus, as are many other Coalition members, is adversely affected by the existing R&D expense allocation rules.

Based on the existing regulation, the only way to ensure that such expenses receive full deductibility would be to perform the research in a foreign country rather than in the U.S. Recognizing that this is counterproductive to American economic interests, and works against the primary objective of the R&D tax credit - to increase U.S. R&D, Congress has periodically imposed a complete or partial moratorium on the 1977 regulatory rules. The most recent moratorium expired December 31, 1994 for calendar year taxpayers, so it is important that this problem be corrected as soon as possible.

In addition to being an incentive for the expatriation of U.S.-based R&D, the Section 861 rules impose a competitive disadvantage on those U.S.-owned companies subject to the rules. Consider for a moment two multi-national companies, one U.S.-owned and one foreign-owned, and both investing in new R&D. To focus on the effects of 861, assume that the two companies have identical U.S. operations -- same investment, cost structure, products, technology, management, workforce, and the same level of U.S.-based R&D. The U.S.-owned company would be subject to a higher tax burden than the foreign-owned U.S. operation due to Section 861 and hence would be at a serious competitive disadvantage relative to the foreign-owned competitor -- a disadvantage which would grow each year solely as a result of the Section 861 R&D allocation provisions. Further, to the extent the foreign-owned competitor conducts its research outside the U.S., it would again enjoy full deductibility in its home country. In short, these U.S. tax rules impose a competitive disadvantage against many U.S.-owned companies.

I believe we would all agree that U.S. tax rules should not put U.S.-owned companies at a competitive disadvantage for locating R&D in the U.S. This requires a permanent and better solution to the issue of the allocation of U.S.-based research expenses.

Recently, the Treasury Department has indicated that the 1977 rules in question are under review. We hope this will lead to a satisfactory permanent regulatory solution which will eliminate the continuing controversy. Treasury certainly has the authority to resolve these issues, and we hope the Ways and Means Committee and the Congress will urge Treasury to exercise its authority. However, if a regulatory solution is not forthcoming, we ask the Ways and Means Committee to support a permanent legislative moratorium on the 1977 regulations and make permanent the so-called "64% percent solution" which has been previously enacted in response to this issue.

IX. Conclusion

Madame Chairman, in closing, I again thank you for inviting me to appear before you today. I and the many other members of the R&D Credit/Section 861 Coalition look forward to working with you and the other members of the Subcommittee in achieving permanence for the R&D Credit and in finding a satisfactory permanent solution for the R&D expense allocation rules.

R&D CREDIT/SECTION 861 COALITION

September 6, 1995

Commissioner Margaret Richardson
Internal Revenue Service
1111 Constitution Avenue, N.W.
Washington, D.C. 20224

Attn: CC:DOM:CORP:T:R (INTL-0023-95)

Re: *Proposed Regulation § 1.861-8(e)(3)*

Dear Commissioner Richardson:

We, the R&D Credit/Section 861 Coalition, are writing in response to the Notice of Proposed Rulemaking published in the Federal Register on May 24, 1995 (60 Fed. Reg. 27453) regarding the proposed regulations concerning the allocation and apportionment of research and experimental ("R&D") expenditures for purposes of determining taxable income from sources within and without the United States (hereinafter referred to as the "Proposed Regulations").

The Coalition is comprised of several prominent trade associations including the American Electronics Association, Chemical Manufacturers Association, Electronic Industries Association, Information Technology Industry Council, National Association of Manufacturers, Pharmaceutical Research & Manufacturers of America, Software Publishers Association and the U.S. Chamber of Commerce.

The Coalition applauds Treasury's efforts in reexamining the proper allocation and apportionment of deductions for U.S.-based R&D expenditures to foreign income and, specifically, Treas. Reg. § 1.861-8(e) (the "1977 Regulations"). For over 17 years, there has been uncertainty regarding the proper allocation and apportionment of deductions for U.S.-based R&D expenditures to foreign income. It is time for a permanent resolution, and the Coalition believes that the Proposed Regulations represent a significant step in the right direction.

In addition to being pleased with the attempt to permanently resolve this issue, the Coalition is also pleased with a number of technical decisions underlying the

Proposed Regulations. First, the Coalition agrees with the decision to adopt the three digit (rather than two digit) SIC code grouping rule. The three digit grouping rule allows taxpayers to avoid allocating U.S. research to foreign income that is truly unrelated to that U.S. research.

Second, the Coalition applauds the decision not to adopt the so-called "goose-to-gander" provision included in Section 864(f) of the Internal Revenue Code (the "Code") because that provision had failed to recognize the greater impact of parent country affiliation on commercialization of R&D. The rule in the Proposed Regulation, therefore, achieves a more proper matching of income and expense.

Finally, the Coalition is pleased with Treasury's decision to conform the treatment of the Section 936 and R&D allocation rules to the former Section 864(f) rules. Those rules provided that the R&D expenditures taken into account under the allocation rules should be reduced by amounts taken into account under either the cost sharing or profit split method as computed under Section 936(h) (5) (C). Nonetheless, the Coalition believes that to fully affect this result, the language of the Proposed Regulations should be modified to explicitly clarify that the reduction in R&E expenditures provided by Prop. Reg. § 1.861-8(e) (3) (i) (C) (3) applies when the taxpayer has elected either the cost sharing or the profit split method under Section 936 (h) (5) (C).

Although the Coalition generally subscribes to the approach taken in the Proposed Regulations and believes they are a substantial improvement over the 1977 Regulations, the Coalition believes that the Proposed Regulations can be improved in the following ways.

First, in light of the historical response to the 1977 Regulations, the exclusive apportionment provision applicable to the gross sales method of apportionment should be expanded to include the optional gross income method of apportionment. Second, the election of the optional gross income method of apportionment should not be binding on a taxpayer for subsequent years but, rather, should be available on a year-by-year basis. Finally, the effective date of the Proposed Regulations should be modified to cover fiscal year taxpayers whose taxable years begin after August 1, 1994 but before January 1, 1995. Each of these recommendations are discussed below.

Extension of Exclusive Apportionment to Optional Gross Income Method

The 1977 Regulations provide that in lieu of apportioning the deduction for R&D expenditures on the basis of gross sales, taxpayers may annually elect to apportion the entire deduction on the basis of gross income. The 1977 Regulations, however, do not permit taxpayers to apportion R&D expenditures exclusively to the place of performance if they elect to use the optional gross income method. The Proposed Regulations continue this approach, notwithstanding that Treasury concluded in its own related Study that, in order to increase the fairness of the 1977 Regulations, the Proposed Regulations should reduce the allocation of domestic R&D to foreign income by 25 percent in comparison to the 1977 Regulations. For taxpayers that consistently use the gross income method, the Proposed Regulations do not provide any material relief from the 1977 Regulations. The Proposed Regulations, therefore, fail to fulfill Treasury's own goal.

In order for taxpayers to avoid the potential of double taxation, allocations of R&D expenditures would have to be based solely on each taxpayer's facts and circumstances. The 1977 Regulations acknowledged that due to differences in facts and circumstances, some taxpayers could reduce their exposure to double taxation by use of the gross sales method and others through use of the gross income method. For the Treasury to allow those taxpayers who utilize the gross sales method to reduce the risk of double taxation by 25 percent as compared to the 1977 Regulations but not allow those who utilize the gross income method to reduce their risk by a comparable amount, is patently unfair. The Proposed Regulations have broken the equilibrium of the past 14 years between those taxpayers who use the gross sales method and those who use the gross income method. This equilibrium should be retained by permitting those taxpayers who use the gross income method to exclusively apportion their R&D expenditures on the same basis as taxpayers who use the gross sales method of apportionment.

The Internal Revenue Service should treat the two methods consistently, especially since it treated the methods consistently in Rev. Proc. 92-56 and the Administration expressed support for a revenue-neutral extension of Section 864(f) of the Code which provides for Tax Proposals Before the House Committee on Ways and Means, 104th Cong., 1st Sess.42 (statement of Leslie B. Samuels, Asst. Secretary (Tax

Policy, Dept. of the Treasury). Thus, the Coalition notes that the Treasury has publicly supported consistent treatment of the gross sales and gross income methods.

The Optional Gross Income Method Should Not Be Binding

As noted above, the 1977 Regulations acknowledged that due to differences in facts and circumstances, some taxpayers could reduce their exposure to double taxation by use of the gross sales method and others through use of the gross income method. The requirement in the Proposed Regulations that taxpayers who elect to apportion R&D expenditures on the optional gross income method are bound to use such method in future taxable years nonetheless, ignores such factual differences. Neither the Proposed Regulations nor the Treasury Study gives any indication why the binding election rule was adopted. Regardless of the level of exclusive apportionment ultimately provided by the regulations for the gross income method, it is nevertheless an acceptable method, and as such, should not be burdened by extra requirements not placed on the other acceptable method. Taxpayers should be entitled to choose each year the method of apportionment that best reduces their potential for double taxation. There is no tax advantage to taxpayers who elect to apportion R&D expenditures on the basis of gross income in one year and then on the basis of gross sales the next; such taxpayers are merely reducing the real cost of double taxation.

Modification of Effective Date Provision

The effective date of the Proposed Regulations is for taxable years beginning after December 31, 1995, although the regulation gives taxpayers the option of electing to apply the Regulations for taxable years beginning after December 31, 1994. This effective date permits calendar year companies to apply the new regulation to their first taxable year beginning after the regulation's latest moratorium. Fiscal year companies whose taxable years begin after August 1, 1994, but before January 1, 1995, however, will suffer a one year "gap" during which the 1977 Regulations will apply because the last extension of the moratorium on the 1977 Regulations applied to the first taxable year beginning on or before August 1, 1994. Section 864(f)(6) of the Code, as amended by the OBRA OF 1993.

Although the gap in the effective date provisions of Section 864(f)(6) of the Code and the Proposed Regulations may only be an oversight, it needs to be corrected in order to prevent unfair results to fiscal year taxpayers whose taxable years began after August 1, 1994, but before January 1, 1995.

Thank you for considering these comments.

Sincerely,

American Electronics Association
Chemical Manufacturers Association
Electronic Industries Association
Information Technology Industry Council
National Association of Manufacturers
Pharmaceutical Research & Manufacturers of America
Software Publishers Association
U.S. Chamber of Commerce

Chairman JOHNSON. Thank you very much, Mr. Sample.
Ms. Kaye.

STATEMENT OF TRACY ANNE KAYE, ASSOCIATE PROFESSOR OF LAW, SETON HALL UNIVERSITY SCHOOL OF LAW, SETON HALL UNIVERSITY, NEWARK, N.J.

Ms. KAYE. Thank you, Madam Chairman, and members of the Subcommittee on Oversight, for the opportunity to testify before you today. I am Tracy Kaye, an associate professor of law at Seton Hall University School of Law. I appear before you today to comment on the 861 R&D allocation rules.

I am here to urge Congress to take into consideration international economic policy and the effects of any proposals on the competitiveness of U.S. corporations. U.S. international tax policy needs to minimize tax deterrents to productive international economic activities and needs to avoid creating a hostile tax environment.

The reality of the global marketplace is that our tax system must interact with other countries' tax systems. Therefore, Congress should consider other nations' tax systems when designing our own. The United States uses a foreign tax credit system to eliminate international double taxation. This credit is limited, however, to the U.S. tax liability on foreign-source taxable income. To compute this limitation, sourcing of income and allocation of expense rules are necessary to determine foreign-source taxable income.

These rules generally aim to ensure that income subjected to foreign tax is treated as foreign source. Any allocation of expense to foreign-source gross income reduces foreign-source taxable income and, correspondingly, the foreign tax credit limitation. Thus, too great an allocation to foreign-source income leads to double taxation.

The R&D expense category has proven to be one of the most difficult to allocate, primarily because R&D expenses are capital in nature. Although these costs are incurred to earn future income, code section 174 permits a current deduction.

Most expenses are allocated to domestic or foreign-source income on the basis of their factual relationship to the production of particular gross income. Because R&D expenses do not generally relate to gross income earned in the current period, the matching principle is not helpful.

The regulations contain detailed rules for the allocation and apportionment of R&D expenses. Since 1981, the regulation has been modified eight times by legislation, which lets you know there is a problem. What is this problem? Well, conflicts between the sourcing of income and allocation of expense rules of the United States and foreign countries lead to economic double taxation. No foreign country grants a deduction for R&D performed in the United States just because a U.S. regulation allocates that expense to foreign-source income.

What do other countries do? Many countries use a tracing approach, allocating expenses incurred within the residence country to domestic-source income, and expenses incurred outside the country to foreign-source income.

Other countries follow generally accepted accounting principles for attributing items of expense to categories of gross income. To my knowledge, no country has R&D allocation rules similar to the U.S. rules. Generally, the allocation of expense rules of foreign countries are much less developed and often relying on a facts-and-circumstances determination. This absence of sophisticated 861 allocations in foreign countries means that foreign-owned multinationals enjoy a tax advantage over the foreign activities of U.S. multinationals.

The sourcing of income and expense allocation rules should be designed to achieve three goals—the elimination of double taxation, the elimination of undertaxation, and the distribution of tax jurisdiction among sovereign governments in some mutually agreeable fashion. The only solution that will simultaneously satisfy all three goals is international consensus on a set of rules for the sourcing of income and the allocation of expenses. Therefore, I urge Congress to encourage the Treasury Department to take the lead in the negotiation of such a harmonized set of rules.

Until such an international agreement is reached, however, I propose that the allocation of R&D expense to foreign-source income should only occur where deductible in the foreign jurisdiction.

The tax planning of multinationals focuses on the reduction of worldwide tax liability, not just U.S. tax liability. Therefore, given that U.S. corporate tax rates are often lower than most other jurisdictions, there is already a built-in incentive to claim all allowable deductions against foreign-source income aggressively so as to reduce the foreign tax burden. To the extent U.S. multinationals are operating in jurisdictions with lower tax rates than the United States, it will be necessary to develop a mechanism to allocate the R&D expense allowable as a deduction in the foreign jurisdiction.

I believe this departure from U.S. tax policy is justified because of the unique income measurement problems that exist with respect to R&D expenses. The U.S. unilateral resolution to this issue has led to double taxation for many U.S. multinationals. This is admittedly a second-best and should not be a permanent solution.

Once again, the only way to satisfy the international goals of designing a system that avoids overtaxation and undertaxation is to harmonize the rules for the sourcing of income and the allocation of expenses.

Thank you.

[The prepared statement follows:]

Testimony of

TRACY ANNE KAYE
Associate Professor of Law
Seton Hall University School of Law

Before the

COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON OVERSIGHT
UNITED STATES HOUSE OF REPRESENTATIVES

May 10, 1995

Introduction

Thank you, Chairman Johnson, Congressman Matsui, and Members of the Subcommittee on Oversight, for the opportunity to testify before you today. I am Tracy Kaye, an Associate Professor of Law at Seton Hall University School of Law. I appear before you today to comment on Treasury Regulation Section 1.861-8(e)(3), the research and experimentation expense allocation rules, often referred to as the "861 R&D allocation rules."

I am here to urge Congress to take into consideration international economic policy and the effects of any proposals on the competitiveness of U.S. corporations. U.S. international tax policy needs to minimize tax deterrents to productive international economic activities and avoid creating a hostile tax environment.

Applying the United States income tax system to international transactions is inherently complex because cross-border transactions do not have a single geographic source. Thus, in order to avoid either double taxation or undertaxation of these transactions, a coherent set of rules for determining the geographical source of taxable income must be developed. To achieve a coherent system of international taxation, the United States should take note of how other countries tax international income.[1] The reality of the global marketplace is that our tax system must interact with other countries' tax systems. Therefore, Congress should consider other nations' tax systems in designing our own.

Historical Background

The United States taxes the worldwide income of its corporations and uses a foreign tax credit system to eliminate international double taxation. The foreign tax credit is limited to the United States tax liability on foreign source taxable income to ensure that the foreign tax credit does not reduce the U.S. corporation's taxes on its domestic income. To compute this limitation, sourcing of income and allocation of expense rules are necessary to determine foreign source taxable income. The rules generally aim to ensure that income subjected to foreign tax is treated as foreign source. Any allocation of expense to foreign source gross income reduces foreign source taxable income and correspondingly the foreign tax credit limitation. Thus, too great an allocation to foreign source income leads to double taxation; too little leads to undertaxation of the cross-border income.[2]

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[1]Charles I. Kingson, The Coherence of International Taxation, 81 Colum. L. Rev. 1151, 1153 (1981).

[2]Department of the Treasury; International Tax Reform, An Interim Report (January 1993).

The research and development (R&D) expense category has proven to be one of the most difficult to allocate, primarily because R&D expenses are capital in nature. Although these costs are incurred to earn future income, code section 174 permits a current deduction as an incentive for the performance of R&D. Most expenses are allocated to domestic or foreign source income on the basis of their factual relationship to the production of particular gross income. Because R&D deductions do not generally relate to gross income earned in the current period, the matching principle of Treasury regulation 1.861-8 is not helpful.

The Section 1.861-8 regulations, published in 1977, contain detailed rules for the allocation and apportionment of R&D expenses. These rules require government mandated R&D expenses to be allocated to the gross income arising in the country where the benefit is expected to be derived. The remaining R&D expenses must be allocated to the product categories to which they relate or to all categories if the expenses cannot be related to a particular product category.[3] Allocation is followed by an apportionment procedure whereby a fixed percentage of R&D (at present 30 percent) is apportioned to the geographic source where over half of the taxpayer's deductible research expenses are incurred.[4] The remaining expense is apportioned on the basis of gross sales.[5]

Alternatively, a taxpayer may use an optional gross income method to apportion the non-government mandated expenses on the basis of relative amounts of gross income from domestic and foreign sources.[6] Unfortunately, it is actually even more complicated than the above description. Since 1981, this regulation has been modified eight times by temporary legislation to permit an exclusive apportionment (ranging from 50 percent to 100 percent) to the actual place of performance of the R&D.

Problem

Conflicts between the sourcing of income and allocation of expense rules of the United States and foreign countries lead to economic double taxation. No foreign country grants a deduction for R&D performed in the U.S. on the basis of U.S. regulatory allocation of that expense to foreign source income. Many countries use a tracing approach, allocating expenses incurred within the residence country to domestic source income and expenses incurred outside the country to foreign source income. Other countries follow generally accepted accounting principles for attributing items of expense to categories of gross income.[7]

To my knowledge, no country has R&D allocation rules similar to those required by the United States. Generally, the allocation of expense rules of foreign countries are much less developed, often relying on a facts and circumstances determination.[8] This absence of sophisticated 861 allocations in foreign countries means that foreign-owned multinationals enjoy a tax advantage over the foreign activities of U.S. multinationals.[9]

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[3]Treasury Regulation Section 1.861-8(e)(3)(i)(A).

[4]Treasury Regulation Section 1.861-8(e)(3)(ii)(A).

[5]Treasury Regulation Section 1.861-8(e)(3)(ii)(B).

[6]Treasury Regulation Section 1.861-8(e)(3)(iii).

[7]Department of the Treasury, *supra* note 2 at 31.

[8]International Fiscal Association (IFA), *Rules for determining income and expenses as domestic or foreign*, LXVb Cahiers de droit fiscal international (1980).

[9]Charles I. Kingson, *The Foreign Tax Credit and Its Critics*, 9 Am. J. of Tax Policy 1, 57 (1991).

Recommendation

The sourcing of income and expense allocation rules should be designed to achieve three goals: 1) the elimination of double taxation; 2) the elimination of undertaxation; and 3) the distribution of tax jurisdiction over taxable income among sovereign governments in some mutually agreeable fashion.[10] The only solution that will simultaneously satisfy all three goals is international consensus on a set of rules for the sourcing of income and the allocation of expenses. Therefore, I urge Congress to encourage the Treasury Department to take the lead in the negotiation of such a harmonized set of rules.

Until such an international agreement is reached, I propose that the allocation of R&D expense to foreign source income should only occur where deductible in the foreign jurisdiction. The tax planning of multinationals focuses on the reduction of worldwide tax liability, not just U.S. tax liability. Therefore, given that U.S. corporate tax rates are often lower than most other jurisdictions,[11] there is already a built-in incentive to claim all allowable deductions against foreign source income aggressively so as to reduce the foreign tax burden. To the extent U.S. multinationals are operating in jurisdictions with a lower tax rate than that of the U.S., it will be necessary to develop a mechanism to allocate the greatest amount of R&D expense allowable as a deduction in the foreign jurisdiction.

This is a departure from traditional U.S. tax policy which requires that foreign source taxable income be computed according to U.S. concepts. It is probable that research expenses incurred in the U.S. produce not only domestic income but also foreign income,[12] therefore to the extent the amount of research expense deductible in the foreign jurisdiction is less than the amount properly allocable to the foreign source income, the United States would suffer a loss of revenue in favor of the foreign jurisdiction.

I believe this departure from U.S. tax policy is justified because of the unique income measurement problems that exist with respect to R&D expenses. The United States' unilateral resolution to this issue has led to double taxation for many U.S. multinationals.[13] In theory, these double taxation problems should be resolved through the negotiation of bilateral treaties and the competent authority mechanism.[14] However, given the limited treaty network of the United States, the lengthy treaty negotiation process, and the problems with the competent authority process, this is not realistic.

This is admittedly a second best, and should not be a permanent, solution. Once again, the only way to satisfy the international goals of designing a system that avoids overtaxation and undertaxation as well as providing for an equitable distribution of tax revenue among sovereign governments is to harmonize the rules for the sourcing of income and the allocation of expenses. It will be necessary to study the approaches taken by the various governments' tax systems and develop a system that is mutually agreeable. Note that these rules are of paramount importance whether administrating a territorial tax system or a foreign tax credit system.

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[10]Michael J. McIntyre, *The International Income Tax Rules of the United States*, 3-65 (Butterworth 1992).

[11]See Ernst & Young, *Worldwide Corporate Tax Guide* (1994).

[12]The counterargument made by some is that these expenses are recovered initially in the domestic market, and, as royalties or other payments represent the profits, no allocation should be made to foreign income.

[13]Double taxation only occurs for those taxpayers in an excess foreign tax credit position, i.e. those taxpayers whose foreign income taxes paid exceed their foreign tax credit limitation. It is generally assumed that the majority of multinational corporations are in an excess credit position.

[14]McIntyre, *supra* note 10.

As cross-border activity between Canada and Mexico increases because of the North American Free Trade Agreement, it will be necessary to attempt some harmonization of these respective tax systems, including the allocation of R&D expenses. The European Union, now comprised of fifteen countries, is already engaged in a similar exercise.[15] These efforts should pave the way for the negotiation of a coherent system for the sourcing of income and allocation of expenses of international transactions.

[15]See generally, Tracy Kaye, *European Community Tax Harmonization and the Implications for U.S. Tax Policy*, Tax Foundation (1994).

Chairman JOHNSON. Thank you very much, Ms. Kaye.
Mr. Wiacek.

STATEMENT OF RAYMOND J. WIACEK, TAX COUNSEL, JONES, DAY, REAVIS & POGUE, ON BEHALF OF EMERGENCY COMMITTEE FOR AMERICAN TRADE

Mr. WIACEK. Thank you, Madam Chair. My name is Ray Wiacek. I am here to testify on behalf of the ECAT, Emergency Committee for American Trade.

ECAT is an organization of about 60 very large U.S. multinationals. They employ over 5 million people and generate annual sales in excess of $1 trillion. The membership includes some of the most R&D-intensive companies in the world.

I am here to talk about the so-called 861 R&D regulations, and I have submitted a written statement for the record, so I would like to come off the written page and just talk to you directly and briefly for a moment.

The 861 R&D regulations treat a portion of U.S.-performed R&D as if it were done abroad. Technically, these rules work through the foreign tax credit rules. But there are economic consequences, principally the denial of a deduction for that portion of U.S. R&D deemed to be foreign.

Now, as Professor Kaye has said, no foreign country grants a deduction for such R&D. From time to time, the Joint Committee has pointed out that this might be wrong as a purely theoretical matter. I think in the Joint Committee's pamphlet for the last hearings on this apportionment issue they cited the Philippines and Turkey as possibilities where you might get a deduction. In the Joint Committee's pamphlet for this hearing, it is noted that in Finland or New Zealand a U.S. company also might be able to obtain a deduction. The Joint Committee specifically notes, however, that in such major trading partners as Japan and Canada, that no deduction would be obtained.

Of course, in the real world the denial of such a deduction makes sense. You would know yourself, Madam Chair, that there is not a chance that we would get a deduction in Japan for engineering salaries paid or lab supplies purchased in Connecticut. It just isn't going to happen.

Now, the consequence of the section 861 R&D apportionment regulations is that the cost of U.S. R&D has been increased, or put another way, that the amount of R&D that you could do for a given level of investment is decreased.

These section 861 R&D regulations are about as controversial as any I can remember. They were first issued in 1977. They phased in and became fully operational in 1980, and almost immediately Congress began to enact a series of full and partial moratoriums—moratorium against their application. Looking back at this activity, it is like reviewing a "who's who" list of the tax legislation of the last dozen years.

Congress first enacted a moratorium in 1981 in ERTA, then again in DEFRA, then again in COBRA, then again in the 1986 Tax Reform Act, then in all the various OBRAs of the late eighties and the Tax Extension Act and so on. I think Mr. Sinaikin said he thought there were seven. By my count, there have been nine legis-

lative moratoriums. The Treasury also acted in 1992 administratively, granting relief from its own regulations.

Now, a lot of good has come from the above activity. For one thing, the record is long. All of this activity has been accompanied by testimony, studies, committee reports, that time and again question the tax policy, noting the disincentive to U.S. R&D, asking for further studies and so on. But there has been one major downside to all this activity. It has all been temporary, and this is tragic, because R&D is a long-term, risk-laden proposition, and it requires commitment, stability, and consistency in terms of government policymaking.

Now, looking at the above record, you have really got to admit that imposition of the 861 penalty, removal of it on a full basis for 1 year, then removal of it on a 50-percent basis for half a year, then imposition of the penalty again, then removal of it on a 2-year basis for 64 percent, and so on, is not a model of stability.

As to consistency, I think it is ironic that we have heard much testimony today about the incentive provided by the R&D credit and the need for it. At the same time, we leave regulations outstanding that impose a penalty on the same R&D, so we are talking both about an R&D incentive and a penalty coexisting.

Now, as you mentioned, Madam Chair, there has been a development, and it somewhat changes the conclusion of anyone's testimony. The development is news from the Treasury Department that it intends to resolve the section 861 issue by administrative action, which is within its power. Without this development my conclusion would have been to urge the subcommittee to initiate legislation that would once and for all resolve the section 861 R&D issue and bring a permanent solution to this area. But we have been working with the Treasury, and we applaud their sincerity and good faith in dealing with this regulation. We did hear Deputy Assistant Secretary Beerbower testify yesterday that some relief is imminent. So I think I would conclude instead, by asking that this subcommittee stay involved and stay interested because, despite applauding Treasury's sincerity and good faith, after, lo, these dozen years, we are going to believe it when we see it.

If and when those regulations come out, we would ask that the subcommittee stay interested with us in order to make sure that the solution is permanent and that it embodies fair and sound tax and R&D policy.

Thank you very much.

[The prepared statement and study with attachments prepared by Martin N. Baily and Robert Z. Lawrence follow:]

STATEMENT OF RAYMOND J. WIACEK, TAX COUNSEL JONES, DAY, REAVIS & POGUE, WASHINGTON, D.C. ON BEHALF OF EMERGENCY COMMITTEE FOR AMERICAN TRADE

WEDNESDAY, MAY 10, 1995

My name is Raymond J. Wiacek and I am a partner here in Washington with Jones, Day, Reavis & Pogue. I am testifying on behalf of the Emergency Committee for American Trade, or ECAT. ECAT is an organization that represents over 60 large U.S. corporations with vital interests in international tax and trade. Its member companies employ over 5 million people and generate over $1 trillion in annual sales. Its membership includes many R&D-intensive companies who perennially rank among those with the largest commitments to R&D.

I am hear to testify with respect to Treasury Regulations § 1.861-8 as they apply to R&D -- that is, the so-called "861-R&D" regulations. These regulations treat a portion of R&D done in the U.S. as if it were done abroad. The regulations operate, technically, through the foreign tax credit rules, but their effect is the same as denying a deduction for that portion of U.S. R&D "deemed" to be foreign. Of course, no major foreign country grants a deduction for R&D costs incurred in the U.S. just because the U.S. Treasury deems a portion of that R&D to be "foreign." This makes sense. Does anyone really believe that Japan will allow a deduction against Japanese income for engineering salaries paid in Connecticut or chips and semiconductors consumed in California? Would the U.S. let a plant in Ohio assembling Japanese autos reduce its U.S. income taxes for research done on emission controls in Toyota City?

Because they effectively deny an R&D deduction for many U.S. companies, the 861-R&D regulations increase the net cost of R&D performed in the United States, and decrease the overall amount of R&D that can be undertaken for a given level of investment. In 1983, in fact, the Department of the Treasury reported that the 861-R&D rules would reduce overall levels of U.S. R&D. Many R&D-intensive companies also have asked why they shouldn't move some of their R&D abroad, since the Treasury treats some of their R&D as if done there anyway.

The 861-R&D rules have been controversial since their issuance in 1977. They became fully operational in 1980 after a "phase in", and Congress promptly thereafter began enacting short-term "moratoriums" against their application. These now total *nine*.[*] Sometimes these have been full moratoriums, and sometimes 50% or 64% of U.S. R&D was freed from possible allocation to foreign sources. The Treasury, too, has adopted a temporary solution to the 861-R&D problem, holding as a regulatory matter in 1992 that 64% of U.S. R&D need not be subject to foreign allocation.

Each of these actions by Congress and Treasury was accompanied by testimony, economic studies, and legislative reports noting the disincentive to U.S.-R&D, questioning the tax policies inherent in the regulations, calling for further study, and so on. For example, a 1991 study by Baily and Lawrence found that over 300 U.S. corporations, performing approximately 80% of this country's industrial R&D, were penalized by the 861-R&D rules.[**] The bottom line here is that the record on this issue is already long.

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[*] The 861-R&D problem was addressed in the 1981 Act (ERTA), the 1984 Act (DEFRA), the 1985 Act (COBRA), the 1986 Act (TRA), the 1988 Act (TAMRA), the 1989 Act (OBRA), the 1990 Act (OBRA), the 1991 Act (TEA), and the 1993 Act (OBRA).

[**] A copy of this study is attached. It is worth noting that Martin Baily, one of the authors, is now a member of the Council of Economic Advisors.

Unfortunately, no one has permanently resolved this long-acknowledged problem. This is significant, because R&D is a long-term, risk-laden proposition that requires stable and consistent governmental policies. The stability necessary is not demonstrated, however, by policies that remove the 861 penalty on U.S. R&D episodically and for differing short-term periods. The consistency necessary also is lacking where an R&D credit meant to foster R&D is adopted at the same time regulations which penalize R&D are left outstanding.

As a matter of sound tax and R&D policy -- and as a matter of good government -- it is time to resolve once and for all the long-festering 861-R&D problem. ECAT strongly supports adoption of a solution like that embodied in the many moratoriums heretofore passed -- but on a permanent basis. ECAT urges the Subcommittee to demonstrate its commitment to U.S. R&D and sound tax policy by initiating such a solution.

Martin N. Baily

Professor of Economics at the University of Maryland
and Guest Scholar, The Brookings Institution[1]

and

Robert Z. Lawrence
Senior Fellow, The Brookings Institution

At a time of intense foreign competition and slow productivity growth it is essential that the U.S. economy sustain or even strengthen its commitment to commercial R&D. And, recognizing this, there is now broad agreement among policymakers on the need for a permanent R&D tax credit. At the same time, it is vital that other provisions of the U.S. tax code do not offset or reduce the impact of the R&D tax credit. One such provision that would be harmful in its effect on domestic R&D is tax regulation 861-8.

Tax regulation 861-8 requires international companies to attribute part of their U.S. R&D to their foreign-source income. This regulation has been largely suspended since its inception, but the most recent suspension will expire at the end of this year and this would provide an incentive for U.S. companies to move some of their R&D overseas. Given the global operations of many companies and the fact that qualified scientists and engineers are now available in a number of foreign countries, this incentive could lead to a significant reduction of U.S.-based R&D.

It has been argued that the 861-8 provision is narrow in its scope and that only a few companies would be affected by the proposed repeal. In this testimony I report on a study of this question conducted by myself and Robert Z. Lawrence.* We evaluated a sample of 524 companies performing most of U.S. R&D. We find that 304 companies, accounting for 82 percent of sample R&D spending, are likely to be adversely affected if regulation 861-8 were fully implemented.

The Importance of R&D

In earlier studies we have argued that there is a persuasive case for using public policy to encourage commercial R&D.[1] When a U.S. company develops a new technology, it cannot prevent other companies from borrowing or imitating the new developments. Even when there is patent protection, other companies can "invent around" the patent and introduce their own version of the new product.

The fact that a given development in technology has "spillover" benefits for all companies is not bad for the economy. It means that new ideas spread throughout the economy and consumers benefit from the competition among multiple suppliers. In some cases, high-technology companies will even foster the cooperative element of technology development by using cross-licensing agreements or joint-venture R&D projects, as have occurred in the semiconductor industry.

The problem with the spillover of technology is that it reduces the private incentive to perform R&D. Any given company will weigh only the effect on its own profitability of its R&D when deciding how much R&D to perform. It will not include in its calculation the benefits to other companies and to consumers, and the result is

* This study was sponsored by the Council on Research and Technology.

[1]The views expressed here are our own. They do not represent those of the Brookings Institution.

that the private rate of return to R&D is well below the social rate of return. (The private rate is the rate of return to the company that performs the R&D. The social rate includes the private rate plus the rate of return to the economy at large). Since there is this disparity between the private and social rates of return, too little R&D is performed. The economy as a whole, therefore, has a stake in encouraging additional R&D. This argument provides the main rationale for providing a tax credit for R&D and also explains why it is essential to make sure that adverse incentives in one part of the tax code do not undo the favorable effects that have been obtained elsewhere.

Many types of investment are helpful in terms of improving U.S. productivity and competitiveness and for creating jobs, but investment in R&D is special. For most investments, the private and social rates of return are close together, so that we can leave it to the market to ensure that there is an adequate amount done. This is not to deny the importance of policies that keep long term interest rates low and tax burdens reasonable in order to encourage all investment. Rather, it says that there is no need for special treatment for most kinds of investment, indeed it is to be avoided. R&D is different because of the huge gap between private and social rates.

A study by Edwin Mansfield and associates at the University of Pennsylvania in 1977 found that the social rate of return to R&D was over 50 percent compared with about half that for the private rate.[2] There have been numerous follow-up studies of the returns to R&D done since then using Mansfield's approach and using alternative methods. It has been found consistently that the social return to R&D is much higher than the private rate and that there has been no reduction over time in the returns to R&D.[3] Despite the relatively slow growth of the U.S. economy in the last twenty years, it remains the case that commercial R&D is a very good investment for everyone in the economy. Slow economic growth does not seem to have diminished the payoff to R&D.

Based upon arguments such as these, we have strongly supported the R&D tax credit as one way of encouraging additional R&D. And in our own empirical analysis of the impact of the credit that was in effect from 1981-85 we found that it had increased commercial R&D by about $2.5 billion per year. Some other empirical estimates found smaller effects, but there was a clear consensus from a variety of studies that tax incentives for R&D can increase the amount of commercial R&D, and indeed they have done so.[4] The tax treatment of R&D is an important determinant of the amount of R&D performed. Moreover, the efforts to reform the incentive structure of the credit have paid off, so that the proposed permanent R&D credit will provide a surprisingly strong incentive for R&D given its rather small revenue effect.[5] There is now broad agreement in Congress and the White House that an R&D tax credit is desireable.

At this time, however, the Congress is considering how to treat R&D for companies that have significant foreign operations. Tax regulation 861-8 says that part of the U.S. R&D expenses of a U.S. multinational company must be attributed to its foreign activities. This regulation has been largely held in suspension until now, but if it were enforced as written it would provide a substantial incentive for U.S. companies to move R&D overseas, thereby depriving the U.S. economy of much of the benefit of this investment.

The Adverse R&D Tax Incentive Caused by 861-8

The U.S. tax code treats U.S. owned companies on the basis of their world-wide income. Companies must compute both their domestic and their foreign source income and pay U. S. corporate income tax on both parts, with a credit given for the taxes paid to foreign governments in order to avoid double taxation. The U.S. tax code has long specified that companies can take no more in foreign tax credits than the amount that they would have paid in U.S. tax on their foreign income. If the foreign government nevertheless sets a tax rate that is higher than the U.S. rate, the company bears the burden. This prevents a high tax country from passing its taxes to the U.S. Treasury via the foreign tax credit.

For many years the corporate income tax rate in the U.S. was roughly in line with tax rates in the main countries where U.S. multinationals were located. Companies were therefore able to take almost all of their foreign tax payments as credits against their U.S. taxes. There was no particular incentive within the tax code to locate production or other facilities in one country or another. Following the changes that took place in the tax code in the United States in the 1980s, particularly the 1986 changes, this is no longer the case. The tax rate on corporate income in the U.S. is below the rates in most other major countries. This means that more U.S. multinational companies find themselves in the position of having excess foreign tax credits.

Regulation 861-8 states that a company computing its foreign source income must attribute a fraction of its U.S. R&D expenses to its foreign activities, even though all of the R&D is actually being performed in the U.S. For example, a company that had $100 million of R&D or U.S. R&D expenses might have to attribute $20 million to its foreign operations. This raises its domestic source income and its domestic tax liability. But since no foreign government allows companies to deduct R&D expenses incurred in the U.S. from their taxable income within the foreign country, the 861-8 attribution does not correspondingly reduce the amount of foreign taxes paid by the company.

Since many or most U.S. companies with substantial foreign operations are now in an excess foreign tax credit position, the 861-8 regulation, if fully implemented, would increase their overall tax liability and, more importantly, the regulation would also change the calculations of the costs and benefits of locating R&D in different countries. Such companies would then have a very substantial tax incentive to move some of its R&D operations to countries where it has production facilities or where it is earning taxable income. Consider the example that was given earlier and suppose that this company decided to cut its actual U.S. R&D by 20 percent, to $80 million, and to establish a lab overseas with annual spending of $20 million. Its total R&D costs are the same as before, but its tax situation is now very different. The $20 million of foreign spending is now a deductible business expense in the foreign country. If the corporate tax rate overseas were, say, 45 percent, then the company would reduce its foreign tax liability by $9 million (0.45 x 20). The company's U.S. tax liability on its foreign income is unchanged because it has excess foreign tax credits, but its tax liability on its U.S. income would rise by $6.8 million (0.34 x 20). In this example, therefore, the tax benefit to the company represents 11 percent of the amount of R&D shifted (100 x (0.45- 0.34)). For companies with excess foreign tax credits, the 861-8 provision will

generate an important incentive for shifting R&D overseas, the percentage incentive being equal to the difference between the U.S. and foreign corporate income tax rates.

R&D in The U.S. Economy and Overseas

After a number of years in which every new economic statistic seemed to bring more bad news about the performance of the U. S. economy compared to its major competitors, we are now discovering that U.S. industry has more strength than we thought. The trend of productivity growth in U. S. manufacturing has been excellent since the early 1980s. The trade deficit is declining, indeed the most recent figures indicate that the U.S. is running only a very small deficit in manufactured goods. And as we move out of the current recession, even employment in manufacturing should improve. These gains have come, however, despite a continuation of the very fierce foreign competition that now characterizes the world economy. There remain many U.S. industries that are having trouble competing and many more that are succeeding only by making continual efforts to improve their technology, productivity and product quality. Clearly, the ability and willingness of U.S. companies to fund R&D is crucial in determining the outcome of this competitive effort.

The danger of the 861-8 regulation is that it would generate an incentive for many companies to transfer their R&D overseas. This would have a detrimental effect on U.S. economic performance at a critical time for U.S. industry. R&D is particularly important because of its high social rate of return; it gives spillover benefits even to those who are not performing it. To some extent these spillover benefits are international. They can be gained regardless of where the R&D is performed. A new technology developed in Switzerland can be applied in a factory in Ohio. But most of the spillover benefits are local. A scientist or engineer learns by working for one company and then carries this knowledge with him or her to another company. A scientist or engineer based in a U.S. university consults for U.S. companies and then uses this knowledge and experience to help in teaching students. When Toyota developed its innovative methods for auto assembly, this new technology spread fairly quickly to other Japanese auto companies and to other assembly lines. It has taken much longer for U.S. companies to copy the innovation and adapt it to U.S. needs. Many of the spillover benefits of R&D occur within national borders.

The responsiveness of U.S. R&D to the adverse incentives embodied in the 861-8 regulation may be very substantial. The U.S. has been the leader in scientific and engineering research for a long time and it remains the leader today. Twenty years ago, few U.S. companies would have been willing to move much of their R&D overseas because the trained personnel were not available and there was not the same critical mass of research going on. Today, Germany and Japan have a larger fraction of their GNP devoted to civilian R&D than does the U.S. Electronics research can be moved to Japan, pharmaceutical research can be moved to Europe and software development can be moved almost anywhere in the world. Multinational companies are now citizens of the world and will locate their activities where they earn the most return. Indeed the pressure of competition forces them to do this.

We are not suggesting that R&D will suddenly flee the U. S. if the 861-8 exemption is repealed. There are many good reasons for companies to do research here. The real question is: What is going to happen at the margin? If there is a substantial incentive to move R&D overseas or to construct new labs overseas rather than here at home, this is going to happen and U.S. R&D will be adversely affected. We do not know of any clear evidence that shows exactly how large the response is likely to be, but if each dollar of R&D that moves overseas reduces a company's total tax liability by 10 cents or more (as seems to be the case) and if many, many companies are affected by the regulation (as we will show below), then the effect of it is bound to be substantial.

How Many Companies Will Be Affected?

The potential adverse effects of the 861-8 provision on U.S. R&D have been recognized for some time, but their importance has been questioned. One argument is that only a very few companies would be subject to the regulation. Most of the companies performing R&D in the U.S. would not be affected, it is said, and so the bulk of R&D would be unaffected. Moreover, whenever provisions of the tax code affect only a very few companies, there is concern that the case for tax relief reflects merely special pleading by these few companies, rather than being based upon true public policy concerns.

The issues, then, are whether regulation 861-8 affects a small or a large number of firms and whether it applies to a small or large fraction of total corporate R&D. We have addressed these questions by looking at 743 manufacturing companies from a COMPUSTAT data base. This data base is a standard source for the analysis of U.S. business; it is prepared by Standard and Poor's from company reports and SEC filings.[4]

Of the 743 companies in the sample, 524 reported that they performed R&D and the total of their reported spending was $51.581 billion in 1987 and $56.842 in 1988. These figures are close to 90 percent of the National Science Foundation's figures for total industry-funded R&D for those years. The company data in the COMPUSTAT file are not exactly comparable to the NSF figures, because the NSF excludes R&D performed by U. S. companies overseas and because some government-funded R&D may be included in the COMPUSTAT figures. But nonetheless, these totals indicate that the firms in our sample cover the great majority of U.S. R&D.

It is worth noting immediately that the percentage of the companies that performed R&D was very high indeed -- over 70 percent. R&D is not an activity restricted to a small group of companies in the U.S. economy. Over two-thirds of our large manufacturing companies are R&D performers.

We then set up a series of criteria to determine which of the 524 R&D performers would be affected by the 861-8 regulation. We assumed that a company will be affected by 861-8 if it conducts R&D in the United States, is profitable, has foreign income and pays "high" foreign taxes. These criteria indicated that 312 companies would have been affected by the provision either in 1987 or 1988 if it had been in effect. This figure is conservative in that it excludes several companies that failed to report all of the

relevant information to COMPUSTAT, even though some of these companies may in fact be affected by the regulation. The 312 companies obtained by the above criteria did include, however, 8 major defense contractors that are probably not affected by 861-8 because they do not have enough high-taxed foreign source income. Thus the final tally was that 304 of the companies are estimated to be affected by 861-8. This means that of the companies in the sample that perform R&D, 58 percent are affected. In 1988, these affected companies performed $46.450 billion of R&D, equal to 82 percent of the sample R&D in 1988. It is clear that the 861 regulation is one that affects a large number of companies and a large fraction of total R&D.[7] The results of the analysis are summarized in Table 1.

The Extent to Which U.S. R&D is Concentrated

We have shown that a large number of companies would be affected by a repeal of the 861-8 exemption, so that this is not an issue that is of concern only to a few companies. However, there are a few companies that account for a large fraction of the tax effect of the regulation. Even though the regulation would affect many firms, its quantitative impact is rather concentrated and the reason for this is that R&D itself is very concentrated.

R&D is very risky, the payoffs often accrue over the very long term and there are advantages to operating at large scale. It is in the nature of the R&D activity itself that it will be concentrated in large firms. We often hear of the small firms and the pioneering innovators that have made major advances in technology without having large labs or large- scale resources. And these stories are indeed correct. However, these small firms and small labs generally have to team up with large firms in order to develop their products and processes. Most of the cost of R&D comes in the development stage, not when the invention is first made. If we are to provide support and incentives for R&D in the U.S. economy, inevitably this means the greater part of those benefits will flow to large firms.

One way that we know that concentration in R&D is to be expected is that we see the same pattern of concentration in other countries. Figure 1 gives the distribution of R&D spending in the 70 largest U.S. R&D spenders and the 70 largest Japanese spenders. We see a very similar pattern of concentration in the two countries, actually with somewhat higher concentration in Japan than in the U.S. The largest 15 performers in Japan account for about 65 percent of the total R&D performed by the full 70 firms. The corresponding figure for the U.S. companies is about 55 percent.

Conclusions

- It is important to support R&D spending by U.S. companies and it is important that this spending occur here at home.

- Failure to renew the suspension of the 861-8 exemption would result in an incentive for U.S. companies with international operations to shift some of their R&D spending overseas.

- Our study of the largest manufacturing companies in the U.S. indicated that 58 percent of them, over 300 out of 524 R&D performers, are likely to be affected by full implementation of the 861-8 regulation. These affected companies performed $46.45 billion of R&D in 1988 -- an amount equal to 82 percent of the R&D in our sample (and 78.5 percent of all industry-funded R&D in the U.S.).

- The impact of the 861-8 regulation is concentrated on large firms because R&D itself is concentrated. The concentration of R&D in the U.S. economy is less than R&D concentration in Japan.

Footnotes

1. Martin Neil Baily and Robert Z. Lawrence with DRI Inc., The Need for a Permanent Tax Credit for Industrial Research and Development. Study sponsored by the Coalition for the Advancement of Technology, Washington D.C., February 1985; and Tax Policies for Innovation and Competitiveness. Study sponsored by the Council on Research and Technology, Washington D.C. April 1987.

2. Edwin Mansfield et al., "Social and Private Rates of Return From Industrial Innovation, " Quarterly Journal of Economics, 1977, pp. 22140.

3. Edwin Mansfield, "The Microeconomics of Technological Innovation, " in Ralph Landau and Nathan Rosenberg, eds., The Positive Sum Strategy: Harnessing Technology for Economic Growth, Washington D.C., National Academy Press, 1986; Frank Lichtenberg and Donald Siegel, "Using Linked Census R&D-LED Data to Analyze the Effect of R&D Investment on Total Factor Productivity Growth," Columbia University, January 1987.

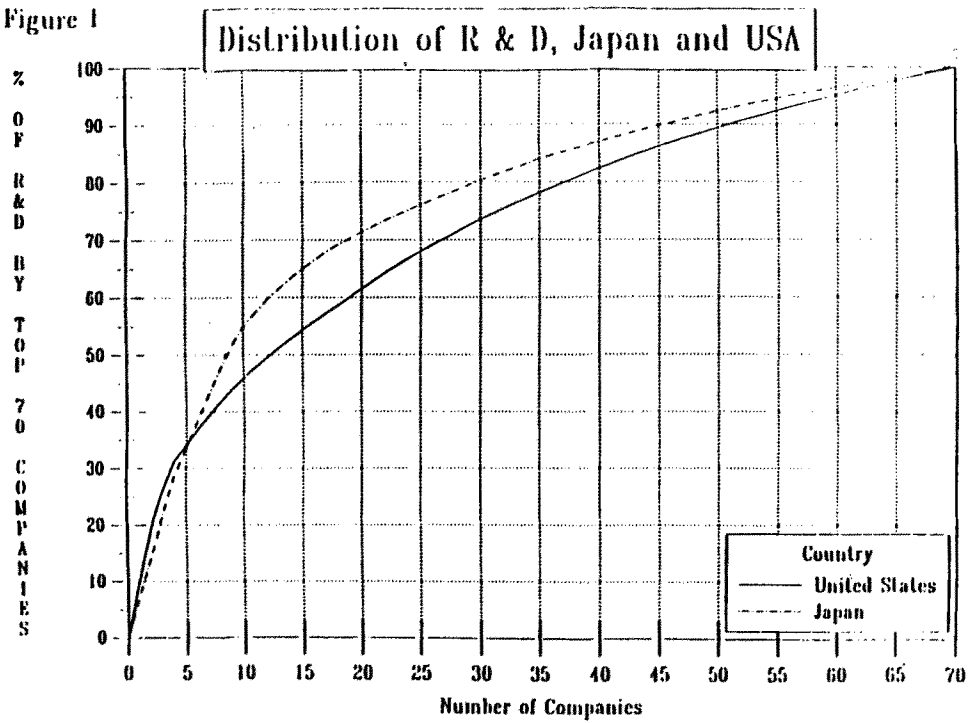
4. We review the studies in Baily and Lawrence 1987, op. cit.

5. Martin Neil Baily and Robert Z. Lawrence, The Incentive Effects of the New R&E Tax Credit. Study sponsored by the Council on Research and Technology, Washington, D.C., July, 1990.

6. We understand that R&D for financial and SEC purposes differs somewhat from R&D for tax purposes, but we believe that the COMPUSTAT data provide a reasonable approximation for purposes of this analysis.

7. In order to check our criteria, we provided the list of the largest 50 R&D performers in our sample to Mr. Raymond Wiacek of Jones, Day, Reavis and Pogue, an expert on 861-8. We asked him to indicate which companies on the list would be affected by the regulation based on his knowledge of the companies and the regulation. His response allowed us to determine how well the criteria were working in marking the affected companies. The agreement was excellent. There were only four differences in classification, one of which came from a "cost-sharing" company and three of which were defense companies. As we say in the text, we thereafter eliminated all of the major defense contractors from our list of affected companies.

Figure 1



Source: Japanese data from The Japan Company Handbook, by Toyo Keizai Shinposha, 1987.
U.S. data from Standard & Poor's Industrial Compustat Database.

Note: Japanese data are for the 1987 fiscal year, U.S. data for the 1987 calendar year.

TABLE 1: SUMMARY OF INVESTIGATION INTO MANUFACTURING R&D, 1987–88

Category	Number of companies	Percent of the sample's 1988 R&D	Dollars in millions, 1988 R&D in each category
Total U.S. R&D expenditures, 1988	.....	.....	$90,600
Total Private R&D in 1988 [1]	.....	.....	59,100
Manufacturing companies which were examined	743	.....	.....
Companies with no R&D 1987 or 1988	−219	.....	.....
Manufacturing Companies with R&D (the sample)	524	100.0	[2] 56,842
Tax data not available	−65	10.1	5,758
Companies with R&D and tax data	459	89.9	51,084
Paid no foreign taxes in 1987 or 1988	−109	2.4	1,337
Paid foreign taxes but no Federal taxes	−38	1.3	745
Total companies with R&D and both foreign and Federal tax payments in 1987 or 1988	312	86.2	49,002
Of which are major defense contractors not included elsewhere	−8	4.5	2,552
Nondefense companies	304	81.7	46,450

[1] Expenditures funded by private companies, excluding all federally funded R&D centers administered by private companies. 1988 figure is an NSF estimate.

[2] R&D in the sample represents 96.2 percent of all private R&D done in the United States.

Sources: Company R&D from Standard & Poor's Industrial Compustat Database. Total national R&D from NSF, Science & Engineering Indicators, 1989.

STATEMENT OF ROBERT H. GREEN, VICE PRESIDENT, TAX POLICY, NATIONAL FOREIGN TRADE COUNCIL, INC.

Mr. GREEN. Thank you, Madam Chair, and members of the subcommittee. My name is Bob Green, and I am vice president for Tax Policy of the NFTC, National Foreign Trade Council, Inc. I appreciate the opportunity to testify before the subcommittee on the 861 allocation rules and the 1977 regulations. I have submitted a very detailed written statement, which I ask to be incorporated in the record. In light of the fact that a number of the witnesses on the panel have covered the points that I intended to address during my testimony, I will briefly summarize those points for you.

Our basic position on the 861 allocation issue is that we would urge the Treasury to finalize regulations that provide a permanent solution that will provide a reasonable allocation between domestic and foreign source of the R&E expenses to operate in tandem with the R&D tax credit in a manner that does not undermine its vitality. I am very encouraged, as Ray Wiacek said, about the effort that the Treasury has undertaken to pursue a regulatory solution to this problem.

Ray is more familiar with the history of this issue, perhaps, than anyone; and because of the sporadic nature of the solution to this issue over the years, I think it behooves all of us to monitor the Treasury solution to this problem very closely and to share with the subcommittee our input and assessment of the substance of the regulations when it is released. But I commend the Treasury for the initiative.

Just by way of background, the NFTC is an organization of roughly 500 companies, 90 percent of which are U.S.-owned. The organization's members are engaged in activities that span the spectrum of commercial activities from industrial, commercial, financial, and service activities throughout the world. In this respect, the need to establish a permanent solution of the R&E allocation rules is a crucial element in the ability of these companies to compete in the growth markets around the world.

Companies sitting around the table here, who have spoken, and many others in my organization are very active in the R&E area and in the growth areas of the world; China, Indonesia, many of the Pacific rim countries are areas where R&E activities are particularly important to compete in those marketplaces.

I think Ray Wiacek has amply demonstrated the nature of the history of the 861 R&E allocation rule, which is one of uncertainty, instability, and lack of finality. One of the things that you can clearly count upon with companies is when they have tried to plan their business investments in a particular country, they attempt to analyze and assess the return on that investment. That is especially difficult to do when you are uncertain about both the U.S. consequences of your R&E investment and the foreign treatment of that particular investment. For that reason, the permanency issue is paramount, and we urge the subcommittee to work with the Treasury to try to come up with a solution that makes sense.

The rest of my remarks are contained in my written statement. I am delighted to testify here today, and I am willing to answer any questions that the subcommittee has.

[The prepared statement follows:]

National Foreign Trade Council, Inc.

Prepared Statement Submitted to the Subcommittee on Oversight of the Committee on Ways and Means U.S. House of Representatives

May 10, 1995

Madame Chairman and Members of the Subcommittee:

The National Foreign Trade Council, Inc. (NFTC) appreciates the opportunity to submit its written comments on the issue of the research and experimentation expense allocation rules contained in Treasury regulations Section 1.861-8(e)(3). While a more detailed discussion of our position is described below, the NFTC would respectfully urge the Treasury to resolve this issue permanently by regulation to provide for a 64 percent allocation to U.S. source income for R&D expenses conducted in the U.S., or, alternatively to provide at least for the 50 percent apportionment contained in the OBRA Legislation of 1993. If a regulatory solution cannot be achieved, then the NFTC would urge Congress to enact a permanent, legislative resolution of this issue by providing for allocation of at least 50 percent of R&D expenses incurred in the U.S. to U.S. source income.

The NFTC, organized in 1914, is an association of over 500 U.S. business enterprises engaged in all aspects of international trade and investment. The NFTC membership is actively engaged in a broad spectrum of industrial, commercial, financial, and service activities around the world. The NFTC's sole agenda is to foster an environment through tax and trade policy that permits U.S. companies to be dynamic and effective competitors in the international business arena. In this respect, the need to establish a permanent solution to the R&E allocation rules is a crucial element to further the ability of U.S. companies to be competitive in the growth markets of the international economy.

Background

The history of the 861 R&E allocation issue is one of uncertainty, instability, and lack of finality. Since the issuance of the 1977 regulations that proposed a maximum allocation of 30 percent to U.S. source for R&D expenses conducted in the U.S., there have been numerous efforts of a temporary nature, both legislative and regulatory, to address the R&E allocation question.

To briefly summarize the history of the R&E allocation issue after issuance of the 1977 regulations, Congress imposed a moratorium on implementation of the 1977 regulations beginning in 1981 and extending through 1986. During that period, U.S. companies were permitted to allocate the entirety of their R&D expenses to U.S. source income. The rule permitting all expenses to be allocated to U.S. source was modified in 1987 to allow a 50 percent allocation to U.S. source income. For most of the next five years (1988 - 1992), Congress passed legislation that provided for a 64 percent allocation of R&E expense to U.S. source income.

In 1992, the Chairmen of the Tax-Writing Committees sent a letter to then Treasury Secretary Brady urging that the 64 percent allocation rule be extended by administrative fiat. The Treasury Department favorably responded to this request, but only for a temporary period of 18 months. The 1993 OBRA legislation modified the administrative fiat provided by the Treasury Department to allow a maximum of 50 percent of R&D expenses to be allocated to U.S. source income, but the 1993 legislation expired December 31, 1994. Unless an administrative or legislative solution is obtained, the 1977 regulations will apply for 1995 and all subsequent taxable years.

Proposed Solution

The NFTC believes that the preferred solution to the R&E allocation issue is for the Treasury Department to revise the 1977 regulations to provide for a 64 percent allocation of R&E expense to U.S. source income, or, alternatively at least to adopt the 50 percent allocation rule contained in the 1993 OBRA legislation. If the R&E allocation issue cannot be satisfactorily resolved at the regulatory level, then the NFTC would urge that the Congress enact legislation to extend on a permanent basis the 50 percent allocation rule adopted in the 1993 legislation. The NFTC wishes to emphasize the need to provide a permanent solution, either regulatory or legislative, that is fair in its treatment of R&E expense allocation relative to foreign companies against which U.S. businesses must compete.

Reasons Underlying the Need for a Solution

There are numerous, compelling reasons for either the Treasury Department or the Congress to act expeditiously to establish rules that would allocate R&E expenses to U.S. source income in a reasonable manner. These include:

1. R&E expenses allocated to foreign source Income under U.S. rules are disallowed as a deduction in foreign countries. Any portion of the R&E expense incurred in the U.S. that is allocated to foreign source income is disallowed as a deduction in the foreign country. When this scenario occurs, the result is to impose double taxation on U.S. companies. Foreign companies against which U.S. businesses compete for market share are generally permitted to deduct all of the R&E expenses performed in their own country.

   To avoid the double taxation that ensues when R&E expenses are allocated to foreign source income, U.S companies may consider the possibility of conducting their R&E expense in foreign jurisdictions. While a decision to relocate is only undertaken after weighing all business-related factors, U.S. policy should encourage U.S. companies to perform R&E expense in the U.S. Instead, present U.S. policy causes U.S. companies to at least to consider the alternatives of performing R&E elsewhere.

2. Allocation of R&E Expenses to Foreign Source Income Undermine the Purposes Underlying the Research and Development Tax Credit. The research and development tax credit (R&D) was enacted by Congress to promote the performance of research and development in the United States. It is widely recognized that research and development in the United States has declined relative to the R&D activities in most industrialized countries, in which the foreign competitors of U.S. companies are primarily based. The tax policy in the U.S. that encourages the performance of R&D expenses in this country works in concert with or is complimentary to the R&D tax credit mechanism. Conversely, the concept underlying the R&D tax credit is undermined to the extent that a significant portion of R&E allocation expense is allocated to foreign source income.

3. Reasonable R&E Rules and Effective R&D Tax Credit Enhance U.S. Competitiveness in a Global Economy. Adoption of allocation rules that provide an allocation of up to 64 percent of R&E expenses to U.S. source income promote a competitiveness of U.S. companies that are growth oriented and effectively compete in the global economy. The companies affected by both the R&E rules and the R&D tax credit compete in against their foreign counterparts in the emerging market places of the world/i.e./China, Indonesia, etc. It can unequivocally be stated that strengthen these two components of U.S. tax policy (the R&D tax credit and R&E allocation rules) will enhance the competitiveness of U.S. companies and lead to greater job creation.

4. The Solution to the R&E Allocation Problem should be Permanent in Nature. As the of the R&E allocation debate amply demonstrates, there is a compelling need to devise a permanent solution to the R&E allocation issue that permits U.S. companies to effectively compete in foreign jurisdictions. While the NFTC preference would be for the Treasury to revise the 1977 regulations in a manner consistent with our recommendations, the important point to stress is the need for a permanent and not a temporary solution to what has been an intractable problem. It is extremely difficult for U.S. companies to plan their business investments in foreign jurisdiction when a vital component of the tax planning surrounding investments of this nature, namely, the treatment of R&E expenses, is uncertain and unreliable. We urge the Treasury and the Congress to collaborate to produce a permanent solution to this issue.

The forgoing reflect our comments on the 861 R&E allocation issue. Please let us know if you need further information or if there is any other manner in which we may be of assistance.

Chairman JOHNSON. Thank you.

This is a subject we are going to have to come back to as soon as Treasury releases their regulations, so I invite all of you to share your comments on those when they are released. But I would like to hear your comments on Ms. Kaye's proposal. It may be worth looking at that, even if the regulations are far better than anything we have had to date.

One of the things that is becoming increasingly clear to the subcommittee as a whole is that if we don't simplify our tax structure, then we leave ourselves at a terrible disadvantage. Also, frankly, it is not only so complex that you can't understand it without a lot of tax experts, it is harder and harder for Members to understand the implications of actions that are proposed; and this is a perfect example of the area.

Imagine solving a problem for 10 years by imposing a moratorium. This is not exactly digging in and fixing. So I think we do have an obligation and an opportunity right now to evaluate the Treasury's effort because the Treasury has made a very positive effort.

There is no question that they are trying to reach out and make this thing work in a way that is fair and equitable. I am not sure from what I just heard and in preparation that the law is written in such a way that they can avoid the double taxation that is destructive.

In one of the preceding panels, while the speaker didn't quote that part of their testimony, apparently there is now pretty good evidence of an increasing flow of American R&D abroad, and I would assume that that has something to do with this portion of the law. At any rate, I would be interested in your comments on Miss Kaye's proposal which was, if I may remind you, that the allocation of R&D expense to foreign-source income should only occur where deductible in a foreign jurisdiction.

Comments?

Mr. WARREN. I guess I can offer a few comments to begin with. Speaking for TRW, in particular, and I believe for the Electronic Industries Association——

Chairman JOHNSON. Mr. Warren, if I could defer the answer to my question, Mr. Portman, who has been with us off and on now many, many hours has a speech in 5 minutes. I am going to yield to him for his question first.

Mr. PORTMAN. You are very kind. I appreciate it, and with apologies to my colleague, Mr. Cardin.

My question was practically the same as Mrs. Johnson's; it usually is. I tend to be sympathetic with what was stated here today. I think I understand the issue fairly well, but one thing that didn't come across clearly to me was the fact that I think the consequence of all this, which is a significant policy consequence, is that companies have very little incentive to keep R&D here if they fall into this trap, and therefore would have at least no disincentive to go overseas with their R&D, assuming most of it is getting allocated, or a significant part to their foreign income.

I guess that is part of what Mr. Warren might be responding to, in responding to that specific proposal of only having the allocation apply when it is deductible to foreign-source income. I would ask

Mr. Warren to proceed with his answer, but perhaps the other panelists can think about that question and whether that is a realistic consequence of the current law.

Mr. WARREN. The problem with the 861 allocation is just what was stated. It encourages movement of research offshore. It is a very real disincentive. It works, as you have heard other witnesses say, in direct opposition to an R&E tax credit, which is designed to encourage research.

I listened to the proposal that was just outlined with much interest. I think, from a company standpoint, from an industry standpoint, our interest has focused on trying to resolve this from a very real economic standpoint, and in the process we have gone through a series of moratoriums ranging from 100 percent to, I think most recently, 50 percent.

The proposal, as outlined, would offer a number of theoretically unique characteristics that I think and would hope would be considered by the Treasury Department. It is certainly a much more theoretically pure approach than a compromise resolution that layers additional complexity on top of regulations that are overly complex to begin with.

The 1977 regulations are very difficult to apply to begin with. Any legislative solution or regulatory solution that uses that as a starting point will have to end up with a very complex solution. What we need is simplification, though most importantly, we need an economic resolution that encourages U.S.-based research.

Chairman JOHNSON. Other comments?

Yes, Mr. Wiacek.

Mr. WIACEK. There were, I think, several questions embodied in the two that were asked. As to foreign R&D, it has often been said by the affected companies that if Treasury is going to treat their R&D as if it were done abroad and they get no deduction for it, why shouldn't they do it over there instead and get the deduction and remove the disincentive?

Now, academic studies have found it difficult to quantify the direct effect of the regulation on the export of R&D, although the studies do show that there is an effect. Because many affected companies are so large and R&D decisions involve so many other considerations, I don't know if anyone, given the burden of proof, could come through with really demonstrable proof. But the companies all have the capability to put the R&D abroad because they have foreign R&D facilities. R&D decisions are made at the margins, and they are made on an after-tax basis so that R&D tax costs are certainly part of the equation.

I would caution that we shouldn't think of all R&D done abroad as something bad or wrong, because the United States has no monopoly on brain power. We want our capital and our companies to employ those scientists or those people who achieve technological breakthroughs wherever they may be in the world.

As to Professor Kaye's proposal, an off-the-cuff reaction would be that we would favor it. I can't tell you whether we would support it as a proposal per se or merely as proof of what we have been saying. The bottom line is that no member of ECAT has ever received a deduction for any 861 allocation. At one time we did a

study and the companies represented in it account for about 80 percent of U.S. industrial R&D.

So the upshot of Professor Kaye's proposal would be a 100-percent moratorium or elimination of this regulation, which would be better than what we have come to expect, in light of the many years of hurly-burly that has produced compromises and questionable temporary solutions.

To illustrate, do any of you know where the 64-percent solution came from? It was a solution that was to be two-thirds/one-third or rounded at 67/33. But at 3 o'clock in the morning that left us a little short on revenue so that 3 percentage points got knocked off; thus, the famous 64-percent solution. That is the type of thing that has been involved.

Professor Kaye's solution would be a 100-percent one. The interesting thing also about it would be that it would put the pressure where it should be, on Treasury. If Treasury really thinks that foreign countries should recognize the theoretical underpinnings of the section 861 tax policy that R&D done here benefits the worldwide enterprise, rather than telling U.S. companies to go over to Germany or Japan and get a deduction for research done in the United States, let Treasury, by treaty or otherwise, pressure these countries, because right now the pressure is on us and all it results in is double taxation.

So I think the bottom line is that her proposal would achieve a correct and fantastic result. Whether it is adopted as the solution or whether it is proof of what we have been saying, it is a good proposal in either case.

Chairman JOHNSON. Thank you.

Mr. Cardin.

Mr. CARDIN. Thank you, Madam Chairman. Let me thank all of our panelists for their testimony. This is clearly an issue that cries out for a permanent solution and not one that changes at the whim of whether we need to change it by 3 percentage points in order to work out the budget for that particular year. It is one that we really should look for permanent allocation rules as relates to these expenses.

I share the views of the other members of the subcommittee who have said we need to take a look at this when we develop permanent allocation rules as to what rewards U.S. companies for the research being done in the United States. I understand that there are advantages to U.S. operations for research done outside of the United States, but I think as far as tax policy here is concerned, we need to take a look at making sure that we encourage research here in the United States; and I have found your testimonies to be very helpful to us in that regard.

As we look at specific recommendations that come in from Treasury, we would welcome your continued working with our subcommittee so that we can try to come out with allocation rules which will reward your companies in performing research here in the United States and being as competitive as you can be in the worldwide economy atmosphere.

Thank you.

Chairman JOHNSON. I thank the panel very much, and I look forward to your response to the regulations.

Ms. Kaye, if you want to submit to us any further detail on your proposal, legal language, I would be happy to look at it. Thank you.

Thank you for your help today. The hearing stands adjourned.

[Whereupon, at 2:03 p.m., the hearing was adjourned.]

[Submissions for the record follow:]

HEARING BEFORE THE
SUBCOMMITTEE ON OVERSIGHT
COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES

on

THE RESEARCH AND EXPERIMENTATION TAX CREDIT

May 10, 1995

Written Statement
of
The American Automobile Manufacturers Association
Submitted by Price Waterhouse LLP

Price Waterhouse LLP, on behalf of the American Automobile Manufacturers Association (AAMA), appreciates the opportunity to submit this written statement concerning the research and experimentation tax credit. AAMA's member companies -- Chrysler Corporation, Ford Motor Company, and General Motors Corporation -- annually expend large amounts of capital on research and experimental activities to maintain their competitive position in the world market.

The competitive strength of the U.S. automobile manufacturing industry depends on continuing technological development. AAMA thus strongly supports a permanent research credit as critical to promoting investments in research and experimental activities that lead to technological advances. The reasons for the research credit, as expressed by Congress in enacting the credit in 1981 and in subsequent legislation extending the credit, remain equally valid today. These include encouraging companies to allocate scarce investment funds to costly research and experimental activities.

The effectiveness of the research credit hinges in part on sound administration of the rules governing the credit's operation. It is particularly important that taxpayers and the IRS agree on the scope of the credit. Unfortunately, the IRS has not proposed regulations under section 41 since the Tax Reform Act of 1986 changes to the credit. Over the past nine years, IRS agents operating without guidance appear to have adopted differing views as to what constitutes credit-eligible activities and expenses. This results in restrictive audit practices and lack of uniformity creating uncertainty for companies as they plan their research programs.

Credit-eligible expenses

The General Accounting Office (GAO) in recent reports on the research tax credit has concluded that confusion over the definition of "qualified research" has made the credit more difficult for the IRS to administer. In the absence of clarifying regulations, AAMA agrees with this assessment.

AAMA is concerned, however, about a presupposition in the GAO reports that research must result in "innovative" products or processes in order to qualify for the section 41 credit. A 1994 GAO report states, "The requirement that research be truly innovative to

qualify for the credit will mean that administering the credit will continue to be labor-intensive and to involve judgments about highly technical matters."[1] A 1995 report states, "IRS officials reported that they were required to make difficult technical judgments in their audits concerning whether research was directed to produce truly innovative products or processes."[2] The 1995 report summarizes, "Innovative research qualifies for the credit; routine research does not."[3]

Contrary to the presupposition in the GAO reports, there is no general standard that the results of research activities must be "truly innovative" in order to qualify for the credit. Indeed, the only reference to any type of innovation standard in the section 41 statute or the 1986 Act conference agreement relates to the credit-eligibility of costs of developing internal-use software. The 1986 Act conference agreement states that Congress intends that Treasury issue regulations providing that internal-use software, in order to qualify for the credit, must be "innovative (as where the software results in a reduction in cost, or improvement in speed, that is substantial and economically significant)."[4] The fact that Congress specified an innovation test in order for internal-use software to qualify for the credit makes clear that there is no general innovation standard applicable to other development costs.

A generally applicable innovation standard indeed would be difficult to administer. IRS agents and taxpayers would be embroiled in continuous disputes assessing the relative technological advances made by one product or component in relation to another. Congress did not intend such a restriction when it enacted the 1986 Act's targeting changes to the credit.

Instead, the 1986 Act definition of "qualified research" eligible for the credit starts with a requirement of section 174 qualification (relating to the treatment of costs as deductible R&E expenditures) and provides further clarifications. In order for expenditures to be eligible for the research credit, the 1986 Act provided that (1) the research activities must be aimed at discovering information that is technological in nature, (2) substantially all the research activities must relate to functional aspects of the product, process, etc., and (3) substantially all the research activities must constitute elements of a "process of experimentation."

These rules focus on the activities undertaken by the taxpayer -- e.g., whether the activities were part of a process of experimentation -- not on the product resulting from the research activities. There is no requirement that products or processes be innovative; the tests envision that the credit also is available with respect to research activities that support evolutionary improvements to products and processes.

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[1]Pharmaceutical Industry's Use of the Research Tax Credit (GAO/GGD-94-139, May 1994), p. 23.

[2]Additional Information on the Research Tax Credit (GAO/T-GGD-95-161, May 1995), p. 13.

[3]Id. at 1.

[4]H.R. Rep. No. 99-841, 99th Cong., 2d Sess. (Sept. 18, 1986) at II-73.

Section 41 regulations

IRS regulations clarifying the definition of credit-eligible activities and expenses would help taxpayers plan their research programs and would minimize many disputes currently arising with respect to the credit. It is important that any regulations maintain the scope of credit-eligibility that was outlined by Congress in 1986. As a general rule, the section 41 regulations should embrace a principle envisioned by the 1986 Act conference agreement and set forth in final regulations under section 174. These regulations provide that the determination whether product development costs qualify as research or experimental is based on "the nature of the activities," rather than on the nature of the product or improvement being developed or the level of technological advancement the product or improvement represents.

The final section 174 regulations, issued in September 1994, were the product of a dialogue between the IRS and affected taxpayers, including AAMA's member companies. A similarly reasoned approach needs to be taken -- and commenced soon -- in formulating guidance on the section 41 research credit. In the absence of regulations, uncertainty over the definition of credit-eligible expenses will leave the IRS and taxpayers enmeshed in resource-consuming audit disputes and will create uncertainties that diminish the incentive effect of the research credit.

James R. Shanahan, Jr.
Washington National Tax Services
Price Waterhouse LLP
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STATEMENT OF

THE AMERICAN GAS ASSOCIATION

I. Introduction

Madame Chairwoman and Members of the Subcommittee, thank you for the opportunity to submit this statement on ways in which our tax code can promote needed private sector research and development (R&D).

The American Gas Association (A.G.A.) is a national trade association comprising some 275 natural gas distribution and transmission companies throughout the United States, Canada and Mexico. These firms deliver gas energy from the wellhead, and various unconventional sources, to the burner tip, serving over 58 million customers. Collectively, 90 percent of the gas consumers in this country are served by A.G.A.'s members.

A.G.A. supports the extension of the existing research and experimentation (R&E) tax credit in Internal Revenue Code (IRC) Section 41, which expires on June 30, 1995. Additionally, we strongly support modifying existing law in IRC Section 41 by providing an optional 20 percent flat credit for expenditures made to support research that is done collaboratively for the public benefit by not-for profit organizations. According to this modification, a flat 20 percent collaborative R&E credit would be provided for energy conservation, safety, environmental, manufacturing process or other research of public importance conducted by teams of companies or utilities through a non-profit scientific research organization. This modification would complement, but not supplant, the existing incremental tax credit.

The R&E tax credit is more important now than at any time in its history. International competition is growing. Industry is forced to cut expenses wherever possible. The federal government is cutting its investment in energy-related R&D. Federal policies supporting a strong private sector commitment to R&D need to be enhanced. In order for the R&E credit to effectively promote new and relevant research, it must be designed in a way to encourage collaboration. Collaboration is often the most efficient means of conducting research and achieving the best results with scarce R&D resources.

Many of A.G.A.'s members are members of the Gas Research Institute (GRI), which was founded in 1976 by a committee of members of the boards of directors of A.G.A. and the Interstate Natural Gas Association of America. GRI is the leading research, development and demonstration management organization of the natural gas industry. Its mission is to discover, develop and deploy technologies and information that measurably benefit gas customers and enhance the value of gas energy service. GRI accomplishes its mission by planning and managing a consumer sensitive, cooperative research program emphasizing technology transfer. GRI conducts its R&D program in cooperation with its member companies and other participants who provide funding as well as input for the programs content and direction.

GRI is funded by a surcharge collected by its interstate pipeline member companies through tariffs approved by the Federal Energy Regulatory Commission (FERC) for natural gas transportation services. GRI is a medium through which a number of our members can sponsor industry-related research in both pure and applied sciences.

II. Benefits of a Collaborative R&E Tax Credit

A flat 20 percent tax credit would provide companies contributing to consortia a significantly greater incentive than the current credit. This modification will complement and enhance, rather than interfere with R&D conducted pursuant to the current law. A collaborative credit would encourage a greater private sector response to possible

reductions in government-sponsored research. The collaborative credit would be a stimulus for new research, as is the goal of present law. Such a credit would clearly benefit natural gas and electric power research that is essential to all other manufacturing and consumer applications.

The importance of R&D can best be described in terms of who benefits. Natural gas industry sponsored R&D results in lower costs and higher-quality gas energy services for gas consumers. Ultimately, producers, pipelines, distribution companies, manufacturers and customers benefit from new technologies that increase the availability of cost-competitive gas supplies; provide safer, more cost-effective gas industry operations; develop uses for natural gas that provide cost or performance advantages over other energy sources and enhance environmental quality.

Consortia research is far more efficient on a dollar spent-dollar deployed R&D basis. When firms join R&D consortia, they reduce redundancies, spread risks and costs, share in the results achieved and promote technology. In consortia research, overhead is reduced to that of managing the collaborative pathways and decisions on research subjects.

In addition to reducing the duplication of research and stimulating new R&D, a consortia could prove to be a fertile and robust environment for the deployment of new technology. The consortia environment combines both suppliers and users of the R&D such that the widest market for the implementation of technology is assured. By encouraging collaboration, the credit would help speed the discovery of innovations because it would serve to pool the experiences of a variety of firms.

Technology deployment is the means by which advanced manufacturing technologies, either equipment, software, processes or management techniques, find their way from development to practical application. Sustained, expeditious and effective technology deployment is essential for R&D to have a practical positive impact.

III. Current R&E Tax Credit Discourages Collaborative Research

While the current R&E tax credit was enacted to encourage the kinds of research that are conducted by research organizations such as GRI, it has failed to encourage collaborative R&E conducted by a consortium. The tax law does not adequately address several issues that affect collaborative research and the full use of the R&E tax credit is being restricted in ways not contemplated by Congress.

Typically, consortium members pool their funds and contract with third party research organizations to carry out the research. Current law limits the tax credit to 65 percent of the amounts paid by the taxpayer for contract research conducted on the taxpayer's behalf. The outside contract research provision was placed in the Tax Code to ensure that the credit would not reward overhead beyond the scope of the R&D definition. Therefore, there is less incentive for consortia-based R&E than R&E conducted by individual companies at their own research facilities.

The benefits of the credit for collaborative research are restricted further because of considerations relating to the "carrying on a trade or business requirement" of Section 41.[1] For example, GRI conducts research on the energy efficient use of natural gas in home furnaces, industrial processes and commercial cooling. Since this research does not have a direct link to an interstate pipeline's business of delivering natural gas, the Internal Revenue Service has determined that current law does not allow this research to qualify for the tax credit.[2] These issues present a major disincentive for collaborative research contributions.

Current law encourages R&D only above a base amount because it seeks to reward R&D that would not otherwise occur in the absence of the credit. However, the base beyond which the credit applies is determined on an historic ratio of R&D to sales. This concept may be appropriate when applied to an individual companies focusing on product innovation. When this concept is applied to utilities and their energy partners, the economic assumptions underlying the incremental credit are incorrect.

First, the connection between R&D and gross receipts in the utility industry is not always present. While product R&D is conducted with the goal of increased sales, utility research will often not lead to increased territory or product sales. If research is related to energy efficiency, it may even lead to the opposite result -- less energy consumption and lower gross receipts -- as natural gas appliances, gas fired electric generation, and transmission are made more efficient.

Second, basing the tax incentive on incremental increases in R&D is not appropriate in the context of consortia research. On a national level, collaborative R&D is only a small fraction of all R&D being spent. When firms collaborate, R&D is done in the most efficient manner since costs and benefits are pooled, and duplication is reduced. When firms collaborate, some duplicative research they would have done on an individual basis (and for which they may receive the incremental credit), is done more efficiently. Applying the incremental approach to consortia research places an unnecessary and socially counterproductive barrier on collaboration.

Unique Nature of Research by Utilities

Some natural gas R&D projects have significant costs, high risks and, at best, a long-term return on investment. Additionally, much of the research done by GRI involves the development of new processes or uses for natural gas. While this type of R&D has greater overall benefits to the industry, it is unlikely to be conducted by one gas company who cannot typically recapture the R&D dollars by selling the new process or use. The competitive environment inaugurated by the deregulation of the natural gas industry has made it more difficult to sponsor R&D that does not involve an immediate return on investment.

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[1] Section 41 of the Internal Revenue Code requires that "qualified research expenses" include certain amounts paid or incurred by the taxpayer during the taxable year in carrying on any trade or business of the taxpayer.

[2] In Regulation Section 1.41-2, the Internal Revenue Service has stated that a "contract research expense of the taxpayer is not a qualified research expense if the product or result of the research is intended to be transferred to another in return for license or royalty payments and the taxpayer does not use the product of the research in the taxpayer's trade or business."

Unlike product-specific R&D, energy conservation R&D may actually result in decreased use of the product that gas companies sell -- energy. Individual utility companies have less of an incentive under the current credit to invest in R&D to develop technologies that reduce consumers' costs or preserve the environment through greater energy efficiency because these technologies will lead to reduced sales for utility company.

It is in the public interest to encourage greater levels of environmental and energy efficiency research. Research that serves a public purpose usually requires a collaborative effort, rather than the commitment of a single company. These obstacles make it nearly impossible for an individual gas company to undertake public interest research.

It is possible that government-sponsored R&D may be curtailed as a result of efforts to cut government spending. Therefore, we must look towards more private sector, industry-based solutions to meet public needs. While the tax code is the only true private-sector incentive for R&D, its current requirements do not promote needed consortia research nor ensure adequate levels of energy R&D.

The purpose of the R&E credit is not just to promote R&E, but to promote technological innovations that will have a practical positive effect on our standard of living. In contemplating changes to the credit, the Subcommittee should, in addition to rewarding incremental individual research, seek to encourage companies to utilize their limited R&D dollars through collaboration. The discussion of this issue should be advanced beyond the perennial call to extend the credit; we should consider the best way to structure the credit to achieve its ultimate objectives.

The National Academy of Engineering has endorsed the concept of a collaborative R&E tax credit. Specifically, a recent Academy Study Commission looking at various measures to increase the level of stability of R&D through tax policy recommended:

> [that we] replace the current incremental Research and Experimentation tax credit with a permanent tax credit on the total annual R&D expenditure of a company to encourage an increase in the level and the stability of R&D activity across business cycles. In addition, extend the R&E tax credit to cover industry-sponsored R&D in universities, and other institutions, and the industrial contribution to R&D performed as a part of a consortium that includes government laboratories.

IV. Conclusion

We urge Congress to promote a domestic tax policy which fosters R&E conducted cooperatively. The collaborative R&E credit leverages research dollars while encouraging more efficient use of limited resources. The credit will encourage new research as it spreads risks and costs among consortia members. The credit will eliminate duplicative research that would otherwise be conducted at higher costs to individual companies.

The federal government must be as creative as industry in providing a fertile environment for the growth of R&E. It must recognize that other nations have not been complacent in expanding research opportunities, but have developed and nurtured a technology development and deployment infrastructure that is based on collaboration. We must begin immediately to take the steps needed to promote this environment in the United States. Encouraging research that would not otherwise be conducted is the primary justification for the R&E tax credit. Making a change that would enhance and encourage collaboration would greatly advance the underlying policy goals of current law. We urge Congress to extend the present credit and to include a modification to allow for a 20 percent credit for collaborative research.

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STATEMENT BY THE AMERICAN PETROLEUM INSTITUTE
FOR THE PRINTED RECORD OF THE MAY 10, 1995
HEARING
OF THE SUBCOMMITTEE ON OVERSIGHT
OF THE COMMITTEE ON WAYS AND MEANS,
U.S. HOUSE OF REPRESENTATIVES,
ON

EXPIRING TAX PROVISIONS,
INCLUDING THE RULES ON
THE ALLOCATION OF RESEARCH EXPENSES
UNDER THE INTERNAL REVENUE CODE OF 1986

The American Petroleum Institute (API) is a trade association of approximately 300 companies involved worldwide in all phases of the oil and gas industry, including exploration and production, transportation, refining and marketing, as well as petrochemical processing.

Because of the competitive significance and rising costs of research in an era of continuing growth of the foreign operations of its members as multi-national enterprises (MNEs), API welcomes the opportunity to submit its views on the importance of reasonable and reliable rules on allocation of the expenses of research and experimentation (R&E).

1. History of Rules Evidences an Awareness That Section 174 Must Not Be Diluted by Double Taxation, but Lack of Permanent Rule Instills a Chilling Uncertainty

The history of the rules on the allocation of the cost of R&E within the last 15 to 20 years reflects the awareness of the need of an allocation regime that respects the U.S. nexus of R&E and the need to avoid a frustration of the tax policy behind the R&E expense (R&EE) deduction under Code section 174. Unfortunately, the R&EE allocation rules have one of the most unstable histories of any Code provision; a brief summary will demonstrate this unfortunate aspect.

The first R&EE allocation rules under the 1954 Code were published in 1957 (T.D. 6258, 1957-2 C.B. 368). With the increasing focus on the sourcing rules as a consequence of the rising importance of the foreign tax credit, the U.S. Treasury Department (Treasury) proposed amendments in 1973 (38 F.R. 15,840[1973]), which after modifications in response to taxpayer comments led to Treas. Reg. section 1.861-8(e)(3)[the Basic Regulations]. The rules are complex and biased towards allocation of R&EE to foreign source income.

However, since 1981 these Basic Regulations have been

suspended and replaced by temporary favorable regimes no less than TEN times:

1) In ERTA 1981 Congress suspended the Basic Regulations for two years and directed 100% U.S. allocation (the Moratorium); the primary concern was that R&EE should not be allocated to income earned in a country that does not allow a deduction for the cost of research conducted in the U.S. Obviously, the disallowance of a deduction against both U.S. income and against the income in the host country will result in double taxation.

2) In response to a recommendation by Treasury, Congress extended the Moratorium (100% domestic allocation) by another 2 years in DEFRA 1984. Again, the rationale was that it was inappropriate to require allocation of U.S. R&EE to foreign source income, and that any loss of foreign tax credit would conflict with the tax policy underlying the section 174 deduction.

3) COBRA 1985 brought a one year extension of the Moratorium. At this point, three fragmented statutory "fixes" allowed taxpayers to allocate all R&EE incurred between August 1981 and August 1986 to U.S. source.

4) For taxable years beginning before August 1, 1987, the Tax Reform Act of 1986 continued with a more limited suspension of the Basic Regulations; the unqualified domestic allocation under the Basic Regulation was reduced to 50%.

5) After several failed Administration proposals of a pre-emptive (before application of the Basic Regulations) 67% U.S. allocation of U.S. R&EE, TAMRA 1988 finally approved a 64% domestic allocation, for the first four months of taxable years beginning after August 1, 1987.

6) OBRA 1989 revived the rule in Code section 864(f) for the first nine months of the first taxable year beginning after August 1, 1989.

7) OBRA 1990 again extended section 864(f).

8) A further "fix" is found in the Tax Extension Act of 1991 for the first six months of the first taxable year beginning after August 1, 1990.

9) The Internal Revenue Service (Service) published Rev. Proc. 92-56, 1992-2 C.B. 409, which allowed taxpayers to allocate according to section 864(f) for another 18 months. The Service acknowledged that the Basic Regulations may not reflect economic reality or good tax policy and promised a review of the allocation issue (which study finally was released on the 19th of this month, see below).

10) Most recently OBRA 93 revived section 864(f) for the first taxable year beginning on or before August 1, 1994, but reduced the automatic allocation to 50%.

With the expiration of the 1993 extension the rules of the Basic Regulation come to bear again. Since their promulgation 18 years ago, the Basic Regulations were suspended most of the time. This is a clear indication that the Basic Regulations are not perceived as a good rule. At the same time, the "on and off"

effect of the repeated extensions of the moratoria adversely affected the tax planning for research activities. The continuing threat of having domestic R&EE allocated to income earned in a country which does not allow a corresponding deduction and the ongoing exposure of a reduction of the foreign tax credit limitation have diluted or eliminated for MNEs the purported attractiveness of current deductibility of R&EE, representing a conflict in tax policy and sound tax administration.

On May 19, 1995 the Service promulgated a proposal to liberalize the Basic Regulations (Notice of Proposed Rulemaking, INTL 23-95). According to Prop. Treas. Reg. section 1.861-8(e)(3)(ii) the percentage of R&EE that may be exclusively apportioned to U.S. source income under the sales method would be increased from 30 percent to 50 percent. Concurrently Treasury issued its study "The Relationship Between U.S. Research and Development and Foreign Income" (the Treasury Study).

While the Treasury Study claims that the Basic Regulations "may be correct on average," it concedes that the 1977 rules "may be unfair to a significant number of taxpayers." Using 1990 data, the Treasury Study compared the allocation of R&EE incurred in the U.S. against foreign source under the Basic Regulations with past or proposed alternatives. The relative allocations under the expired OBRA 93 regime and the Proposed Regulations are 50% vs. 75% of the amount under the Basic Regulations.

2. The Desirability of Keeping Research in the U.S. and the Effect on Competitiveness of U.S. Companies in the Global Market (Double Taxation) Recommend a Permanent Realistic and Equitable Allocation Rule

Research is a vital factor in the economic growth of the United States. Particularly in a era of a lamented loss of manufacturing jobs to lower cost overseas production bases, a strong investment in technological development is an opportunity for the United States to maintain leadership in world trade and to assure the welfare of her people by securing challenging employment opportunities at home. Opportunities for research jobs will prevent the emigration of high skilled workers or, figuratively speaking, the waste of their talent in having to find employment in the proverbial fast food centers. The future of the quality of the U.S. labor force will depend to a great extent on the continuing investment in the creation of intellectual property and know-how in this country.

Thus, from the perspective of the nation's well being and economic strength, the promotion of domestic research is essential. We must remove any actual or perceived obstacles to making U.S. the primary choice of a MNE's research location. This includes the assurance of a deduction of R&EE incurred in the U.S. against other U.S. source income.

Under the Basic Regulations, MNEs with foreign source income obviously are denied to a great extent a deduction for U.S. tax purposes, although the research is physically carried on in the U.S., employing the talent of the U.S. job market and, more likely than not, the equipment and facilities from U.S. manufacturing output. Against this background of what one could view a U.S. tax penalty, MNEs may look to foreign countries which provide substantial incentives for locally conducted research.

Being under a pressure to maximize the marginal utility of each research dollar, the MNE may find itself having to move the research to the economically more hospitable (because of direct subsidies or tax breaks) foreign environments, reducing the opportunity of challenging U.S. research jobs and curtailing or eliminating the market for U.S. equipment and facilities.

Moreover, the allocation of U.S. R&EE deductions to foreign source income is flawed not only because it may lead to a migration of research activities to a more "hospitable" foreign country (which allows a favorable deduction or a direct subsidy, removing the double taxation exposure under the Basic Regulations), but also because the rationale of the R&EE deduction under Code § 174 obviously conflicts with the effective canceling out of that benefit as a result of the loss of foreign tax credits.

The current deductibility of R&EE under section 174 is an award for the risk taker, which serves as an encouragement as well as a means of providing a source for reinvestment in form of the cash flow from the deferral of tax on other income due to the current expensing of R&EE; the normal concern for matching income and expenses has no place in this context. This rationale must trump any effort to match a domestic deduction with arguable generated foreign source income. The general income/expense matching mandate does not apply here.

The repeated temporary legislative "fixes" of the ill conceived Basic Regulations must be turned into a permanent relief; domestic R&EE should always be allocated (at least predominantly) against U.S. source income. While the Proposed Regulations of May 19 are a step in the right direction, Treasury's own numbers indicate that still too much of domestic R&EE would be allocated to foreign source income, in disregard of the rationale behind the deduction under Code section 174.

STATEMENT FOR THE RECORD
CONCERNING THE TARGETED JOBS TAX CREDIT

BY:
Tzipporah Benavraham
Brooklyn, NY

Congressmen, policy makers, and members of the Oversight Subcommittee, I am pleased to address you this day regarding the issue of the Targeted Jobs Tax Credit Reauthorization, and the issues of how it has helped persons with physical disabilities find work. I am grateful you are affording me the opportunity to be heard and hope that you will weigh my comments well and keep this very important law in effect for the physically disabled who desire the opportunity to work.

I am well aware of the talk concerning the issues of welfare reform and the unfunded mandates. I know that there are any problems this country has faced with an economy that looms hard on the next generation and on issues of budget. However, government and public policy has always looked for ways to protect those who cannot help themselves as there is a recognition that we are our brother's keeper and have a heartfelt and moral pledge to show compassion to those less fortunate. There have been grave errors in public policy over the years. However, many times there are answers formulated by policy makers to help the populations they intend to serve.

I myself suffer from a painful and degenerating disease called multiple sclerosis. I am legally blind, use a wheelchair, and a ventilator. However, by the good graces of a society that is aware of the needs of the poor and sick, we have established ways that I received rehabilitation, obtained medical equipment, and most noteworthy, I received an advanced education. With my graduate degrees, I sought to become an educator of disabled technology. I run a small laboratory at three colleges in New York City teaching disability technology since 1986. By the good graces of the National Science Foundation Handicapped Assistance Facilitation Award in 1991, I lectured and published concerning the access disABLED persons have to the emerging technologies. And proudly I mention that of the 870 students I have taught since 1986, I have over 200 who are disabled and graduates of my education processes. I also have the grace of being on the Board of Directors of the People to People Committee on Disability since 1992, which was established by President Dwight D. Eisenhower in 1956 as an international outreach on disability information to other nations.

However, recently my part time profession of being an adult and college educator has been curtailed dramatically in New York. It occurred to me since I am well published but credentialed, I should seek out ways that I can ply my craft and share my knowledge with others. Since I am blind, I went to the New York State Commission for the Blind and obtained in February the Targeted Jobs Tax Credit forms from the senior counselor and went with these to the Labor Department handicapped counselor to seek out another college in the city where I might find work. You see, I would need to have ramps, an accessible bathroom, adaptive technology and a few costly accommodations on any job site. Where I am now, as a part-timer, I have no medical insurance because I am both part time and also have a pretty severe pre-existing condition for insurance purposes. The extra amount of money it takes to hire a person like me is a serious issue to any potential employer if they do not already have these accommodations in place, or if they have no cash upfront to pay for the accommodations I need. The Americans with Disabilities Act is wheat your Congress considers an "unfunded mandate". yet this provision of the Targeted Jobs Tax Credit

can often cover the cash needed that an employer may NOT have to retrofit and hire someone of my qualifications. They may weigh heave whether or not there is money for these accommodations if there were no way to "sweeten the deal" so to speak by having a tax credit and incentive up front to justify the process of proceeding with the interview. Here with the TJTC, as well as section 190 of the IRS code which allows for retrofits for the handicapped access accommodations, as well as section 44 of the IRS code, allow for the most broad funding of the provisions that my life easier in a job hunt.

By the good graces of this country, which has the best educational system in the world, I have achieved the status of being "qualified" for a job DESPITE my physical limits. However, the "leg up" needed is clearly in the incentives a person would have to hiring someone with my qualifications. I studied the emerging technologies in hopes that I wold find a way to incorporate the disabled into them as they progressed. And with the hope in hand, I worked with the National Science Foundation's handicapped coordinator, Dr. Larry Scadden, and the luminaries of our time in this realm, such as Dr. Greg Vanderheiden, Dr. Norman Coombs, and Dr. Gary Woodill. I gleaned and interacted in hopes of finding employment in this realm, and obtained many credentials to help me fulfill this goal.

But I wold like to impart to you how the LACK of this law being currently in effect has HURT my job hunt. There is a college in New York City which was looking for a handicapped student coordinator. It is well known for its technology training and education. The labor department referred me to this college. However, there is NO handicapped bathroom ON CAMPUS, no adaptive technology, and the concern also was that with my disability of multiple sclerosis, that their insurance premiums would rise to cover my needs. It was a referral to a full time position. There was an extreme reluctance when they noted this provision of TJTC had NOT been in effect at the time of the interview. In that I was told I would be "considered" for the job BUT there was economic factors which would have FIRST have to be dealt with.

In yet another job interview with a Fortune 500 company, I was clearly the most qualified person. It was a major company wanting to make their publications available for the disabled online as a new commercial enterprise. They needed a person proficient in disability access issues to online materials as well as someone who knew the machinery of the online productions. I invite all here in this hearing to look at my internet project and site of the St. John's University Electronic Rehabilitation Resource Center at gopher. sjuvm.stjohns.edu. I and my students placed over 485 megabytes of materials on disabilities online on the internet since 1989 when it began for free. The employer who I interviewed with was clearly impressed and said he never saw anything else like it. However, the issue of insurance and my own personal needs for adaptive equipment was an issue since he asked about costs and clearly had some degree of consternation about the figures he came up with. However, with section 44 of the IRS code AND Targeted Jobs Tax Credit (if it had been in effect at the time of the interview) as well as this large business being able to also use the section 190 of the IRS code (which it could not at this time since it made over one million dollars a year in gross receipts), I MIGHT have been able to obtain this $75,000 a year job. The lack of any incentive or fund to pay for those accommodations made ME a LESS desirable candidate for the position DESPITE what the interviewer said were superior credentials. It seemed they lacked a budget for an employee who may need accommodations to do the job. In that, the lack of that credit or provision made me lose the position to another person. And my frustration was great.

Congressman, I WANT to work. I WANT to be able to find a barrier-free environment both to live and work in. I HAVE worked, albeit part time. However, I HATE having to by no choice of my own sit on Supplemental Security Income (SSI) and NOT work, when I have the ability to work IF barriers are eliminated.

I would hope that technology can be part and parcel of the new avenues to dignity for disabled persons. However, the power of the incentives in labor laws and tax laws can help us fund our own ways to independence. Without a national health care system, the physically disable are relegated to poverty and a trap-like situation. We have scarce options to get out of the cycle of dependence. I encourage your committee to consider the reestablishment of the provisions of this law: the Targeted Jobs Tax Credit.

I would also seek that Congress establish a way that in tax law and in labor law allow for the accoutrements for technology access for persons with disabilities as well as for other incentives. It would be a fine idea to extend and help businesses use the section 190 and section 44 sections of the IRS code to hire more people with disabilities. With a reauthorization of the TJTC, Congress might consider a special category of incentive for hiring people who are handicapped for the employers.

It would bode well to help the disabled become equals in the new developments for the new information technologies. I think giving industry an incentive to have certain disability access in their hardwares and softwares off the shelf may also be a good idea. The initiatives of Dr. Larry Scadden of the National Science Foundation in the topic of Universal Design may well be a keystone and marker for Congress to give an incentive to industry to develop. Built in large print and voice synthesis, as well as alternate keyboard configurations may be worth supporting in the information technology industry of the future. Home-based computer businesses are rising. It would be a good idea to help include the disabled in the plans for the new information industries as we progress in our newer industry developments.

Thank you for letting me address you today at this hearing. I am hoping these ideas will bear weight in your deliberations and that I gave you serious points to ponder. I am hoping I have mirrored a real concern to preserve these special tax credits and help the disabled better help themselves. Thank you.

Hearing before the
Subcommittee on Oversight
Committee on Ways and Means
U. S. House of Representatives

on

Allocation of Research Expenses

May 10, 1995

Written Statement
of
William F. Ausfahl, Chief Financial Officer
The Clorox Company

The Clorox Company appreciates the opportunity to submit this written statement concerning the need for a permanent set of rules governing the allocation of research and experimentation (R&E) expenses. Clorox is the leading U. S. manufacturer of home cleaning products and liquid bleach. These products include Pine-Sol, Soft Scrub, Formula 409, and Clorox liquid bleach. These and many other household products are sold in more than 90 countries worldwide.

Clorox strongly believes that a permanent solution to the rules governing the allocation of R&E expenses is needed and that these rules should not be a disincentive to conducting research in the United States. It is essential that the Congress and the President provide certainty in this area of the tax code, which is of vital importance to the competitive position of U. S. multinationals and to maintaining the U. S. job base.

R&E allocation regulations under Treasury Reg. Sec. 1.861-8(e)(3), issued in 1977, generally provide that taxpayers may automatically allocate 30 percent of research performed in the United States against U. S.-source income. The interplay of these rules with the foreign tax credit can increase the cost of performing research in the United States. Congress on nine occasions has overridden the application of the 1977 regulations because of concerns that the 1977 regulations would encourage U. S. multinational businesses to shift research activities abroad.

Clorox applauds the action taken by Congress most recently--as part of the Omnibus Budget Reconciliation Act of 1993--to suspend application of the 1977 regulations. The rules under the 1993 Act, which provided for a more favorable 50 percent automatic allocation, expired at the end of 1994 for calendar-year taxpayers. Clorox believes permanent rules, statutory or regulatory, should quickly be implemented which provide for at least a 50 percent automatic allocation of U. S.-based research to U. S.-source income.

Research and development is a cornerstone of a growing economy. This is attested to by the significant incentives to attract research activities that have been enacted in recent years by numerous other countries. In the United States, the importance of research is reflected in part by the section 41 tax credit for increasing R&E expenditures, which enjoys strong support from lawmakers of both sides of the aisle and the Clinton Administration. U. S. rules for allocating R&E expenses should work hand in hand with the research credit to help the United States compete in an increasingly global economy.

Action on the R&E allocation rules needs to be taken this year--either through legislation or regulations--that recognizes the importance of U. S.-based research activities. Otherwise, taxpayers will be left with the 1977 regulations and their detrimental impact on the U. S. economy. It also is important that policymakers settle on a permanent solution, which would end 18 years of complexity, confusion, and controversy in this area.

Statement for the Record of
David O. Webb, Senior Vice President
Policy and Regulatory Affairs
Gas Research Institute

for R&E Tax Credit Hearing

May 10, 1995

Gas Research Institute (GRI) appreciates the opportunity to provide testimony for the Record relating to the Research and Experimentation (R&E) tax credit. We believe research and development (R&D) is the lifeblood of improvement in products, processes, efficiency, and productivity. The current R&E tax credit should continue and should be extended permanently. Annual extensions or extensions for only a few years at a time do not provide a stable base for planning and conducting research, especially long-term research that may require five to ten years to complete.

The current tax credit has not inspired the level of R&D which we as a nation must promote to keep pace with an ever increasing competitive world market and the need for collaborative R&D. Therefore, we urge consideration be given to the proposed modification of the existing law to provide for an optional 20% flat credit for contributions to research that is done collaboratively. Collaborative research is normally performed for the public's benefit by not-for-profit scientific and educational organizations. This would serve as an important incentive for the private sector to increase its commitment to collaborative research.

GRI is a not-for-profit 501(c)(3) organization established by the gas industry to conduct broad collaborative research and development programs for the industries, their customers and society.

GRI was founded in 1976 by a Committee of members of the boards of directors of the American Gas Association (A.G.A) and the Interstate Natural Gas Association of America (INGAA). Consequently, GRI is the research, development and demonstration (RD&D) management organization of the natural gas industry. Its mission is to discover, develop and deploy technologies and information that measurably benefit gas customers and enhance the value of gas energy service. GRI accomplishes its mission by planning and managing a consumer sensitive, cooperative research program emphasizing technology transfer. GRI conducts its R&D program in cooperation with its member companies and other participants, who provide funding as well as input for the programs content and direction.

GRI is funded by a surcharge collected by its 37 interstate pipeline member companies through tariffs approved by the Federal Energy Regulatory Commission (FERC) for natural gas transportation services. Regulatory bodies in the 50 states and the District of Columbia are automatic intervenors in the FERC review of GRI's programs. GRI's 326 members include natural gas interstate pipeline companies, natural gas producers, investor-owned distribution companies and municipal gas utilities. Membership in GRI is totally voluntary.

When the current R&E tax credit measure was written it was intended to address the kinds of research that is conducted by organizations such as GRI, i.e., the technologies themselves. However, as written, it does not adequately address research conducted by collaborative organizations. Because of this discrepancy, the R&E tax credit is being restricted in ways never contemplated by Congress, and indeed, is inconsistent with Congress' express intent. In addition, restrictions are often placed on the remainder of the contribution because of questions relating to the "carrying on any trade or business requirement" and the transfer of the research results to another entity in return for license or royalty fees under the current law. As an example, GRI conducts research on the more efficient use of natural gas in home furnaces, industrial processes and commercial cooling. However, since this research does not have an absolute direct link to the pipeline's business, the IRS has determined that the current law does not allow this research to

qualify for the tax credit. These unresolved issues present a major disincentive for collaborative research contributions.

Although the current law has been somewhat useful in stimulating R&E conducted by firms at their own research facilities, the law fails to encourage collaborative R&E conducted by consortia. Typically, consortium members pool their funds and contract with a third-party research organization that carries out the actual research. The current law reduces the tax credit by one-third by limiting the credit to 65 percent of the full value of this type of research (i.e., research that is contracted out) compared with the tax credit for research conducted in-house. Thus the current law does not provide as much of an incentive for consortia-based R&E as it does for R&E conducted by individual firms at their own research facilities.

Collaborative research has many advantages over individual research. Primarily it pools limited R&D dollars. Additionally, collaborative research can bring together all entities needed to research, develop, and market the results often more quickly and efficiently than a single entity. And, finally, collaborative research diminishes the chance for duplicative research which wastes valuable research dollars. Attached are types of successful collaborative research which has been carried out by members of GRI.

It is in our national interest to correct the inequity between the tax credit for in-house research versus consortia-based research. Consortia-based R&E can be very effective in reducing overhead costs and in assuring that research results are quickly made available to a broad industry segment. Equally important, much of the research conducted collaboratively by consortia, such as collaborative research conducted by the energy industry, involves technology to use a product more efficiently. Collaborative, consortia-based research often is research that would not otherwise be conducted because it is too costly, too risky, or too long term to undertake individually. While this type of research is of great value to the consumer and to our nation, it does not necessarily result in increased sales or profits to individual organizations, and therefore, will not be a priority.

One proposal for improving the credit is to modify the credit to reward contributions to research that is conducted collaboratively -- research conducted by teams of companies or utilities through a 501(c)(3) scientific research organization like GRI or Electric Power Research Institute (EPRI).

A flat 20 percent tax credit will provide contributing firms a significantly greater incentive on a comparative basis than the current credit. Such a modification will complement rather than interfere with existing law, would not have major revenue implications, and will improve the credit in several ways. In the words of former Treasury Secretary Bentsen, such a modification "can significantly improve the efficiency and effectiveness of the R&E tax credit." By encouraging collaboration the credit would:

- Encourage research that would not otherwise be conducted to be done in the most efficient manner by eliminating duplicative R&D on matters of wide public policy importance and interest to the firms (such as energy efficiency, environmental, or manufacturing process R&D). The credit will therefore assist in rewarding firms least able to recapture -- and who may never recapture -- their expenditures.

- By reducing redundant R&D, a collaborative modification will save increasingly limited private funds that can be devoted to R&D, and it will also save public funds by improving the efficiency of the tax credit itself by encouraging firms to take the collaborative R&E tax credit when they pool their research efforts.

- Most importantly, a collaborative credit modification will advance the main underlying policy goal of the existing credit most effectively by encouraging new R&D. That is because "incentivizing" collaboration will either encourage more efficient R&D or will encourage new research by spreading costs and risks.

- By encouraging collaboration, the credit would help speed discovery of innovations by pooling experiences of firms, and it will encourage speedy deployment of R&D results

to a broad base of parties. Part of the reason for the accelerated deployment is that consortia typically involve both users and consumers of technology.

The proposed modification is as timely as it is relevant. As Congress looks for ways to reduce the federal budget, federal R&D is a function often targeted for major spending reductions. In view of the proposed federal budget cuts for R&E, the tax credit modification is a means of promoting R&E for the public benefit funded by the private sector. With the proposed elimination of federal programs and significant cutbacks in funding for energy R&E, federal research programs inevitably will be reduced in size. Unfortunately, many of the critical gaps in these research programs, such as research on energy and the environment and improvement in efficiency, will not be filled by the for-profit private sector. Such research activities are often the last conducted by the private sector because these research dollars are the most difficult to recapture in sales over the short term. In the case of the regulated natural gas industry and the electric utility industry, these expenditures often cannot be completely recaptured through the rate base.

As Congress reduces federal spending for research, encouraging collaborative research through the proposed modification to the R&E tax credit will provide the means to speed the transition to more private sector research in a cost-effective manner. Moreover, the proposal will fill the research gap by privatizing decisions about the scope and nature of such research.

I respectfully ask for your serious consideration and support to extend the current R&E tax credit and to modify it to provide a flat 20 percent credit for collaborative R&E conducted through not-for-profit 501(c)(3) scientific research consortia. As Congress takes steps to reduce the size of the federal government and corresponding federal funding for research, your support for an R&E tax credit that encourages collaborative, consortia-based research in even more crucial.

DOT Approves Using Clock Spring

The natural gas industry has received permission from the U.S. Department of Transportation to use Clock Spring®, an advanced pipeline-repair technology developed through the sponsorship of the Gas Research Institute.

A waiver filed with the Federal Register by the DOT's Research and Special Programs Administration is expected to significantly expand the use of the technology and provide pipeline companies with a new opportunity for reducing maintenance costs.

The waiver to DOT Rule 49 CFR 192.713(a) was granted in response to a petition from 28 gas pipeline operators, including Texas Gas, on behalf of the pipelines by the Interstate Natural Gas Association of America in November 1993. The waiver, which is subject to conditions and future performance evaluations, allows pipeline companies to use Clock Spring technology as an alternative to more costly pipeline repair methods. Previously, the regulations set by DOT, the governing agent for pipeline repairs, called for two methods for the repair of gouged, dented or corroded pipe — covering the damaged pipe with a welded metal split sleeve, or temporarily removing the pipe from service and replacing the damaged section.

Clock Spring offers significant advantages over previously mandated repair methods. Labor and material savings using Clock Spring have been estimated at up to 40 percent over the metal sleeve repair method and 65 percent over section replacement. Based on pipeline industry input on the expected use of Clock Spring, GRI estimates an annual industry savings of $8.5 million to $11.5 million.

Developed by NCF Industries Inc., and Clock Spring Company LP, with support from GRI and Panhandle Eastern Corporation, the Clock Spring repair system consists of a fiberglass composite-reinforced coil that is wrapped around a pipe defect with a specially designed adhesive. Initially marketed as a crack arrestor in 1987, product development, proven in laboratory and field validations, has since advanced the technology to its current status as an option for the repair of pipe gouges, corrosion and other anomalies. Repairs made with Clock Spring have shown the capability to restore the strength of the line pipe sufficient to permit it to operate at its original allowable operating pressure. As part of a demonstration program by the Gas Research Institute, the Clock Spring has been installed on a number of pipelines nationwide including on two segments of Texas Gas' No. 1 26-inch diameter line near Grand Rivers, Ky., and Clarksdale, Miss.

"The value of this technology has been proven in extensive field evaluations," explains Theodore L. Wilke, GRI vice president, gas operations technology development. "With the Clock Spring system, permanent repairs can be made while the pipeline is operating. This enables pipelines to avoid customer-service interruptions, as well as revenue and vented gas losses. As shown by the number of companies joining the petition filed with DOT, the industry has long recognized the benefits of using Clock Spring. However, until now, regulations have not permitted its use on gas pipelines."

Clock Spring is manufactured and marketed by Clock Spring Company (Houston). The composite material used in the Clock Spring system consists of glass fibers impregnated by a resin matrix. Fiberglass is highly resistant to corrosion, and fiber-reinforced composites are known for their high strength, light weight and relatively low cost.

Application of the composite repair material is a fairly simple process. Once the pipe defect has been inspected, prepared, and filled, a coiled band of Clock Spring material is wrapped around the pipe and bonded into a single unit with a proprietary adhesive. This repair method not only restores the pipe's original pressure capabilities, but can also improve its resistance to further structural deterioration.

INFIELD RESERVE GROWTH

Geology Combines with Geophysics, Engineering, and Petrophysics to Reveal New Reserves in Old Fields

The lower 48 states contain approximately 800 trillion cubic feet (Tcf) of technically recoverable natural gas in reservoirs of conventional "tightness" (porosity and permeability). Of this, approximately 400 Tcf is in undiscovered fields, and about 160 Tcf is proved reserves. The remaining 240 Tcf, however, is incremental gas left behind in existing gas fields (in uncontacted or incompletely drained compartments). Today, technological improvements and changes in the economics of development make these "left-behind" resources both attainable and highly attractive.

"By taking a multidisciplinary team approach that brings together the expertise of geologists, geophysicists, petrophysicists, and reservoir engineers, you can achieve a more complete characterization of complex, heterogeneous reservoirs, and, with greater precision, target the placement of new wells and recompletions in existing wells."

L. Frank Pitts
President
Pitts Energy Group

Over the last six years, GRI—with the U.S. Department of Energy (DOE), the Bureau of Economic Geology (BEG), and the state of Texas—has developed advanced techniques for identifying missed gas in mature fields.

This program, entitled "Infield Natural Gas Reserve Growth Joint Venture," is reevaluating older fields in the Gulf Coast and Midcontinent regions. The result is significant new reserves at costs far less than full-cycle exploration and production operations. Since June 1993, the program has been concentrating on the Boonsville field, near Fort Worth, TX.

conventional approach. A well was drilled based on these combined data, however, and the initial results were good.

"By taking a multidisciplinary team approach that brings together the expertise of geologists, geophysicists, petrophysicists, and reservoir engineers, you can achieve a more complete characterization of complex, heterogeneous reservoirs, and, with greater precision, target the placement of new wells and recompletions in existing wells," explains L. Frank Pitts, President of Pitts Energy Group.

The major benefit of the Joint Venture program is that even small operators can use its techniques to redevelop fields and exploit reserve growth opportunities, at costs and risk factors much lower than traditional exploration and production procedures. A field test in Victoria County, TX, demonstrates the economic advantages of secondary gas recovery. Costs for redeveloping several targeted reservoirs were $0.31 per thousand cubic feet (Mcf), while the market price for the gas was about $2.00/Mcf.

In the Gulf Coast region, reserve additions per gas development well were up 48 percent in 1993 compared to the 1991-92 average, and were the second highest in 14 years. In addition, costs were reduced substantially.

Although field experiments are still underway to identify absolute links between structure, sequence stratigraphy, and the distribution of reservoir compartments, much has been accomplished. "You must understand the geological environment of your property and do your homework in all disciplines to be sure that you are able to make a rational analysis," conclude Gary Hoge and Tom Coffman, Coffman Exploration, Austin, TX.

House of Representatives
Committee on Ways & Means

Subcommittee on Oversight

Hearings
on the
Research and Experimentation Tax Credit

May 10, 1995

Statement for the Record
by
Joe Cobb
John M. Olin Senior Fellow in Political Economy
The Heritage Foundation
Washington, DC 20002

We appreciate very much the opportunity to include a statement in the hearing record on the way in which our government treats both the taxation of private research and experimentation, and the Clinton Administration's apparent preference for a "Big Government" approach.

We can all agree that the United States, as the leading economic power in the world, is challenged continually on the frontiers of new technologies to stay in the lead. But there are two very distinct philosophies about how to make the needed progress.

Some people advocate government leadership, government planning, and government investment. We say that is wrong. Progress and innovation do not come from direct government aid, but from the efforts of inventors and scientists and engineers in the private sector. Even government funded laboratories and universities make the discoveries they do at the computer terminals and laboratory facilities where the scientific personnel themselves have wide freedom of action, independently of the program planners in their administrative offices.

To remain the world's leader in science and technology, the United States must put more emphasis on letting the private sector take the lead and ***reduce emphasis on government programs*** as the main strategy. The Clinton administration has clearly taken a stand in favor of government action.

Statement of Joe Cobb
The Heritage Foundation

The Disappearing R&E Tax Credit

The research and experimentation (R&E) tax credit expires on June 30, 1995. Last year the Clinton Administration did not support its extension. This year, their "support" is tucked away in a little note in the tax section of their budget, and it is not even mentioned in the Research and Development discussion.

It is clear that the R&E tax credit is quite peripheral to the Administration's science and technology policy goals. In our opinion, by contrast, that is where the main emphasis ought to be placed.

Instead of exploring new and sound ways to promote private industry research and development (R&D) or even private-public partnerships, the Clinton Administration has chosen to increase federal funding of government chosen research. As the following table shows, the Administration's record shows federal civilian R&D spending will have grown 15.1 percent by 1996, although defense-related R&D spending has fallen 9.9 percent.

CLINTON ADMINISTRATION'S R&D SPENDING

Dollars in millions	1993	1995 (est.)	1996 (prop.)	1993-96	1995-96
NASA	$8,885	$9,561	$9,179	3.3%	-4.0%
Commerce Dept.	607	904	1,096	80.6%	21.2%
EPA	519	552	616	18.7%	11.6%
ATP	68	431	491	622.1%	13.9%
TRP	472	443	500	5.9%	12.9%
Mfg. Extension Prog..	18	91	147	716.7%	61.5%
HHS	9,666	11,272	11,793	22.0%	4.6%
Total Civilian	30,329	33,815	34,902	15.1%	3.2%
Total Defense	42,164	38,898	37,981	-9.9%	-2.4%
Total All	72,493	72,713	72,883	0.5%	0.2%

Source: *FY1996 Budget of the U.S. Government*, pp. 94-95; and *Analytical Perspectives*, p. 119.

More noticeably, a series of programs of widely questioned effectiveness have grown dramatically. From Fiscal Year 1993 through Fiscal Year 1996:

- ✓ the Advanced Technology Program (ATP) would grow to $491 million, or 622 percent
- ✓ the Technology Reinvestment Program (TRP) would grow to $500 million, or 5.9 percent
- ✓ Commerce Department R&D would grow to $1.1 billion, or 80.6 percent

- ✓ the Manufacturing Extension Partnership would grow to $147 million, or 717 percent
- ✓ HHS Department R&D would grow to $11.8 billion or 22 percent.

The Unwelcome New System of Government Tech Centers

The Manufacturing Extension Partnership (MEP) program is a prime example of the Clinton Administration's bold new government-dominated initiatives. But at the same time, it is a good example of why this approach needs to be questioned.

Started in 1988 as part of the Omnibus Trade and Competitiveness Act, the MEP was supposed to bridge the gap between sources of manufacturing technology and the small and mid-sized companies that were viewed as facing barriers that make them relatively slow in adopting important new technologies. The National Institutes of Standards and Technology (NIST) is in charge of the initiative.

The NIST program has been criticized as unworkable and unresponsive to industry needs. In a 1991 report, the General Accounting Office indicated that "overall, the ... programs have been only somewhat effective in addressing the technology needs of small manufacturers ... while legislation establishing the ... program emphasized the transfer of advanced technologies being developed at federal laboratories, the centers have found their clients primarily needed proven technologies."

Mandate for Change, the political issues handbook published by the Progressive Policy Institute (PPI) in January, 1993, which in those days was called "President Clinton's think tank," criticized the MEP tech centers as:

> their performance has been disappointing. Like other government retail service efforts, the extension services have reached too few firms and most manufacturers regard them as unlikely sources of practical expertise. [p. 75]

The book advocated instead a new kind of privately run "teaching factory," which [emphasis supplied]:

> would overcome many of these extension services shortcomings by operating as an *industry-owned and -operated* learning center. It would offer groups of firms within a particular industry a place to put new processes into

> operation and experiment with new technical applications. Its relevance to real factory floor problems would be reinforced by a *requirement that firms provide at least half the operating costs of the facility. [ibid.]*

Private industry-led alternatives to the government extension centers exist — from networks of consultants to full-scale integrated teaching factories. These alternatives address the concern raised by the Progressive Policy Institute's study, yet the Clinton Administration has increased MEP funding to $147 million, which is 717 percent.

Vanished? A Collaborative Private Sector R&E Credit

More important, however, is that the Clinton Administration's budget completely ignores two initiatives to foster what are truly industry-led partnerships — a modification to the existing R&E tax credit introduced in the previous Congress by Senators Danforth and Baucus (S. 666) and Senator Lieberman (S. 394) to reward collaborative R&D. Incentives for collaborative R&D have wide support, including the Democratic Leadership Council, the NorthEast-MidWest Coalition, the National Academy of Engineering and others.

These proposals would modify the R&E tax credit in a fiscally responsible way. By providing a greater reward in the form of a flat credit for R&D conducted in teams from different organizations, the modification would maximize limited private and public sector R&D and encourage firms to allocate scarce R&D resources to projects that benefit both their individual goals and joint, industry-wide goals.

The proposed extension of the R&D tax credit would also stimulate new research — research unlikely to be undertaken individually whenever it might be too risky or too long-term, or so generally applicable that no single developer could fully capture all the benefits competitively. By making more efficient use of both private and publicly funded R&D resources, the proposed collaborative credit could significantly advance the overall efficiency and effectiveness of the R&E tax credit.

Today one of the most touted reasons for government initiative R&D financing is that a central agency has some advantage in selecting among different proposals submitted by individual organizations and companies. Therefore, and perhaps most importantly, a collaborative R&E tax credit would allow private industry to initiate joint research and experimentation projects. *Private*-public partnerships would be

encouraged to flourish without the obtrusive hand of the federal government directing the area of study.

The cost of stimulating industry-led partnerships would be significantly lower through a collaborative R&E tax credit than through direct federal subsidies. The Danforth-Baucus and Lieberman modification in the R&E tax credit was estimated to cost about one-quarter the amount of the existing R&E tax credit. This would be roughly one-half of the cost of the ATP program — a program that has been criticized as one "unblemished with success."

The Congress needs to adopt policies that promote private industry-led R&D rather than government-led R&D. Congress should protect incentives for the more efficient, collaborative form of R&D employed to a greater degree by our trading partners. And Congress should ensure that industry puts its money where its self-interest is, that the private sector co-funds the research. This would most effectively assure and that the research is relevant to the practical needs of America's manufacturing industries. A collaborative R&E tax credit provision, like the proposals introduced in the previous Congress by Senators Danforth and Baucus (S. 666) and Senator Lieberman (S. 394) should be given serious consideration by this Committee.

STATEMENT ON THE RESEARCH AND EXPERIMENTATION EXPENSE ALLOCATION RULES AND THE RESEARCH AND EXPERIMENTATION TAX CREDIT

BY THE
NATIONAL ASSOCIATION OF MANUFACTURERS

FOR SUBMISSION TO THE
SUBCOMMITTEE ON OVERSIGHT
COMMITTEE ON WAYS AND MEANS
U.S. HOUSE OF REPRESENTATIVES

MAY 24, 1995

Introduction

The National Association of Manufacturers (NAM) is a voluntary business association of more than 13,000 firms located in every state. Our members range in size from the very large to the more than 8,000 small members that have fewer than 500 employees. The NAM's member companies produce more than 80 percent of the nation's manufactured goods.

The NAM submits this statement for the printed record of the May 10, 1995, hearing regarding the research and experimentation expense allocation rules, commonly known as the "861 R&D allocation regulations," and the research and experimentation tax credit, commonly known as the "R&E tax credit."

RESEARCH AND EXPERIMENTATION EXPENSE ALLOCATION RULES

These regulations are a prime example of how the current federal tax regime places U.S. multinational firms at a clear competitive disadvantage in the international marketplace. The NAM strongly recommends that the Congress work with the Administration to ensure that a permanent regulatory solution to the R&E expense allocation issue is adopted this year, and to enact corrective legislation if such relief is not promptly forthcoming. A final resolution of this problem is crucial to the international competitiveness of U.S. manufacturing.

In 1977, the Treasury adopted onerous regulations under Internal Revenue Code Section 861 continuing specific rules requiring allocation of the expenses of R&E conducted in the U.S. between a taxpayer's U.S. source and foreign source income. Although the Section 861 R&E allocation rules operate through the mechanism of the foreign tax credit limitation, their practical effect is the same as denying an income tax deduction against U.S. income for part of the R&E actually conducted in the U.S.

Needless to say, the foreign countries to which U.S.-conducted R&E expense is allocated do not allow U.S. firms a deduction for such allocated expense in computing foreign taxes owed. U.S. multinational firms are thus penalized for conducting all or a substantial portion of their R&E in the U.S., giving rise to a strong incentive to move part of such R&E overseas. In our view, this is not only unfair but constitutes singularly poor public policy. It is significant to note that we are the only major industrialized nation that does not allow domestic taxpayers to fully deduct domestic R&E expenses against domestic income.

Since adoption of the 861 R&E regulations in 1977, Congress and the Administration have advocated and adopted a number of temporary moratoria to prevent the full implementation of the rules. Under the latest moratorium, included in the Omnibus Budget Reconciliation Act of 1993 ("OBRA '93), 50 percent of domestic R&E expense was allocated

and apportioned to U.S. source income, with the remaining 50 percent allocable between U.S. and foreign source income on the basis of sales or gross income. The OBRA '93 moratorium expired December 31, 1994, for calendar year taxpayers. Therefore, the 1977 regulations must be applied for future years unless a regulatory or legislative solution is adopted.

The NAM believes that a permanent resolution to the 861 allocation regulations issue is long overdue, and requests that you work with the Administration to ensure that such a solution is promptly adopted through regulations. Otherwise, Congress should pass corrective legislation this year.

Domestic R&E is Crucial to Competitiveness of U.S. Manufacturers

The NAM believes that providing stable tax treatment for R&E that does not discourage U.S.-based R&E is crucial to the international competitiveness of U.S. manufacturing. Numerous econometric studies have demonstrated a positive link between R&E spending and increased productivity, which in turn leads to increased U.S. competitiveness and GDP growth. The vast majority of private (i.e., nongovernmental) R&E outlays are made by manufacturing firms. To the extent this R&E leads to increased productivity in the manufacture of goods, such goods become more competitive in both domestic and overseas markets. The international aspect of this improved competitiveness is especially important, since in recent years, the growth in manufactured exports has been the main source of strength in the U.S. economy.

Accordingly, the NAM believes the case for regulatory or legislative resolution of the R&E allocation issue is extremely strong. Equally strong, in our view, is the need to make such resolution permanent. R&E by its nature is often a long-term proposition. Indeed, it is not unusual for half of a firm's R&E to be directed at projects with a time horizon of five to ten years. Manufacturing concerns need the stability that is necessary for sound, long-term business planning.

Recommendation

The NAM strongly supports a definitive resolution to the R&E expense allocation regulations issue this year. We appreciate the opportunity to submit this statement and would welcome the opportunity to work with Congress and the Administration to resolve this longstanding problem.

RESEARCH AND EXPERIMENTATION TAX CREDIT

Cost of Capital Considerations

The most critical economic determinant on the manufacturing sector of the United States economy is the cost of capital. In recent years the cost of capital for United States manufacturers, both in absolute terms and relative to manufacturers in other countries, has experienced an unfavorable trend. Increased cost of capital adversely affects our ability to maintain a skilled workforce, price goods competitively in the global market and develop technological innovation.

Research and Experimentation Tax Credit

In legislation the U.S. House of Representatives passed this year, it has begun to address cost of capital issues on a broad scale. It has taken measures to enhance the recovery of investment in plant and facilities, it has passed moderation in the taxation of capital gains, and has provided a savings vehicle which will serve to encourage U.S. savings. And there are signs that out-of-control regulation will also abate. All of these have a favorable impact on cost of capital and enable our members to make even greater

contributions to the well-being of our citizens.

Yet there remains attention to the single most important capital element in maintaining world technological leadership. The capital flow created by the research and experimentation tax credit must be maintained.

Productivity of the Manufacturing Sector

Manufacturing productivity growth averaged almost 3% during the 1980s and early 1990s, nearly three times as high as in the non-farm business sector. When measured in terms of output per unit of labor and capital, it is six times greater. This broader measure, total factor productivity, mainly reflects technological advance.

The United States has continued to maintain a higher average level of manufacturing productivity than any of the large industrial countries. According to a recent study at the Brookings Institution, productivity in German manufacturing stood at 86% of that in the United States compared with Japan at 78 percent. Individual worker productivity statistics demonstrate similar United States leadership.

United States companies are far ahead in the deployment of information technologies. The number of personal computers in use in the workforce in this country is more than twice the number in use in Germany and nearly four times the personal computers in the workforce in Japan. Besides the huge lead in use of personal computers, some 56% of U.S. personal computers can communicate with other computers within a company through local area network connections, compared with just 13% in Japan. Eight of the top ten personal computer companies worldwide in 1993 were American. The U.S. lead in information technologies has contributed to export growth, thereby strengthening U.S. manufacturers' global competitive standing.

From the start of the export boom in 1986, the number of export jobs related to export goods increased by more than 2.3 million. Every year since 1986, the number of jobs supported by goods exports have been more than double the number supported by service exports. Each $1 billion of new exports creates an average of 17,000 new jobs.

Over the period 1970-1993, 68% of total United States R&D was performed in industry. Ninety percent of all industrial R&D is conducted by manufacturers. The relationship is obvious -- R&D activity by manufacturing businesses in the United States has contributed significantly to the country's continuing leadership among the worlds leading countries. The Research and Experimentation Tax Credit works. It is effective; it is productive; it creates jobs. It needs to be extended and made permanent.

Fundamental Utility of the Incentive

The "Manufacturers' Pro-Growth Agenda" sponsored by the NAM includes the following item:

> Support Technological Innovation. Reduce the number of federal labs and more precisely define their mission to avoid public-/private-sector competition. Make remaining federal R&D activities more cost-effective and more private-sector-oriented. Encourage appropriate, industry-led technology partnerships with government. Reduce existing regulatory obstacles to innovation and to the rapid diffusion of new technologies, and avoid enacting new regulatory obstacles.

The NAM believes the credit should be evaluated considering the suggested reduction in federal labs with a view toward using that cost saving to further encourage private R&D through an enhanced credit.

While the credit has been effective in encouraging private R&D, many companies that have made substantial investments in research and development do not benefit from the current credit. This is due to the structure of the current credit that is available only to the extent that a company's current ratio of R&D expense to sales exceeds the same ratio for the 1984-1988 base period.

A company may actually increase R&D spending and still be ineligible for the credit. This can occur for a number of reasons relating to business developments such as the acquisition of a less R&D intensive subsidiary or a rapid increase in sales for cyclical industries. In these cases, a company could be denied the credit for reasons unrelated to its overall research efforts.

The NAM believes Congress should consider providing an alternative, elective credit that would be available to these firms that conduct critical research activities, but that for a variety of reasons have not been able to qualify for the incremental credit using the existing base period.

The existing credit remains an effective framework from which improvement can be made. A large number of companies are investing existing amounts in R&D because of the credit. Because the present credit is scheduled to expire at the end of June, the NAM believes the entire framework will be in jeopardy if it is not renewed. It is of utmost importance that there be an uninterrupted continuation of the credit. The NAM encourages Congress to extend the credit in such a way so that it will work effectively for the broadest possible spectrum of industries.

Recommendation

The NAM urges that the R&E tax credit be extended and made permanent. That should be done this year retroactive to its expiration date. If sufficient funding is available, an enhancement should be made so as to support any productive R&D activities without the credit structure itself constituting an impediment to productive activities. One means to achieve this objective would be through an alternative, elective credit which would not disadvantage businesses currently earning the credit.

Summary

The health of the United States' economy and its favorable position in the world market is dependent on the manufacturing sector. The cost of capital is the most critical economic determinant in supporting a successful manufacturing community. The majority of private commercial R&D is conducted by manufacturing enterprises. R&D spending by United States manufacturers sustains growth and advancement in manufacturing technology enabling a healthy economy, creation of new jobs and maintaining the United States leadership in the global market.

TESTIMONY OF MIKE CUMMINS

VICE PRESIDENT

OF THE NATIONAL CENTER FOR MANUFACTURING SCIENCES

Madam Chairwoman and Members of the Subcommittee on Oversight:

The National Center for Manufacturing Sciences welcomes the opportunity to testify on the need to improve the research and experimentation (R&E) tax credit. More specifically, we would like to lend our support for, and offer our perspective on, an enhanced reward for research conducted collaboratively.

In sum, an enhanced reward for research conducted collaboratively will serve several important functions not currently served by the R&E tax credit. A modification for collaborative R&D will:

- reward currently underspent manufacturing process R&D of generic application to industry, which will ensure we not only innovate in new products, but have the ability to produce those products on competitive terms;
- permit small manufacturers to leverage resources and know-how with larger manufacturers to conduct joint R&D of importance to the supplier chain;
- encourage companies to do research in the most efficient manner possible, *i.e.* collaboratively, when the research would otherwise be duplicated and encourage new research that would not otherwise be done if R&D had to be conducted and paid for on an individual firm basis;
- cost effectively reward the deployment and commercialization of R&D, not just the ability of firms to spend more on R&D; and,
- widen the benefits of the R&D tax credit to firms currently not eligible for the credit and simplify administration of the credit.

The NCMS -- a 501(c)(3) not-for-profit manufacturing research and development organization -- is one of the Nation's leading R&D consortia, and the largest in the manufacturing realm. Comprised of predominately smaller manufacturers, the NCMS focuses on generic manufacturing process R&D -- R&D that is the building block for the conversion of raw materials to finished products.

The unique model of the NCMS, as a consortium of large assemblers and small suppliers, serves to maximize the benefit of every R&D dollar expended. First and foremost, the selection process for process R&D engages the expertise of a diverse group of participants, who not only see the process technology from its potential application to their unique product lines, but through their chain of suppliers. Such a selection process assures that the process technology has wide commercial application across industry, as well as defense application. The NCMS model avoids the problem encountered when individual firms undertake process R&D. Too often processes of considerable merit to a vast number of businesses are not made relevant and cost-effective because their application to industry is not fully utilized or even appreciated.

Second, since NCMS is governed by the highest quality principles synthesized across industries, the value of the process technology to NCMS members is always benchmarked against the regiments of quality. The consortia environment ensures that the procedures of the widest practicable application emerge, but also that these processes yield products of the highest quality.

Finally, as a consortium of variegated firms, NCMS' unique membership can accelerate the commercialization of process technologies. That is because the technology is instantly available to a base of manufacturers that represent a significant portion of the industry users.

In our testimony here today, we would like to discuss with this Subcommittee the need to understand the distinction between process and product R&D, the reason why process R&D is underspent, and why we believe a collaborative tax credit will address many of these problems.

I. Policymakers Must Understand the Essential Need for Collaborative and Process-Oriented R&D

The Congress and the Administration, regardless of whether either is in Republican or Democratic hands, perennially touts the need for R&D funding. At the state level, governors provide direct assistance to stimulate R&D and the fruits of increased productivity, higher paying jobs and the manufacturing productivity it embodies. And across our shores, virtually every developed country finds ways in which to reward R&D. The need for R&D, and for government incentives for R&D is permanently etched into the American psyche.

But expressions of support for the idea of promoting R&D, as this committee has heard from many witnesses here today and over the last ten years, is the easy task. What is more difficult is determining how to translate that support into concrete proposals to encourage R&D. Equally important is determining what form of R&D should be rewarded.

Recognizing that we underspend in R&D, therefore, is only part of the story. We must appreciate the critical distinction between product and process R&D, we must attempt to quantify and understand the causes of underspending, and we must -- most importantly -- take steps to direct additional resources to process R&D commensurate with its importance.

Process R&D is Critical to Manufacturing Competitiveness

In its most basic form, manufacturing can be defined as the conversion of raw materials into finished products with defined shape, structure and properties that fulfill given requirements, specifications and quality levels.[1] This conversion into finished products is accomplished using a variety of processes that apply energy -- be it electrical, mechanical, thermal or chemical in nature -- to produce the desired changes in the configuration of materials. The means by which this conversion is effected is collectively known as 'manufacturing process', and the study of how to most efficiently effect this conversion is the study of manufacturing process technology.

Manufacturing process R&D matters, because it is the key to competitiveness of manufacturing sector. Every nation's success as a global manufacturer requires the development and use of processes capable of producing high-quality products rapidly, cost-effectively, and in an environmentally acceptable manner. U.S. companies must be able to manufacture products of superior quality at competitive prices, and the key to the quality of any product is an understanding of the manufacturing process by which it is produced and an understanding of the most efficient means to implement that manufacturing process knowledge.

Evidence of the criticality of process R&D, can certainly be found in the concerns advanced by policymakers. Numerous studies which have been undertaken to define the most important areas of future industrial research have emphasized the need to place manufacturing process development on an equal basis with new product technologies. According to these studies, the U.S. must establish a permanent foundation in engineering and science which is capable of innovating and improving not only products, but the processes by which they are produced. For instance, the report of the National Research Council, Materials Science and Engineering in the 1990s: Maintaining Competitiveness in the Age of Materials, highlights materials synthesis and process as an important area of expanded emphasis over the next decade (NRC 1989). Other studies point out that the reason for the loss of manufacturing competitiveness and productivity has been a reduction in investment in manufacturing process R&D; indeed, that the U.S. focus on products rather than processes has been fueling the relative decline of American manufacturing with respect to other manufacturing nations.[2] [3]

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[1] Unit Manufacturing Processes, National Research Council, National Academy Press (1995).

[2] Thurow, L. 1987. A weakness in process technology. Science 238:1659 -1663.

[3] Mettler, R.F. 1993, Forging the Future: Policy for American Manufacturing, 1993. Washington, D.C.: Report of the Manufacturing Subcouncil, Competitive Policy Council.

These studies are bolstered by everyday observations. Although global integration of product markets and advances in reverse engineering techniques have improved the ability of competitors to determine the compounds of new products, the ability to clone products still depends on competitors' ability to make those compounds. Excellence in developing and implementing manufacturing processes that produce unique production capabilities with cost and quality advantages are determinants of market success, since processes and investment in capital and training costs cannot be easily duplicated.

Process R&D Assists Production in Many Ways

Manufacturing process occupies a central role in our economy because of its ability to increase affordability and quality of the products, decrease time to market and time for commercialization, broaden applications of products, and incorporate environmental or other externalities. Each factor deserves elucidation.

First, manufacturing process R&D adds greater affordability to production; indeed, affordability is one of the seven industrial thrusts identified by the Department of Defense in determining the priority of Manufacturing, Science and Technology funding. One of the basic values of process technology is its ability to provide the required quality level of transformation at minimum input cost per unit of output. This involves minimization of such factors as energy use, scrap generation, capital and labor costs.

Second, manufacturing process technology can find new uses for advanced materials. Often advanced materials with outstanding properties are simply left unused or languish in a single laboratory or corporation since little consideration had been given to the methods required to produce them. Understanding process helps us understand the possible uses to which such material can be put.

Third, manufacturing process technology can shorten the time to transform a product technology from research to commercialization by rapid response to customer needs. One of the critical understandings in research today, is the need, developed by industry and adopted by the Department of Defense, to have concurrent process and product technology, otherwise known as Integrated Product and Process Technology. Though concurrent process R&D we can achieve production more successfully, with more quality and with greater speed. Of course, process R&D can shorten the time of production, which is particularly important if the process is the limiting factor in bringing the product to market.

II. Why do We Underspend on Process R&D?

The failure of market forces to provide for an adequate level of manufacturing process R&D results from the economics of R&D spending, particularly the unique economics relative to manufacturing process R&D. As a general proposition, firms tend to underspend on R&D since they are unable to translate into profits all of the value their R&D adds to the economy; but this "innovation gap" is widest for manufacturing process R&D where the return to the individual firm is perceived to of less advantage to the firm than to the manufacturing community as a whole.

Individual firms tend to underspend in manufacturing process R&D. Both product and process R&D may entail large costs, high risks and long term payoffs. The potential gain for any one firm from process technology is limited by the use to which the firm can apply the technology in their own operations. The R&D may result in technology that will reduce their costs, allow a lower pricing structure and improve market share to some extent. It will not expand their revenues to the same dramatic degree that a new and innovative product will. And since they are not in the manufacturing technology business, they will not typically know how to enter an entirely new and different market based on the improvement. The process improvement, however, probably has wide application throughout their industry and in others. Thus the gap between the return to the firm (defined by the reduction in costs in its plants) and the potential return to society (lower costs and higher productivity in innumerable firms and often across industries).

Manufacturing R&D has the widest possible application of almost all R&D besides basic research but perhaps the lowest potential return to a particular firm. While few firms may be able to utilize a product innovation, many firms can find application to improvements in the processes by which that product is made. This dichotomy—the value to the industry or industries that would benefit from the technology vs. the inability of firms to typically receive a modest cost savings from their manufacturing R&D investment—causes individual firms to collectively underspend on process R&D at a level which exceeds the level firms underspend on R&D in general.

There is another reason that process R&D is relatively underfunded compared to product R&D. Protecting a firm's intellectual property in a product innovation is relatively direct. If a firm loses sales to a competitor using patented or otherwise protected product technology, it will quickly find out since exploiting the purloined technology necessarily involves third parties (i.e. customers). It may then enforce its legal rights (at least domestically and in most advanced countries). Process R&D may, in contrast, be used to good effect by a firm internally in its plant. It is therefore vastly more difficult to discover violation of a firm's intellectual property rights. This difference increases the risk and reduces the return on process R&D. This difficulty in protecting property rights makes it more likely that the firm will elect to perform product R&D even though the economic benefit to society would be higher were more R&D dollars allocated to process R&D.

Although it is not a particularly simple task to determine whether process R&D is being underspent in the private sector, the ability or failure of firms to compete successfully against domestic and foreign competitors gives a fairly direct measure of the productivity of their manufacturing operations and the efficacy of their manufacturing processes. In the case of defense suppliers, who are typically manufacturing a unique product with one buyer, it is more difficult to gauge the proper level of defense process R&D spending.

III. Why are Added Incentives for Collaborative R&D are Needed?

There are many reasons why a collaborative R&D tax credit is needed.

The Collaborative Credit Overcomes An Inherently Institutional Bias Against Collaboration and a Built-in Reluctance to Collaborate

Most importantly, the credit is needed to overcome a bias against collaborative research that has been institutionalized in the American business culture. Historically, antitrust laws and our traditional image of stubborn independence have combined to characterize collaborative research not only as a sign of weakness, but as an approach that could restrict competition or trade. As a result, most American companies have been reluctant to share manufacturing information and technology, even when their problems are industry-wide and solutions are long-term, costly and risky.

The credit would be the next logical step in a series of steps undertaken by Congress to remove institutional obstacles to collaborative research. In 1984, Congress passed the National Collaborative Research Act, which was intended to assuage fears that collaborative research (through the prototype stage) violated U.S. anti-trust statutes. In addition, the Stevenson-Wydler Technology Act of 1980, the Federal Technology Transfer Act of 1986 and the Omnibus Trade and Competitiveness Act of 1988 have all increased the abilities of American companies to engage in collaborative research.

In addition to overcoming cultural biases, the credit is needed to overcome internal perceptions that collaboration will hinder rather than help. R&D goes to the very heart of a firm's existence. Innovation, technology, knowledge and discoveries are the lifeblood of a firm; they are the means by which a firm gains marketshare. But these commodities only have value if they are either unknown to other firms or protected under intellectual property laws.

By asking firms to collaborate on R&D, we are asking them to share with others -- mostly competitors -- some of this knowledge. Collaborative R&D is new, difficult to organize and carries substantial perceived risks to firms. For an aggressive growth company, fear of "contributing knowledge" to competitors instead of "sharing" in the new knowledge is very real. And the collaborative group activity is subject to less individual corporate control, which elevates this concern.

The Collaborative Credit Furthers Sound Policy Goals of the Incremental Section 41 Credit

The collaborative R&E tax credit strongly advances the policy justifications of the section 41 incremental credit, and at the same time, rewards the most efficient use of limited R&D funds. The collaborative credit has much to recommend it: to the extent the credit leverages research dollars it encourages more efficient use of limited R&D resources; to the extent it spreads risks and costs; it encourages new research that would not be conducted in its absence; and, to the extent it eliminates redundant research, it increases the stimulating effect of the existing tax expenditures.

First, the collaborative R&D tax credit will stimulate new R&D (as the incremental Section 41 credit is intended to do). This is because the credit enables firms to spread risks and costs by pooling cash, in-kind contributions, scientists and technical know-how on R&D that would otherwise be too costly, too risky or too long-term to perform individually.

Second, the collaborative credit will advance the underlying goals of Section 41 by ensuring the research is conducted in the U.S. and by better enabling firms to meet foreign competition. The collaborative R&D tax credit is intended not only to help firms compete against one another, but to band together to meet global competition.

The Credit Will Benefit Firms Not Encouraged by the Current Incremental Credit

Direct benefits of the proposed enhancement to the R&E tax credit will undoubtedly inure to the bottom line of companies that conduct collaborative research. The collaborative credit will assist companies that are otherwise increasing their R&E expenditures above the "base," regardless of how that base is defined in the section 41 incremental credit. Equally important, however, it will also benefit companies that cannot take immediate advantage of the incremental credit either because they do not have taxable income against which the credit can be offset, are subject to the limitations of the Alternative Minimum Tax or whose R&D falls below the base. It also includes smaller firms who may be disinclined to invest the needed amounts in process or other technologies not perceived to immediately inure to the bottom line, but in the long run are key to their sustained competitiveness.

The ability to share in the research results of collaborative research that is "incentivized" or encouraged by the enhanced credit is a direct benefit that will inure to all participants in a collaborative venture. In other words, because the research is collaboratively conducted (and financing is interrelated), lowering the costs of capital outlays lowers the cost of capital for the research venture in its entirety. In essence, the leveraged research is disseminated to small and large firms alike, for-profit and currently not-for-profit firms alike, and the indirect benefit of the credit is spread to the entire membership of the project. For firms that are below the "base", collaboration will allow them to "catch up to the fold" with immediately rewardable R&E expenditures.

The Credit Will Efficiently Stimulate R&D to the Benefit of the Public and the Public Fiscal Interest

A common test of the utility of the credit has always been how much research it stimulates, but this is far from a perfect criterion as pointed out in the testimony of the GAO. A more correct measure of the utility of an R&E tax credit is how efficiently the credit promotes research, how quickly it facilitates dissemination of research results, and how effectively it assists in the commercialization of innovations within short time frames. The credit should not be judged

simply by how much R&D dollars it stimulates, but by the knowledge conveyed and deployed by the R&D performing firm.

The collaborative R&D tax credit induces new research at lower costs to limited public resources (in the form of tax expenditures) and lower costs to increasingly limited private resources. It helps companies make more efficient use of limited resources by overcoming transactional and cultural barriers to collaboration, providing a counterbalance to perceived or real disadvantages from disclosure of information. Moreover, it will reduce redundant research on which the incremental credit is now taken, ensure innovations are considered for the widest possible application, enable U.S. companies to bring technology to market faster on a wide variety of applications by involving more partners and employ teamwork to meet new challenges in the global trade environment.

The savings of finite public and private sector R&D resources and the new generation of R&D activity will inure to the benefit of the consumers in safer, more economical and more efficient products of greater variety.

The Credit Will Close the Wider Gap Between Societal and Economic Returns

It is generally recognized that firms will under invest in R&D. The prospect of recapturing income from a new idea is the primary incentive for commercializing new products or developing new processes. But individuals or firms that undertake R&D of new technologies must always balance the prospect of return with the cost of that R&D, the risk of failure and the consideration that, even if they are successful, they will not be able to reap the profits attributable to the new technology.[4] A firm that is efficient in finding new technologies is not always poised to best manufacture and distribute the product, or otherwise fully capitalize on that technology. In short, firms have difficulty capturing the benefits of research to the same extent those benefits inure to society.

The R&D tax credit is partly meant as a means to balance this market distortion by bridging the gap between the social rate of return and the economic rate of return to the individual firm. To the extent the gap between social and economic rates is closed, actual market forces can work more effectively to properly allocate sufficient funding to R&D. The credit also counters similar incentives provided for by our competitor-nations.

In collaborative research, however, even greater gaps between economic income and the social rate of return are present, and even greater competitive pressures come to bear. The greater gap between societal and individual rates of return stem from two factors: first, that the social rate of return is higher per dollar of R&D expended; second, that the firm has greater difficulty recapturing investment. As noted, because companies are sharing research results with competitors -- even if the consortia involves vertical components -- the starting line for competition is advanced for all participants. No individual firm, therefore, gains relative advantage over another in collaborative research. This inability to recapture relative income gain widens the gap between the firm's perceived individual return, and the benefit to the public. The collaborative R&D tax credit modification is meant to stimulate two principal policy goals of the Section 41 credit: (1) it is intended to stimulate new research, and (2) it enables firms to recapture the economic profits of R&E outlays, when these are the most difficult to be recaptured.

The Credit Redresses Certain Inequities

The tax credit for consortia research is also needed because the Code can treat collaborative research disadvantageously. As previously discussed, outside contract expenses are currently creditable, if at all, to the extent of 65 percent. Therefore, contributions to research consortia are not fully creditable as in-house expenses. This 65 percent contract limitation is not without an ostensible policy goal: it is meant to reflect the cost of in-house research overhead, and therefore,

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[4] While research may result in large dividends to firms that conduct such research, such firms are reluctant to conduct research because of the long-term nature of the rewards and because of the fear that the innovation or new processes developed from this research will be lost to competitors.

equalize the treatment between in-house and contracted research. However, the reasoning behind the policy is flawed: it is precisely the lower overhead costs of research consortia and the higher return per dollar of contribution which recommends collaborative research.

Conclusion

It is time for a domestic tax policy that rewards R&D conducted collaboratively as part of our current tax incentive system for R&D. The credit leverages research dollars and encourages more efficient use of limited R&D resources. The credit also spreads risks and costs and encourages new research that would not be conducted in its absence. Finally the credit eliminates duplicative research, thereby reducing the tax expenditure. For these reasons the NCMS recommends that national tax policy incentivize collaborative R&D.

National Society of Professional Engineers

Statement
of the
National Society of Professional Engineers
on the
Research and Experimentation Tax Credit

May 24, 1995

The National Society of Professional Engineers supports legislation (S. 351/H.R. 803) to make permanent the tax credit for research and experimentation. The R&E tax credit is one of the most effective ways the government can encourage private sector research and development.

The National Society of Professional Engineers (NSPE) was founded in 1934 and represents over 65,000 engineers in over 500 local chapters and 52 state and territorial societies. NSPE is a broad-based disciplinary society representing all technical disciplines and all areas of engineering practice, including government, industry, education, private practice, and construction.

The R&E tax credit, provided in Section 41 of the Internal Revenue Code, allows taxpayers to claim an incremental credit for R&E expenditures. Because the credit applies only to R&D expenditures that exceed a base R&D investment amount, it encourages the beneficiaries to increase their level of R&D investment beyond what they would normally have conducted without the credit. The tax credit also counters one of the primary disincentives to private sector R&D - the financial disadvantage incurred by a firm that conducts research, only to have their competitor gain access to the new technology, without having incurred the research expense themselves. In a sense, the tax credit "reimburses" those industries whose research benefits the economy as a whole.

Also, because the R&E credit applies to contract research conducted on the taxpayer's behalf, as well as to in-house R&D, the credit may in some cases stimulate greater cooperation between industry and academia. Both industry and academia benefit when certain academic research is directed to specific industry needs.

Unfortunately, the R&E tax credit has been subjected to short-term extensions. As a result, beneficiaries have not been able to make long-range business plans with confidence. In fact, some eligible participants may have chosen not to avail themselves of the tax benefit as a result of the uncertainties involved. In effect, the short-term nature of the provision has diminished its potential to effectively meet our important research needs. We are confident that the impact of the R&E credit will be magnified when it is made a permanent component of the tax code.

The R&E tax credit is a sensible use of tax policy to enhance our nation's long-term economic competitiveness. It has our full support.

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Our Business is Your Success

STATEMENT OF ROBERT S. GREGG

SENIOR VICE-PRESIDENT OF FINANCE, LEGAL,
TREASURER AND CFO
FOR SEQUENT COMPUTER SYSTEMS, INC.
BEAVERTON, OREGON

RESEARCH AND DEVELOPMENT CREDIT

BEFORE THE HOUSE WAYS & MEANS COMMITTEE
SUBCOMMITTEE ON OVERSIGHT

UNITED STATES HOUSE OF REPRESENTATIVES

MAY 10, 1995

Madame Chair and Members of the Subcommittee. My name is Bob Gregg. I am the Senior Vice-President of Finance and Legal, Treasurer and Chief Financial Officer of Sequent Computer Systems (Sequent). I respectfully submit this written testimony on behalf of my company. As a member of the American Electronics Association (AEA), we are asking for your help in seeking legislative relief from a technical glitch in the R&D tax credit definition of start-up companies.

Sequent is based in Beaverton, Oregon, and is a leading architect of enterprise information technology solutions. In 1994, Sequent had approximately 1800 employees worldwide, with approximately half of our total revenue coming from sales outside the U.S. from research and development and production of products within the U.S.

The unintended glitch in the tax law severely impacts Sequent and has resulted in our receiving no R&D credit since the structure was changed in 1989, even though our research expenditures have increased over 700 percent since the inception of the company to over $60 million annually and have contributed to the employment of over 300 highly skilled engineers in Oregon and over 600 technically skilled support personnel.

Sequent was founded in 1983 by 18 former Intel employees with a vision of the future and with the innovative spirit that the R&D credit was designed to encourage. As a result of our successful R&D efforts in the middle 1980's, Sequent has grown from being a start-up company just over 10 years ago to the mid-sized company that it is today. Our success is largely due to the research and development undertaken by Sequent to design and manufacture a new generation of large commercial computer systems (which have come to be known as symmetric multiprocesssing computers).

Sequent believes that the R&D credit is a very important tool to US tax policy. We are committed to the R&D credit because prior to the change in the calculation with the technical glitch, the credit had a real impact on the decisions of Sequent and other young companies like us. This research has in turn allowed us to stay ahead of our foreign competition in the computer systems business. As a result, we know the R&D credit has a direct and clear impact on our future investment in research and it is critical that a technical glitch in the definition of a start-up company not put us at a competitive disadvantage.

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TAX LAW REVISIONS FAIL TO ENCOURAGE ALL START-UP'S

As previously mentioned, Sequent was incorporated in 1983. We began R&D in 1983 and introduced our first product in December 1984. While we continued to invest significantly in R&D during the fixed base period of 1984 to 1988, our sales volume reached only $76 million by 1988, the last year of the fixed base period. In contrast, our revenue for 1994 was over $450 million. During the critical period of 1984 to 1988, our average percentage of qualified research expenses to sales was over 15%, significantly higher than our current qualified R&D to sales ratio. Because only incremental R&D spending above the base qualifies for the credit, when applying the fixed base percentage for the period 1984-1988 to the average of our gross receipts for the most recent 4 years, the result is a base so high that even as our R&D spending increases, we will not be entitled to an R&D credit for any future year.

Acknowledging that companies in a start-up phase will experience a distorted relationship between R&D expenses and gross receipts in their initial years of operation, Congress provided a special fixed base for start-up companies. We failed to qualify as a "start-up company" for purposes of the special base period relief because we had more than de minimis sales in 3 out of the 5 years of the fixed base period (1984-1988) even though we were clearly a start-up company during that period of time and in fact Sequent's R&D as a percentage of sales was well over 100% in some years during the base period. The credit's incentive value is zero for a few companies like Sequent.

More importantly, the current start-up company definition puts Sequent at a significant disadvantage when we try to compete with an already established company, or a new company who currently qualifies as a start-up company. These companies will get a 20% incentive for their incremental R&D spending. This comes at a time for us when technologies must be developed so that exciting new products can replace the mature products that drove much of our past growth.

We understand from those involved in putting the provision together back in 1989 -- and from the AEA representatives that were consulted at that time -- that this result was never intended. Rather, companies like us within AEA were simply too small to be aware of various congressional proposals back then, and so we never found out about it until it was too late.

THE PROPOSAL

The proposal that solves this problem is simple. ***It would change the definition of a start-up company to include any company with its first year of both R&D and sales in 1984 and thereafter.*** Indeed, this fix was included in H.R. 11 in 1992, which was vetoed by President George Bush for reasons unrelated to this issue. At the time, the cost over 5 years was estimated to be under $50 million. I hope that you will seriously consider fixing this problem to ensure that start-up companies like Sequent who began business during the early years of the fixed base period (1984, 1985 or 1986) are not penalized merely for the year they were formed.

CONCLUSION

Legislative relief is necessary to ensure that "notch" companies such as Sequent are not at a competitive disadvantage vis-a-vis, our competitors. We urge Congress to review this issue and to take action now on behalf of companies whose situations apparently were overlooked during the struggle over bigger issues in the 1989 research credit revisions.

STATEMENT
on the
RESEARCH AND EXPERIMENTATION TAX CREDIT
and the
ALLOCATION OF RESEARCH AND DEVELOPMENT EXPENSES
UNDER IRC SECTION 861
for submission to the
HOUSE COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON OVERSIGHT
for the
U.S. Chamber of Commerce
by
William T. Sinclaire
Senior Tax Counsel and Director of Tax Policy
May 10, 1995

The U.S. Chamber of Commerce appreciates this opportunity to express its views on the research and experimentation (R&E) tax credit and the research and development (R&D) expense allocation rules. The Chamber is the world's largest business federation, representing 215,000 business members, 3,000 state and local chambers of commerce, 1,200 trade and professional associations, and 72 American Chambers of Commerce abroad.

Research and Experimentation Tax Credit

The R&E tax credit contained in Section 41 of the Internal Revenue Code was designed to reward businesses for increasing expenditures in R&D. However, the R&E tax credit is due to expire on June 30, 1995, and the Chamber believes it should be made permanent because it benefits the overall economy in both the short and long term.

The best way our country can maintain its competitive edge in the global economy is through increased innovation and technological development. R&D cycles can last for many years, and high levels of R&E must be performed continuously to achieve desired results. Because the R&E tax credit stimulates innovation and product development, it should not only be extended, but should be made permanent so companies can rely on it during their budgetary processes.

The R&E tax credit was initially enacted as part of the *Economic Recovery Act of 1981*. Originally, the credit was equal to 25 percent of the excess of qualified research expenses incurred in the tax year over the average of qualified research expenses incurred in the three prior tax years. The credit was to expire at the end of 1985; however, it was extended through the end of 1988 by the *Tax Reform Act of 1986*. This act also modified the credit by (a) reducing the credit to 20 percent, (b) tightening the definition of the expenses eligible for the credit, and (c) enacting a separate, university basic research credit. Thereafter, the *Technical and Miscellaneous Revenue Act of 1988* extended the credit through the end of 1989 and reduced the deduction allowed for qualified research expenses by an amount equal to 50 percent of the credit determined for the year.

The *Omnibus Budget Reconciliation Act of 1989* extended the R&E tax credit through the end of 1990 and further reduced the deduction allowed for qualified research expenses by an amount equal to 100 percent of the credit determined for the year. The *Omnibus Budget Reconciliation Act of 1990* extended the credit through the end of 1991.

The research tax credit was extended for an additional six months through June 30, 1992, by the *Tax Extension Act of 1991*. The *Omnibus Budget Reconciliation Act of*

1993 extended it further through June 30, 1995, and amended the rules determining the fixed-based percentage of start-up companies.

With the R&E tax credit having been renewed six times and modified four times since 1981, uncertainty abounds in the business community and long-term planning for R&D can be precarious. This uncertainty reduces the incentive value and effectiveness of the credit. In order for businesses to make the necessary time and cost commitments for initial and continuing R&D projects, a permanent credit is required.

A permanent R&E tax credit will remove uncertainty and allow businesses to plan and undertake long-term research projects. This will enhance American technology, increase our productivity and competitiveness in the global marketplace, create high-paying jobs, and improve our overall quality of life.

Research and Development Expense Allocation

American businesses that conduct most of their R&D in the United States are at an international competitive disadvantage if they have foreign operations with foreign source income. The R&D allocation regulations (861 allocation regulations), contained in Section 1.861-8(e)(3) of the Treasury Regulations, were first issued in 1977 and have been debated significantly ever since. This debate has developed because U.S. multinational companies with foreign source income are required, for purposes of determining their foreign tax credits, to treat a portion of their domestic R&D expenses as if the R&D was conducted abroad. This has effectively led to double taxation for American companies, since no foreign country allows a deduction for R&D conducted in the United States.

The requirement that a portion of R&D performed in the United States be treated for tax purposes as if it were conducted in a foreign country creates a disincentive for American businesses to undertake R&D in the United States and encourages the movement of R&D abroad. Moving R&D out of the United States runs counter to the goal of fostering investment in R&D in this country and is clearly not in our national best interest.

The double taxation problem arose when the Treasury Department first drafted the 861 allocation regulations in 1977. Since then, a number of measures designed to prevent the full implementation of the regulations have been advocated and adopted by subsequent Administrations and Congresses. Starting in 1981, and continuing through 1986, the 861 allocation regulations were suspended and taxpayers were allowed to allocate 100 percent of their U.S. R&D expenses to U.S. source income, irrespective of their worldwide sources of income. In 1987, this suspension was modified to allow a 50 percent exclusive apportionment to U.S. source income. From 1988 to 1992, with the exception of a short period during 1988 and 1989, a series of provisions were enacted to generally permit a 64 percent exclusive apportionment of U.S. R&D expenses to U.S. source income.

In 1992, the Treasury Department effectively allowed taxpayers to elect out of the 861 allocation regulations for two years in exchange for other rules when it announced that it was undertaking a review of the regulations to determine if they provided for a proper allocation or apportionment. Thereafter, further legislation suspended the 861 allocation regulations through December 31, 1994.

Unless there is a regulatory or legislative solution, the 861 allocation regulations drafted in 1977 will apply to all tax years beginning after 1994. American multinational

businesses involved in U.S. R&D will effectively be subject to double taxation to the extent U.S. R&D expenses are allocated to non-U.S. source income.

The Chamber believes that a permanent resolution to the 861 allocation regulations issue is necessary to ensure that the goal of encouraging American companies to invest in R&D within the United States is achieved. American technology has been a major source of our export strength and world leadership. U.S.-based R&D is essential to sustaining America's competitiveness and is critical to our nation's continued economic growth. Advances in technology are vital to creating high-wage jobs and enhancing the position of American businesses in the world economy.

Conclusion

The Chamber urges enactment of a permanent R&E taxcredit and finality to the 861 allocation regulations issue. Making the R&E tax credit permanent will best serve the country's long-term economic interests because it will eliminate the uncertainty about the future of the credit and permit businesses to make important R&D business decisions with certainty. Innovation greatly contributes to overall economic growth, increases productivity, creates new, better and higher-paying jobs, and allows for a higher standard of living. Providing for a favorable and definitive resolution to the 861 allocation regulations issue is essential to having an environment that is conducive to R&D investment in the United States. It is necessary that R&D remain in this country so that high-paying jobs do not move abroad. American technology has been a major source of U.S. export strength and is vital to American businesses remaining in leadership positions in our global economy.

STATEMENT ON BEHALF OF THE

UNITED STATES TELEPHONE ASSOCIATION

The United States Telephone Association ("USTA") is pleased to have this opportunity to submit testimony to the Committee on Ways and Means concerning the extension of the research and experimentation tax credit ("credit"). USTA is the primary trade association of local telephone companies serving more than 98 percent of the access lines in the United States and represents over 1100 members from the smallest of independents to the large regional Bell companies.

USTA supports permanent extension and urges Congress to refrain from efforts to once again modify the credit.

As the information age continues to advance in both technology and reach, the credit becomes increasingly important for precisely the reasons which prompted Congress to adopt it originally: it provides a real incentive for U.S. companies in our rapidly changing industry to increase and expand their level of commitment to tomorrow's world of communication. As such, it encourages investments in innovation, productivity gain and international competitiveness notwithstanding their risk. The presence of a stable, unchanging credit mechanism is the best insurance that we will continue our position as a world leader in communications by producing new products and technologies despite the risks associated with their development. The credit also encourages new jobs as technology-driven services and products made possible by research and experimentation are brought to the marketplace.

The velocity of change in telecommunications is astonishing and accelerating. The life-cycle of new modes of communicating is increasingly short, with advancement and transformation occurring world-wide. Our membership competes for business in this fast-paced marketplace. Foreign entities and governments benefit from incentives sometimes two-thirds greater than any available in the United States. The credit helps offset that potential investment imbalance.

The Committee, in its proper focus on the credit, is looking at its effectiveness and what steps might be taken to improve its utility. Probably the most important action that could be taken would be to permanently extend the credit. In so doing, our industry, and every other one dependent on research for its future, would be able to plan for the long-term, no longer concerned, as we are today, about uncertainty regarding the availability of the credit. Over the last several years, Congress has always extended the credit but many times with narrowing modifications and at times retroactively. This has had the impact of reducing its attractiveness as an incentive upon which strategic planning could be based. We would ask the Committee to refrain from efforts to again transform the credit as it is made permanent. It would be disruptive of the goal of permanent extension to do so in that businesses would have to take the next several years to learn about and cope with additional modifications. Such changes are not without their impacts. For example, commitments to research are not merely made in dollars but also include the hiring of talented and dedicated academics and scientists. Over the last several years, fewer commitments in human terms could be made given the "year to year" existence of the credit. Permanent extension would reverse that situation.

We are not unmindful of the difficult budgetary issues confronting the Committee as it considers extension of the credit. USTA supports the desire to reduce government commitments. The extension of the research and experimentation credit, however, is one of the intelligent choices Congress can make in order to ensure that the U.S. remains a world leader in communications.

Statement submitted by Chuck Shewbridge, Chairman of the USTA Tax Committee. For further information, contact Geoff Feiss, Director of Government Relations, United States Telephone Association, 1401 H Street, N.W., Suite 600, Washington, D.C. 20005. Telephone number: 202/326-7257.

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