THE TAX CODE AND THE NEW ECONOMY

HEARING

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT

OF THE

COMMITTEE ON WAYS AND MEANS
HOUSE OF REPRESENTATIVES

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THE TAX CODE AND THE NEW ECONOMY

TUESDAY, SEPTEMBER 26, 2000

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

The Subcommittee met, pursuant to notice, at 1:04 p.m., in room 1100, Longworth House Office Building, the Hon. Amo Houghton (Chairman of the Subcommittee) presiding.

ADVISORY

FROM THE COMMITTEE ON WAYS AND MEANS

SUBCOMMITTEE ON OVERSIGHT

FOR IMMEDIATE RELEASE CONTACT: (202) 225–7601
September 14, 2000
No. OV–23

Houghton Announces Hearing on the Tax Code and the New Economy

Congressman Amo Houghton (R–NY), Chairman, Subcommittee on Oversight of the Committee on Ways and Means, today announced that the Subcommittee will hold a hearing on whether Federal tax laws are keeping pace with the "new economy." The hearing will take place on Tuesday, September 26, 2000, beginning at 1:00 p.m., in the main Committee hearing room, 1100 Longworth House Office Building, and be continued on Thursday, September 28, 2000, beginning at 11:00 a.m., in the main Committee hearing room.

In view of the limited time available to hear witnesses, oral testimony at this hearing will be from invited witnesses only. Witnesses will include a representative of the U.S. Department of the Treasury, tax policy experts, and representatives of various sectors of the economy. However, any individual or organization not scheduled for an oral appearance may submit a written statement for consideration by the Committee and for inclusion in the printed record of the hearing.

BACKGROUND:

With the emergence of information-based sectors in the economy, many observers believe current tax laws improperly measure business income. The "new economy" is based on high-tech equipment, intensive research and development, and a skilled workforce. Many current tax rules were written for a predominantly manufacturing economy and may need to be revised.

The hearing will review the cost recovery rules for physical capital, which are based on analyses from the 1970s and earlier, and will receive testimony on the recent Treasury Department Report to the Congress on Depreciation Recovery Periods and Methods. The hearing will also review the tax treatment of research and development expenses. Finally, the hearing will explore how tax law treats the cost of maintaining a skilled workforce.

In announcing the hearing, Chairman Houghton stated: "The strength of the economy may be masking underlying inadequacies in our tax laws. Rather than waiting for an economic downturn to look at the current rules, we want to take advantage of the opportunity to ask whether our tax laws make sense. In an increasingly global economy, it is important to look at whether our tax rules put us at any competitive disadvantage."

FOCUS OF THE HEARING:

The hearing will focus on the tax treatment of physical capital, such as equipment; intangible capital, such as research and development, and human capital.

DETAILS FOR SUBMISSION OF WRITTEN COMMENTS:

Any person or organization wishing to submit a written statement for the printed record of the hearing should submit six (6) single-spaced copies of their statement,

along with an IBM compatible 3.5-inch diskette in WordPerfect or MS Word format, with their name, address, and hearing date noted on a label, by the close of business, Thursday, October 12, 2000, to A.L. Singleton, 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, by close of business the day before the hearing.

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 submitted on an IBM compatible 3.5-inch diskette in WordPerfect or MS Word format, typed in single space and may not exceed a total of 10 pages including attachments. Witnesses are advised that the Committee will rely on electronic submissions for printing the official hearing record.

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, company, address, telephone and fax numbers where the witness or the designated representative may be reached. 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 available on the World Wide Web at "http://waysandmeans.house.gov."

The Committee seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call 202–225–1721 or 202–226–3411 TTD/TTY in advance of the event (four business days notice is requested). Questions with regard to special accommodation needs in general (including availability of Committee materials in alternative formats) may be directed to the Committee as noted above.

Chairman HOUGHTON. Ladies and gentlemen, the hearing will come to order. As most of you know, the American economy is on a roll, and its success has reached out to many sections of this country, and much of the strength is attributed to the so-called new economy. Much of the new economy, of course, is built on information and technology and relies on a highly skilled workforce.

Of course, the Nation's economy is made up of more than high technology. There is still an important role for manufacturing and trade. But much of the growth in our economy is in information, in the high-tech sector. Many of our tax rules predate the new

economy. For instance, the cost recovery rules for capital are based on analyses from the 1970s and earlier.

Why not leave well enough alone, you might ask? The economy is strong, but the strength of the economy may be masking underlying inadequacies in our tax laws. We shouldn't wait for an economic downturn to take a look at the current laws and the current rules.

The new economy uses high-tech equipment, so we need to look at the cost recovery rules for physical capital. It relies on research and development, so also, we need to take a look at the tax treatment of intangible capital. Also, it is driven by a skilled workforce, so we need to look at how our tax laws treat investment in human capital.

The Treasury Department is going to be reviewing its recent report to the Congress on depreciation periods and methods this afternoon, and we will hear from a number of private sector witnesses on cost recovery. On Thursday, we will hear from witnesses on how our tax laws treat research and development and the cost of maintaining a skilled workforce.

Chairman HOUGHTON. I am now pleased to recognize the senior Democrat on our committee, Mr. Coyne, for an opening statement.

Mr. COYNE. Thank you, Mr. Chairman. As the Chairman pointed out, the Oversight Subcommittee has scheduled two days of hearings on the tax code and the new economy. It is clear that the nature of work has changed in many parts of the U.S. economy. As smokestack industries have been overtaken by information-based industries, education has become much more important to success in our workplaces. Unfortunately, much of our workforce is not experiencing the economic benefits of or participating in the current economic boom.

There is, to a large degree, a disconnect between the skills the business community needs in the workplaces of the future and the skills many hard-working Americans are trained to provide. The relationship between the tax laws and the ability of this country to maintain a skilled workforce is a timely issue for discussion. All one has to do is look at the classified employment section of the newspaper to see that the vast number of workers sought and the technical skills needed for their jobs.

News reports indicate that currently, there are about 300,000 high-tech job vacancies. Importantly, the number of high-skilled jobs is increasing at an annual rate of 10 percent, and it is unclear whether these positions can be filled. We must focus on what can be done in the short and long term to prepare future generations for our, quote, new economy. Education and job skills training are critical components of efforts to succeed. The tax laws are one important and successful tool for encouraging business innovation and job training in today's new economic environment.

I welcome all the witnesses that appear before us today and particularly our colleague, Representative Minge.

Chairman HOUGHTON. Thanks very much, Mr. Coyne.

Mr. Weller, would you like to make an opening statement?

Mr. WELLER. Yes; thank you, Mr. Chairman. I would like just to make a few brief comments. I want to commend you for conducting these hearings. You know, today, there is over 100 million Ameri-

cans that are online. In fact, seven Americans go online for the first time every second. 4.8 million Americans today are employed in the technology sector, and that is more than oil, steel and auto industries combined. So there is a tremendous amount of opportunity.

And, of course, my home State of Illinois ranking fourth in technology employment, third in technology exports, has seen wages in the technology sector 59 percent higher than the traditional old economy. So we know there is a lot of opportunity for Illinoisans as well as all Americans in the technology sector to become part of the new economy. But I think it is important to note that the tax code does have an impact on the new economy, and that is why today's hearing is so important. I am proud the House has led the way to, of course, lower the tax burden on technology; working to repeal the telecommunications tax on telephone service; to extend for 5 years the Internet tax moratorium and also to move forward with legislation to block the FCC from imposing new Internet access fees.

Today's hearing, of course, is on depreciation treatment of technology, and I think this is an important subject today and one I look forward to engaging with your witnesses in, Mr. Chairman. I would like to note that I have introduced legislation along with Tom Davis, Billy Tauzin and Jennifer Dunn, legislation that addresses the depreciation treatment of computers.

You know, today, our tax code says that you have to keep that office computer on the books for 5 years, but the business community, you know, which uses computers, whether it is a real estate office or a local insurance office as well as a major corporation, they replace them about every 14 months. And, of course, that just doesn't make sense to carry it on the books for 5 years if you are only going to use it in the office for barely a year, and our legislation recognizes that; works to bring reality, we believe, to the tax treatment for depreciation for those office computers, because we would allow you to expense or fully deduct in the year that you purchase it, the cost of that computer.

We believe that is common sense, and Mr. Chairman, I would like to work with you as well as the Administration, Treasury and others to move forward on depreciation reform on the treatment of computers and other areas of technology.

So I look forward to this hearing, and I thank you for the opportunity to be part of it.

Chairman HOUGHTON. Thank you very much.

Now, we have many distinguished witnesses, none more so than the Honorable David Minge, Member of Congress from Minnesota.

Mr. Minge?

STATEMENT OF HON. DAVID MINGE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. MINGE. Well, thank you very much, Mr. Chairman.

I would like to testify for a couple of minutes about the Distorting Subsidies Limitation Act. This is H.R. 1060. It is a bill that I have introduced earlier in this session, and I have talked to you and a number of our colleagues about one of the problems that we face in our economy in trying to ensure that we allocate resources in the most logical fashion possible is the distortions that occur

when the tax code allows and States, and local units of government take advantage of, one another.

And I have a prepared statement that I have filed with the committee, and I would like to ask that that be allowed to be in the record, and I will make some brief oral comments about this and not stick to that statement.

Chairman HOUGHTON. Absolutely; without objection.

Mr. MINGE. Okay; the problem that I have identified and I have worked with several economists on is the efforts that States and local units of government make to attract business from their neighbors. And we're all familiar with the practice. I worked on economic development in the small rural community in which I practiced law before I ran for Congress, and I know that it was a regular issue: how does Minnesota prevent South Dakota from, so to speak, stealing some of its best employers?

And on the other hand, Minnesota is looking at Connecticut or California and asking how can we lure those businesses to Minnesota? What incentives do we have to give? Now, the best type of competition between the States is to have quality education systems; to have infrastructure that meets the needs of the business community; to have tax policies which stimulate investment. We don't need to be taking billions of dollars of taxpayer money and providing direct incentives in the form of buildings or sometimes even cash transfers in order to induce a business to move from one community to another.

But, in fact, we are. It has been estimated by Professor Kenneth Thomas of the University of Missouri that more than $15 billion annually of tax money is being spent by State and local government to induce businesses to move from one location to another. This is a vast sum. It would educate 3 million elementary school students for a year; it would hire 300,000 law enforcement officers or construct 6,000 miles of four-lane highway.

We can't afford as a country to watch this amount of money being spent unnecessarily and in a way that doesn't make sense with sound economic policy. This is a situation that cries out for a response, and indeed, we have been requested by several State legislators; many economic planners, governors and others to take action, because what the States have found is that they can't unilaterally disarm. One State, let's say New York, can't say we are not going to offer any subsidies to try to prevent businesses from leaving New York; we will simply have the best environment possible for businesses in our State.

But then, New Jersey comes along, and it says wouldn't you like to move the New York Stock Exchange over to Hoboken? Or wouldn't you like to have your corporate headquarters over in Jersey City or some other location, or Kvaerner is in Pennsylvania, and the ship yards in Philadelphia are to be reconstructed, and I believe there was a $400 million package that was offered to Kvaerner.

If New York tries to disarm and not use that, but New Jersey does not, then, the businesses will exploit this difference. And so, what has been pointed out is that it takes Congressional action if we are going to deal with this situation, and this, in a sense, is an unfinished item of business from the establishment of our Federal

union. It was not adequately dealt with initially by Congress, and it has lingered, and it has festered.

In my own home State, we have been treated to the spectacle of professional sports teams imploring the State legislature and the governor for untold millions of dollars for new stadiums. Otherwise, the sports team says we have no alternative but to go to another State which will offer us a stadium that they have paid for.

Well, this is just one aspect of a problem that I think is severe, and with a $15 billion a year price tag, it is very costly to State and local government. The legislation that I have introduced would address this by first having an excise tax on the benefits, so that there would be a negative incentive for businesses to seek this type of assistance. It would also preclude the use of Federal grant money for that type of subsidy; and finally, it would make sure that industrial revenue bonds or enterprise bonds cannot be issued and have their interest treated as tax free under the Internal Revenue Code if the proceeds are to be used in this manner.

I must say that I have worked very closely with several economists on this. The Federal Reserve Bank of Minneapolis has made this a top priority in terms of economic research and policy development at that bank, and the chief economist at the bank has assisted in the preparation of this legislation.

One final comment in this respect: I have held roundtable discussions with folks on this proposal, and the comment that came from a businessperson was the biggest problem with your bill is that the excise tax is not high enough. It ought to be 100 percent. And instead, the tax rate that was chosen is the corporate tax rate under the Internal Revenue Code.

Well, I would like to thank you very much for the opportunity to testify about this problem. I think it is certainly one that our States face as they compete with one another for high-tech industry, in this new-age economy, and hopefully, it is something that we can address as we attempt to address other problems that face our country and face our economy. Thank you very much.

[The prepared statement follows:]

Statement of Hon. David Minge, a Representative in Congress from the State of Minnesota

I am pleased by the opportunity to testify before the subcommittee today on an abuse of the tax code that unwillingly facilitates the tragic bidding war among communities for business development. This handicaps our communities from making adequate investments to prepare them and their citizens for the economic demands of the new millennium.

States and cities across the country are competing against one another to lure companies that will provide jobs to local residents. This has been happening for years, and it probably always will, given our country's commitment to the free market economy and rigorous competition. Some localities simply do a better job of ensuring that their area has an educated workforce, efficient transportation infrastructure, and is generally more attractive to employers. That's one of the tenets of good government—create an environment that promotes economic growth and jobs.

We all support such competition. But in the last several years we have seen an increase in competition between the States based on something other than the quality of the infrastructure, schools, or available labor force. Local governments are being forced to spend scarce taxpayer dollars for incentives to attract specific companies looking for a new home, or even more discouraging, just to keep a business from packing up and leaving town.

The problem begins with our tax code. The Federal Government has attempted to address this situation in the past by tackling the most offensive abuses. Limits were placed on the use of tax free municipal bonds to finance projects that benefit

a specific business. Despite the existence of these limitations, the money generated by "enterprise" bonds is typically a subsidy for a private entity and not recognized as taxable income.

All told, State and local government across the country provide more than $15 billion annually in tax rebates and other subsidies, according to Kenneth Thomas of the University of Missouri, St.Louis. That price tag is staggering. Those funds could educate 3 million elementary school students, hire 300,000 police officers or construct 6,000 miles of four-lane highway.

It gets worse. Some of these distorting subsidies are financed through Federal tax dollars. The U.S. General Accounting Office (GAO) reports that Federal block grant funds are being used not only to create jobs, but subsidize the movement of jobs from one State to another. Why should the nation's taxpayers finance these deals that benefit job growth of one State to the detriment of another?

This practice is wide spread. A 1993 Arizona Department of Revenue study found that half of the 50 States had recently enacted financial incentives to induce companies to locate, stay or expand in the State. Targeted businesses have ranged from airline maintenance facilities, automobile assembly plants and professional sports teams to chopstick factories and corn processing facilities. These deals often range into the hundreds of millions of dollars.

For example, Pennsylvania, bidding for a Volkswagen factory in 1978, gave a $71 million incentive package for a factory that was projected to eventually employ 20,000 workers. The factory never employed more than 6,000 and was closed within a decade.

In a 1993 agreement with the State of Alabama, Mercedes received a sweetheart subsidy package worth $253 million to build an auto plant in that job-starved State. Each of the 1,500 jobs created cost the State taxpayers $168,000.

Recently, the Marriott Corporation gleaned what is estimated to be as much as $70 million in subsidies from the State of Maryland and Montgomery County to expand their operation. This firm has been headquartered for decades in the Free State, and has prospered nicely with the help of an educated and productive workforce. When company executives threatened to pick up and leave after 44 years in Maryland, and when they sat down with Virginia officials to discuss "options," Maryland had little choice but pony up with $70 million in tax breaks and road projects or risk seeing Marriott ride into the sunset.

New York City is in a constant battle with the States of Connecticut and New Jersey to retain many businesses currently located within its boundaries. The last year has seen millions upon millions of dollars showered on such well known financial and publishing firms as Bloomberg, Bertelsmanns, Time Warner, the New York Stock Exchange, the New York Board of Trade, CBS, etc . . . Are these the companies that are truly in the need of government subsidies?

It is appropriate that I sit before the Subcommittee on Oversight as oversight of these incentive deals is woefully inadequate. According to a report by Good Jobs First, most States lack comprehensive incentive strategies and follow up audits are rare and of poor quality. Often subsidies are given to corporations with poor fiscal histories or are not used in the areas or ways originally intended.

One glaring example is the deal $429 million public subsidy of the Norwegian ship builder Kvaerner. The purpose of the subsidy was to entice Kvaerner to build a new ship yard at the site of the former Philadelphia Naval Shipyard. According to an August release from the Pennsylvania Auditor General, subsidy money was squandered on items such as a $2,000 swing set, basement renovations and other personal items for a Kvaerner executive. Kvaerner has since pulled out of the ship building industry.

While spending billions of dollars to retain and attract businesses, State and local governments struggle to provide such public goods as schools and libraries, public health and safety facilities, and the roads, bridges and parks that are critical to the success of any community. These subsidy deals have a direct effect on the availability and quality of public services.

The city of Cleveland, while it struggled to keep the Cleveland Browns football team from moving to Baltimore, announced the closing of 11 schools in 1995 for lack of funding, yet the city offered to spend $175 million of public money to fix the Browns' stadium to ward off Baltimore's successful offer to attract the team.

My own State of Minnesota is experiencing a similar dilemma. There has been a lot of talk in the last couple of years about the Minnesota Twins being lured away by a publicly financed stadium in another part of the country. That talk had quieted but has just recently reappeared on the front pages of Minnesota newspapers. The Twins have long been pressing the State and local government for a new sports stadium. It appears now that the cities of Minneapolis and St. Paul are gearing up for a bidding war to publicly finance a new stadium to lure the team. This comes only

a few years after the State legislature and the city of Minneapolis decided against financing a stadium.

Individual States and local governments are powerless to put a stop to the practice. Unilateral disarmament in this bidding war could mean the loss of thousands of jobs to other jurisdictions. At the same time, businesses cannot be blamed for wanting to move into a community that offers the best incentive package. What is clear is that the system itself is flawed, and that we are due for a tune up.

I have had some personal experience with the issue when I served on the County Development Commission in my hometown of Montevideo in western Minnesota. I know from my own work how frustrating it can be for a smaller community to have to compete with communities that have deeper pockets or that are more willing to give breaks or go into debt to win a deal.

We must start considering how to stop the use of tax subsidies that squander limited public resources and distort economic decision-making. I am encouraged that nine State governments, including the Minnesota Legislature, have passed resolutions urging Congress to find an answer to this lingering question. I have consulted with the Minnesota Department of Trade and Economic Development, Mel Burstein and Art Rolnick of the Minneapolis Federal Reserve Bank, Ohio State Senator Charles Horn, local economic development planners and many others to develop legislation and build interest in resolving this problem.

I have introduced a bill that is intended to end competition based on public giveaways rather than sound economic principles. The Distorting Subsidies Limitation Act of 1999 (HR 1060) requires businesses benefitting from special grants or tax deferrals to be taxed on the value of the subsidies at the same rates as currently apply to other income under the Federal corporate tax structure. Let's face it, these subsidies are income that businesses are milking out of local government. I think of this proposed tax as a "sin tax" meant to stop an undesirable activity. I also propose an across the board prohibition on the use of tax-exempt bonds or Federal resources by States and communities to lure businesses or prevent them from considering other locations.

Several other members of Congress have put together legislative proposals in attempt to halt these distorting subsidies. I salute their efforts, and hope that as concern about this unwise use of public resources continues to grow, we in Congress can hammer out a consensus approach. The point is that Congress is empowered by the Interstate Commerce Clause as the only entity that can put a stop to the economic war between the States.

Chairman HOUGHTON. Well, thanks very much, Dave.

Have you got any questions? No, I don't have any questions? Do you, Jerry? Okay; good; thank you so much, and we expect to receive your written testimony.

Mr. MINGE. Okay.

Chairman HOUGHTON. Thanks very much.

Now, the next witness is Mr. Joseph Mikrut, who is the tax legislative counsel for the United States Department of the Treasury. Mr. Mikrut, it's good to have you here.

Mr. MIKRUT. Thank you.

Chairman HOUGHTON. And whenever you're ready, you can begin your testimony.

STATEMENT OF JOSEPH M. MIKRUT, TAX LEGISLATIVE COUNSEL, U.S. DEPARTMENT OF THE TREASURY

Mr. MIKRUT. Thank you, Mr. Chairman, Mr. Coyne, distinguished members of the Subcommittee.

I appreciate the opportunity today to discuss with you the tax rules that relate to investments in human, intangible and physical capital in the context of the new economy. Over the last 20 years, the U.S. economy has changed significantly. New industries have emerged, and the use of technology has revolutionized production techniques and improved the efficiency in more traditional industries. These developments have increased the demand for more highly skilled workers who are more productive and better able to adapt to the requirements of new technologies.

In addition, access to computers and the Internet has increased significantly, creating opportunities to participate in the new digital economy. In view of these changes, this hearing appropriately focuses on whether Federal tax rules are keeping pace with the new economy. The Treasury Department has previously submitted testimony on the importance of the Administration's budget initiatives supporting the research credit; providing educational incentives; bridging the digital divide and making life-saving vaccines available worldwide.

I will not repeat these discussions this afternoon. Rather, my comments will focus on the results of the Treasury Department's recent analysis of current-law cost recovery provisions. This last July, the Treasury Department issued its report to the Congress on depreciation recovery periods and methods. In developing its study, the Treasury Department solicited and received comments from numerous interested parties and consulted with the tax writing committee staffs.

The report emphasizes that an analysis of the current U.S. depreciation system involves several issues, including those related to proper income measurement, savings and investment incentives and the administerability of the tax system. The history of the U.S. tax depreciation system has shown that provisions intended to achieve certain of these goals; for example, attempting to measure income accurately by using a facts and circumstances approach, may clash with other worthwhile goals; for example, having to have a very administerable, easy-to-apply system.

Accordingly, the report identifies issues related to the design of a workable and relatively efficient depreciation system and reviews options for possible improvements to the current system with those competing goals in mind. Resolution of the issue of how well the current recovery periods and methods reflect the useful lives and economic depreciation rates would involve detailed empirical studies and years of analysis. The data required for this analysis would be costly and difficult to obtain. Thus, the report does not contain any legislative recommendations concerning specific recovery periods or methods for any particular piece of property. Rather, the report is intended to serve as a starting point for public discussion of possible general improvements to the U.S. cost recovery system. We look forward to working with the tax writing committees in this endeavor.

Based on available estimates of economic depreciation, tax depreciation allowances are more generous at current inflation rates, on the average, than those implied by economic depreciation. This conclusion, however, is based on estimates of economic depreciation that may be somewhat dated. The relationship between tax and economic depreciation changes with the rate of inflation, and because current law depreciation allowances are not indexed for inflation, the current low rates of inflation reflect the fact that economic depreciation may be slower than tax depreciation.

In general, current law generally generates relatively low tax costs for investment in equipment, public utility property and intangibles and relatively high tax costs for investments in nonresidential buildings. These differences in tax costs, standing alone,

may distort investment decisions, encouraging investors to underinvest in projects with relatively high tax costs.

The report also finds that the current depreciation system is dated. The asset class lives that serve as the primary basis for the assignment of recovery periods have remained largely unchanged since 1981 and are largely based on studies that date back to the 1960s. Entirely new industries have developed in the interim, and manufacturing processes in traditional industries have changed. These developments are not reflected in the current cost recovery system, which does not provide for updating depreciation rules to reflect new assets, new activities and new production technologies.

As a consequence, income may be mismeasured for these assets relative to the measurement of income generated by properly classified assets. However, this does not mean that depreciation allowances for new assets or new industries are necessarily more mismeasured than other assets.

The replacement of the existing tax depreciation structure with a system more closely related to economic depreciation is sometimes advocated as an ideal reform. However, there are several issues that come about with this reform. One issue is trying to find the appropriate data in order to reflect proper economic depreciation. A second reform would involve indexing for inflation. Current law does not—as I mentioned earlier, does not index for inflation, while an ideal income tax system would. Indexing, however raises several concerns, including the revenue costs, complexity and possible undesirable, tax-motivated transactions.

In summary, Mr. Chairman, the Treasury Department's recent depreciation report raises several issues that need to be addressed in modifying the present cost recovery system and provides several possible options for modifications in the system. We intend that the report would serve as a starting point for public discussion of improvements to the cost recovery system. We applaud the efforts of Chairman Archer in commissioning this study and you, Mr. Chairman, in holding this hearing to further this discussion.

We look forward to working with you and the tax-writing committees on this matter. I'd like to submit my entire statement for the record, and I'd be happy to answer any questions you may have.

[The prepared statement follows:]

Statement of Joseph M. Mikrut, Tax Legislative Counsel, U.S. Department of the Treasury

Mr. Chairman, Mr. Coyne, and distinguished Members of the Subcommittee:

Thank you for giving me the opportunity to discuss with you today the tax rules governing depreciation, research and experimentation, and workforce training in the context of the "new economy." Over the past 20 years, the U.S. economy has changed significantly. New industries have emerged, such as cellular communications and the Internet, and the use of computers has revolutionized production techniques and improved efficiency in more traditional industries, such as manufacturing. In many industries these developments have increased the demand for more highly-skilled workers who are more productive and better able to adapt to the requirements of technological advances. In addition, access to computers and the Internet has increased significantly, creating opportunities to participate in the new digital economy.

In view of these economic changes, this hearing appropriately focuses on whether Federal tax laws are keeping pace with the new economy.

My comments today will focus on the results of the Treasury Department's recent analysis of cost recovery provisions in Report to the Congress on Depreciation Re-

covery Periods and Methods. I will also review the tax treatment of research and experimentation expenses and the tax treatment of the cost of maintaining a skilled workforce. The Administration recognizes the importance of the research credit for encouraging technological development and has supported its extension. The Administration's FY 2001 Budget includes proposals that would encourage individuals and businesses to undertake more education and training. In addition, the Administration recognizes the need to ensure that residents of inner cities and less affluent rural communities have full access to the opportunities that symbolize the promise of the new economy. In that regard, the Budget includes several proposals that will help bridge the digital divide.

THE TREASURY DEPRECIATION STUDY

The Tax and Trade Relief Extension Act of 1998 directed the Secretary of the Treasury to conduct a comprehensive study of the recovery periods and depreciation methods under section 168 of the Internal Revenue Code, and to provide recommendations for determining those periods and methods in a more rational manner. The explanation of the directive in the 1998 Act indicates that the Congress was concerned that the present depreciation rules may measure income improperly, thereby creating competitive disadvantages and an inefficient allocation of investment capital. The Congress believed that the rules should be examined to determine if improvements could be made. In developing its study, the Treasury Department solicited and received comments from numerous interested parties.

In July, 2000 the Treasury Department issued its Report to the Congress on Depreciation Recovery Periods and Methods. The Report emphasizes that an analysis of the current U.S. depreciation system involves several issues, including those relating to proper income measurement, savings and investment incentives, and administrability of the tax system. The history of the U.S. tax depreciation system has shown that provisions intended to achieve certain of these goals (for example, attempting to measure income accurately by basing depreciation on facts and circumstances) may come at the cost of other worthwhile goals (for example, reducing compliance and raising administrative burdens). Accordingly, the Report identifies issues relating to the design of a workable and relatively efficient depreciation system, and reviews options for possible improvements to the current system with these competing goals in mind.

Resolution of the issue of how well the current recovery periods and methods reflect useful lives and economic depreciation rates would involve detailed empirical studies and years of analysis. The data required for this analysis would be costly and difficult to obtain. Thus, the Report does not contain legislative recommendations concerning specific recovery periods or depreciation methods. Rather, the Report is intended to serve as a starting point for a public discussion of possible general improvements to the U.S. cost recovery system. We look forward to working with the tax-writing Committees in this important endeavor.

Current Law

The Internal Revenue Code allows, as a current expense, a depreciation deduction that represents a "reasonable allowance for the exhaustion, wear and tear (including a reasonable allowance for obsolescence)—(1) of property used in a trade or business, or (2) of property held for the production of income." Since 1981, the depreciation deduction for most tangible property has been determined under rules specified in section 168 of the Code. The Modified Accelerated Cost Recovery System, or MACRS, specified under section 168 applies to most new investment in tangible property.

MACRS tax depreciation allowances are computed by determining a recovery period and an applicable recovery method for each asset. The recovery period establishes the length of time over which capital costs are to be recovered, while the recovery method establishes how capital costs are to be allocated over that time period. All tax depreciation is based on the original, historical cost of the asset and is not indexed for inflation.

The tax code assigns equipment (and certain non-building real property) to one of seven recovery periods that range in length from three years to 25 years. This assignment typically is based on the investment's class life. Class lives for most assets are listed in Rev. Proc. 87–56; others are designated by statute. Generally, assets with longer class lives are assigned longer recovery periods.

For equipment, the MACRS recovery period depends either on the type of asset or the employing industry. Certain assets, such as computers, office furniture, and cars and trucks are assigned the same recovery period in all industries. To a large extent, however, the current depreciation system is industry based rather than asset

based, so that assets are assigned recovery periods determined by the employing industry.

The applicable method of depreciation depends on the asset's recovery period. Assets with a recovery period of three, five, seven or ten years generally use the double declining balance method. Assets with a fifteen or a twenty-year recovery period generally use the 150 percent declining balance method. Assets with a twenty-five year recovery period use the straight-line method.

Non-residential buildings generally are depreciated over a 39-year recovery period using the straight-line method. Nonresidential buildings include commercial buildings, such as office buildings and shopping malls, as well as industrial buildings such as factories. Residential buildings (e.g., apartment complexes) are depreciated over a 27.5-year period using the straight-line method. The recovery period for buildings is the same regardless of industry. For tax purposes, a building includes all of its structural components. The cost of these components is not recovered separately from the building; rather these costs are recovered using the life and method appropriate for the building as a whole.

Principal Issues and Findings

Based on available estimates of economic depreciation, cost recovery allowances for most assets are more generous at current inflation rates, on average, than those implied by economic depreciation. This conclusion, however, is based on estimates of economic depreciation that may be dated. The findings are discussed more fully in the Report. The relationship between tax and economic depreciation changes with the rate of inflation because current law depreciation allowances are not indexed for inflation. Furthermore, the relationship between tax depreciation and economic depreciation varies substantially among assets. In general, accelerated cost recovery allowances generate relatively low tax costs for investments in equipment, public utility property and intangibles, while decelerated cost recovery allowances generate high tax costs for investments in other nonresidential buildings. These differences in tax costs, standing alone, may distort investment decisions, discouraging investment in projects with high-tax costs, even though they may earn higher pre-tax returns.

The current depreciation system is dated. The asset class lives that serve as the primary basis for the assignment of recovery periods have remained largely unchanged since 1981, and most class lives date back at least to 1962. Entirely new industries have developed in the interim, and manufacturing processes in traditional industries have changed. These developments are not reflected in the current cost recovery system, which does not provide for updating depreciation rules to reflect new assets, new activities, and new production technologies. As a consequence, income may be mismeasured for these assets, relative to the measurement of the income generated by properly classified assets. However, this does not mean that depreciation allowances for assets used in newer industries or for new types of assets in older industries are necessarily more mismeasured than other assets.

Current class lives have been assigned to property over a period of decades, under a number of different depreciation regimes serving dissimilar purposes, and with changed definitions of class lives. The ambiguous meaning of certain current class lives contributes to administrative problems and taxpayer controversies. The current system also makes difficult the rational inclusion of new assets and activities into the system, and inhibits rational changes in class lives for existing categories of investments.

Policy Options

The replacement of the existing tax depreciation structure with a system more closely related to economic depreciation is sometimes advocated as the ideal reform. While perhaps theoretically desirable, such a reform faces serious practical problems. An approach based on empirical estimates of economic depreciation is hampered by inexact and dated estimates of economic depreciation, and by measurement problems that will plague new estimates. Economic depreciation also requires indexing allowances for inflation. Indexing raises several concerns, because it would be complex and may lead to undesirable tax shelter activity. Another concern is its revenue cost; indexing could be expensive at high inflation rates.

Because of other inefficiencies in the tax code, it is unclear that switching to a system based on economic depreciation would necessarily improve investment decisions. Switching to economic depreciation could exacerbate some tax distortions at the same time that it alleviated others. At current inflation rates, switching to economic depreciation would raise the tax cost of most business investment. Thus, it would reduce overall incentives to save and invest. However, because current depreciation allowances are not indexed for inflation, at higher inflation rates switching

to economic depreciation would promote both lower and more uniform taxes on capital income.

Comprehensively updating and rationalizing the existing asset classification system would address several income measurement and administrative problems. For example, it would allow the proper classification of new assets and assets that have changed significantly. Comprehensive reform of MACRS recovery periods and methods would be possible once the class-life system has been rationalized. These changes might move the system closer to one based on economic depreciation, or perhaps provide a more uniform investment incentive. A systematic overhaul, however, would be an ambitious project. It would involve a significant (and costly) effort to collect and analyze data in order to determine the class lives of new and existing assets and activities. This would place a large burden on taxpayers required to provide these data. It also may require granting Treasury the resources and the authority to change class lives.

Less comprehensive changes could improve the functioning of the current depreciation system. These changes might address narrower issues, such as the determination of the appropriate recovery period for real estate, the possible recognition of losses on the retirement of building components, or the reduction of MACRS recovery period cliffs and plateaus. These and other issues are discussed in more detail in the Report.

For many industries, technological obsolescence may be a more important factor in determining asset depreciation than physical wear and tear. The decline in value of certain assets may be associated with the introduction of newer, more technologically superior assets that may cause a rapid disposition of assets of earlier vintage. Moreover, with increased computerization, technological changes may be occurring more frequently than in the past. In such circumstances the determination of appropriate tax depreciation may raise the concern that current recovery periods do not adequately reflect the rapid decline in value due to more frequent replacement or to other factors. In particular, the development of computers and the integration of computers into the production process raises the concern that the current recovery period is too long for computers and for production equipment that increasingly relies on computer technology.

Current law creates a distinction between stand-alone computers and computers used as an integrated part of technology. Stand-alone computers are given a five-year recovery period. Computers used as an integral part of other equipment are depreciated on a composite basis as part of the underlying asset. Consequently, their costs generally are recovered over 5, 7, 10 or more years.

Some commentators have suggested that, at least in their initial applications, computers do not generally last for five years. This suggests rapid obsolescence, which some commentators use to support their argument that the five-year recovery period for computers is too long. However, the useful economic life of a computer does not end with its initial application. We are aware of no careful empirical study that clearly substantiates the claim that computers have a sufficiently short useful economic life to merit a shorter recovery period.

Some industry representatives also argue that computerized equipment may be depreciated over too long a recovery period. Most class lives for equipment pre-date the computer revolution. Thus, the class lives may fail to reflect the relatively large cost share currently accounted for by relatively short-lived computer components. A possible solution to this problem would be to depreciate assets that encompass integrated circuits or "computers" using the same 5-year recovery period available to stand-alone computers. While eliminating the tax distinction between integrated and stand-alone computers has merit, it also raises two serious concerns. First, integrated circuits are widely used. Consequently, depreciating over the same 5-year period all equipment that contains a computer would effectively restore ACRS in that virtually all equipment would receive the same (short) depreciation write-off. Such a depreciation system would not be neutral if, in fact, the equipment has different economic lives; it would favor those industries whose equipment lasts longer than 5 years. Second, restricting the 5-year recovery period to the cost component represented by computer technology would raise difficult problems in tax administration. Separating the cost of the integrated computer from the cost of remainder of the property would be very difficult.

Another issue arises out of the general difficulty the current system has in establishing and modifying class lives. Because establishing and changing class lives and recovery periods generally requires Congressional action, it has proven difficult to keep the tax depreciation system current. One possible solution would give Treasury the authority to establish and modify class lives. To be effective, Treasury also would need the additional authority to require taxpayers to collect, maintain, and submit the data necessary to measure economic depreciation or useful economic

lives. The collection, maintenance and provision of these data, however, would impose a heavy cost on taxpayers, and the data's analysis would require significant Treasury resources. In addition, a piecemeal approach to modifying class lives may not improve overall neutrality, because depreciation rules would be established or modified only for a subset of assets.

TAX TREATMENT OF RESEARCH AND EXPERIMENTATION

Technological development is an important component of economic growth and our ability to compete in the global marketplace. However, firms may underinvest in research because it is difficult to capture the full benefits from their research and to prevent their costly scientific and technological advances from being copied by competitors. Because other firms and society at large frequently benefit from the spillover of research conducted by individual firms, the private return to research often is lower than the total return. In this situation, government action can improve the allocation of resources by increasing research activity.

The tax rules provide a number of incentives for research and experimentation. To encourage taxpayers to undertake research, and to simplify the Administration of the tax laws, special flexible tax accounting rules are provided for investments in the research and experimentation. This treatment may be applied to the costs of wages and supplies incurred directly by a taxpayer, to contract research expenses for research undertaken on behalf of a taxpayer by another, and to cost sharing research expenses resulting from technology sharing arrangements with related foreign parties.

Taxpayers may elect to deduct currently the amount of research and experimental expenditures incurred in connection with a trade or business, notwithstanding the general rule that business expenses to develop or create an asset with a useful life extending beyond the current year must be capitalized. Expensing of research and experimentation expenditures provides a tax incentive for such activities and is simple. To encourage investments by start-up companies in research, this election to deduct research expenses may be applied prior to the time a taxpayer becomes actively engaged in a trade or business. Under these rules, taxpayers have the option to elect to defer and amortize research and experimental expenditures over five years, and this election may be applied for all of a taxpayer's research expenses or on a project by project basis. Pursuant to a long-standing revenue procedure, the tax accounting rules applicable to research and experimental expenditures also extend to software development costs.

As a further inducement to the conduct of research, a special five-year depreciation life is provided for tangible personal property used in connection with research and experimentation.

The research credit fosters new technology by encouraging private-sector investment in research that can help improve U.S. productivity and economic competitiveness. For that reason, the Administration has supported an extension of the research credit.

Under present law, the research credit is equal to 20 percent of the amount by which a taxpayer's qualified research expenditures exceed a base amount. The base amount for the taxable year is computed by multiplying a taxpayer's "fixed-base percentage" by the average amount of the taxpayer's gross receipts for the four preceding years. Except in the case of certain start-up firms, the taxpayer's fixed-base percentage generally is the ratio of its total qualified research expenditures for 1984 through 1988 to its gross receipts for those years. The base amount cannot be less than 50 percent of the qualified research expenses for the year.

Taxpayers are allowed to elect an alternative research credit regime. Taxpayers that elect this regime are assigned a three-tiered fixed base percentage (that is lower than that under the regular research credit) and a lower credit rate. A credit rate of 2.65 percent applies to the extent that a taxpayer's research expenses exceed a base amount computed using a fixed-base percentage of 1 percent but do not exceed a base amount computed using a fixed-base percentage of 1.5 percent. A credit rate of 3.2 percent applies to the extent that a taxpayer's research expenses exceed a base amount computed using a fixed-base percentage of 1.5 percent but do not exceed a base amount computed using a fixed-base percentage of 2.0 percent. A credit rate of 3.75 percent applies to the extent that a taxpayer's research expenses exceed a base amount computed using a fixed-base percentage of 2.0 percent.

Qualified research expenditures consist of "in house" expenses of the taxpayer for research wages and supplies used in research, and 65 percent of amounts paid by the taxpayer for contract research conducted on the taxpayer's behalf (75 percent for amounts paid to research consortia). Certain types of research are specifically excluded, such as research conducted outside the United States, research in the so-

cial sciences, arts, or humanities, and research funded by another person or governmental entity.

A 20-percent research credit also is allowed for corporate expenditures for basic research conducted by universities and certain nonprofit scientific research organizations to the extent that those amounts exceed the greater of two prescribed floor amounts plus an amount reflecting any decrease in non-research donations.

The deduction for research expenses is reduced by the amount of research credit claimed by the taxpayer for the taxable year. The credit is scheduled to expire on June 30, 2004.

Tax Treatment of the Cost of Maintaining a Skilled Workforce

The skill of America's labor force is crucial to maintaining the U.S. role in the world economy. Well-educated workers are essential to an economy experiencing technological change and facing global competition. Not only are better-educated workers more productive, they are more adaptable to the changing demands of new technologies. A highly skilled labor force makes possible technological change and its spread throughout the economy. Current tax law encourages employers to invest in worker training and individuals to invest in their own skills. Administration proposals would create additional incentives.

Under present law, employers deduct from current income the costs of training and educating their workers, whether the expenses are paid to third-party providers or to the firms' own employees who provide formal or informal training. Education and training is deductible either as a necessary business expense (section 162) if it is related to the employee's current job position, or as employee compensation if it is unrelated. Although education and training often contributes to a worker's human capital and provides both the individual and the firm a return for years to come, such expenses generally are deducted currently rather than capitalized and depreciated over time as the benefit is produced. This expensing of education and training treats investment in human capital more generously than most investments in physical capital, which generally are capitalized and depreciated over time. An investment in human capital would therefore be more attractive after-tax than an investment in physical capital which produced the same pre-tax return.

For workers, employer-provided education and training is excluded from their taxable income, and is therefore tax-free, if it maintains or improves their skills for their current jobs. Even if it does not relate to their current jobs, the cost of education (but not graduate-level courses) up to $5,250 per year provided by an employer under a section 127 education plan may be excluded from workers' taxable earnings. Educational expenses paid by an employer outside of a section 127 plan are included in the employee's gross income if the education (1) relates to certain minimum educational requirements, (2) enables the employee to work in a new trade or business, or (3) is unrelated to the current job altogether. Section 127, which is scheduled to expire for courses beginning after December 31, 2001 lowers the cost to the employee of education and training (relative to paying for it out of after-tax income) and thereby encourages the worker to undertake more investment in human capital.

Education and training expenses incurred by a student (or by a family on his/her behalf) generally are not provided special tax treatment. However, an employee's education expenses needed to maintain or improve a skill required for the taxpayer's current job and not reimbursed by an employer are deductible to the extent that the expenses, along with other miscellaneous deductions, exceed two percent of the taxpayer's adjusted gross income. In addition, individuals may claim a nonrefundable Hope Scholarship credit of up to $1,500 per eligible student for qualified tuition and related expenses incurred during the first two years of post-secondary education. Finally, taxpayers may claim a nonrefundable Lifetime Learning credit for post-secondary or graduate education tuition and related expenses, up to a maximum credit of $1,000 per family ($2,000 after 2002). These education credits phase out for certain higher-income taxpayers.

The Administration's Budget for FY 2001 includes several proposals to further encourage individuals and employers to undertake more education and training.

(1) The College Opportunity Tax Cut would expand the current-law Lifetime Learning credit by increasing the credit rate (from 20 percent to 28 percent) and by raising the income range over which the credit would be phased out (by $10,000 for singles and by $20,000 for joint returns). It would also allow taxpayers to elect to take an above-the-line deduction for qualified tuition and expenses in lieu of the Lifetime Learning credit. By lowering the after-tax cost of post-secondary education, the College Opportunity Tax Cut would encourage families and workers to invest

in the training and education they most need to prepare for and keep up with the demands of the new economy.

(2) The Administration would expand the section 127 exclusion for employer-provided education to include graduate courses beginning after July 1, 2000 and before January 1, 2002. As the economy becomes more technologically advanced, cutting-edge skills and information necessary for continued growth are increasingly disseminated in graduate-level courses. Graduate education is an important contributor to the human capital of the labor force. The Administration also wishes to continue working with Congress to extend section 127 for both undergraduate and graduate courses beginning after 2001.

(3) The Administration has proposed a tax credit for employer-provided education programs in workplace literacy and basic computer skills. This would allow employers who provide certain workplace literacy, English literacy, basic education and basic computer training programs to educationally needy employees to claim a 20-percent credit, up to a maximum of $1,050 per participating employee per year. With the increasing technological level of the workplace of the 21st century, workers with low levels of education will fall farther behind their more educated co-workers and run greater risks of unemployment. Lower-skilled workers are less likely to undertake needed education themselves, and employers may hesitate to provide general education because the benefits of basic skills and literacy education are more difficult for employers to capture than the benefits of job-specific education. The proposed credit will serve those most in need of help in getting on the first rung of the technological ladder.

The Administration strongly supports these three proposals as part of its overall efforts to maintain and enhance the skill of the workforce. These proposals would encourage investment in human capital so that workers, wherever they fall on the education spectrum and wherever they are in their working years, can obtain and hone the skills necessary for the economy now and in the future.

TAX PROPOSALS TO BRIDGE THE DIGITAL DIVIDE

Access to computers and the Internet and the ability to use this technology effectively are becoming increasingly important for full participation in America's economic, political, and social life. Unfortunately, unequal access to technology by income, educational level, race, and geography could deepen and reinforce the divisions that exist within American Society. The Administration believes that we must make access to computers and the Internet as universal as the telephone is today -in our schools, libraries, communities, and homes.

In recognition of the importance of technology in the new economy, the President's FY 2001 Budget includes a series of tax incentives to ensure that residents of disadvantaged communities are able to develop the skills that will be essential for labor market success in the coming years. This initiative, to help "bridge the digital divide," consists of three components. The first initiative, discussed above, is a credit to employers who provide training in literacy, basic education, and basic computer skills to educationally disadvantaged workers.

The second measure, designed to encourage corporate donations of computer equipment, builds upon and extends a similar provision of the Taxpayer Relief Act of 1997. Under the 1997 legislation, a taxpayer is allowed an enhanced deduction, equal to the taxpayer's basis in the donated property plus one-half of the amount of ordinary income that would have been realized if the property had been sold. This enhanced deduction, limited to twice the taxpayer's basis, was made available to donors for a limited three-year period. Without this provision, the deduction for charitable contributions of such property is generally limited to the lesser of the taxpayer's cost basis or the fair market value. To qualify for the enhanced deduction, the contribution must be made to an elementary or secondary school. The Administration proposal would extend this special treatment through 2004, as well as expand the provision to apply to contributions of computer equipment to a public library or community technology center located in a disadvantaged community.

The third component is a 50 percent tax credit for corporate sponsorship payments made to a qualified zone academy, public library, or community technology center located in an Empowerment Zone or Enterprise Community. The proposed tax credit would provide a substantial incentive that would encourage corporations to sponsor such institutions. Up to $16 million in corporate sponsorship payments could be designated as eligible for the 50 percent credit in each of the existing 31 Empowerment Zones (and each of the 10 additional Empowerment Zones proposed in the Administration's FY 2001 Budget). In addition, up to $4 million of sponsorship payments would be eligible for the credit in each Enterprise Community. This credit could induce over $1 billion in sponsorship payments to schools, libraries and

technology centers, providing innovative educational programs to disadvantaged communities.

The proposed initiatives for employer-provided education programs in workplace literacy and basic computer skills, corporate sponsorship of qualified zone academies and technology centers, and corporate donations of computers will help bridge the digital divide. This proposal will help to ensure that low-skilled workers receive the training they need to improve their job skills, and that disadvantaged communities have access to innovative educational programs and computer technology.

CONCLUSION

The Treasury Department's recent depreciation report raised issues that would need to be addressed in modifying the present cost recovery system and provided possible options for modifications in the system. We intended that the report would serve as a starting point for a public discussion of improvements to the cost recovery system. We applaud your efforts, Mr. Chairman, to begin that discussion with this hearing, and look forward to working with the Congress on this matter.

The Administration supports the extension of the research tax credit. The Administration recognizes the importance of technology to our national ability to compete in the global marketplace, and the research credit fosters new technology. The credit provides incentive for private-sector investment in research and innovation that can help improve U.S. productivity and economic competitiveness.

The Administration proposals for education and training -the College Opportunity Tax Cut, the expansion of employer-provided education assistance to include graduate courses, and the new tax credit for workplace literacy and basic computer skills -can help develop the skills necessary for the economy of the 21st century. The additional proposed initiatives to address the digital divide -the enhanced deduction for corporate donations of computers and the credit for corporate sponsorship payments to qualified zone academies and technology centers -will help to ensure that low-income communities have access to innovative educational programs and computer technology.

This concludes my prepared remarks. I would be pleased to respond to your questions.

Chairman HOUGHTON. Okay; thanks very much.

You know, you say this is a good starting point. What's a good ending point?

Mr. MIKRUT. Well, I think it depends, Mr. Houghton, on where you want to go. We have identified in the studies several current-law anomalies that could be addressed immediately. For instance, the current system of MACRS has several what are called "cliffs" and "plateaus," where dissimilar assets are grouped together and get the same depreciation treatment, whereas, very similar assets are grouped separately and get very different treatment. That is one issue that could be addressed immediately.

I think there are several other smaller issues. There are certain areas where some simplification could be provided by using general asset accounts. This is an approach that's been advocated by the AICPA. But most of the complaints that you hear about the current depreciation system relate to particular assets. Following the 1986 Act, the Treasury had the authority to examine and modify class lives to reflect more appropriately economic depreciation. This authority was taken back in the 1988 Act. Treasury, although it can study depreciation lives, cannot change the lives. It's now up to the Congress to change the lives.

I think in order to fully reflect what's happening in the new economy, one would have to look at all the depreciation lives, not just those related to the new economy, because new technologies are applied in old industries.

There are more than 100 class lives, so the task of doing a top to bottom analysis of the depreciation system is fairly monumental and would take several years and would involve very costly data gathering. And so, it is up to the Congress, up to the tax writing committees, to try to determine exactly what they want to do. Do they want to have a long-term study that could resolve some of the controversies throughout the system? Or would they prefer to focus on the things that come up immediately with respect to certain assets or—

Chairman HOUGHTON. Long-term is in the eye of the beholder in this particular age.

One other question, and then, I'll turn it over to Mr. Coyne. In terms of asset valuation, that there are obviously differing depreciation schedules in different countries, and with the internationalization of our businesses, both in tangible and intangible assets, do you see this coming together in some sort of a worldwide pattern?

Mr. MIKRUT. The question that you ask is one that's asked frequently, Mr. Houghton, and although it was beyond the scope of the study, we have looked at where the United States tax depreciation system ranks with most of our major trading partners. And what we've found is with respect to equipment, we provide incentives for saving and investment that are at least equal to and perhaps greater than many of our trading partners.

Now, it's often difficult to try to isolate one parameter of a tax system—depreciation—and say, well, this gives one nation a competitive advantage over another. I think you have to look at the entire system as a whole, and that complicates matters. But on a very broad brush analysis, what we've found is that the depreciation methods and lives that we use and how we respond to changes in the technology are comparable to many of our trading partners.

Chairman HOUGHTON. Thank you.

Mr. Coyne?

Mr. COYNE. Thank you, Mr. Chairman.

Mr. Mikrut, the research and development tax credit is currently on the books for a 5-year period. What would the Administration's position be relative to advocates for making that a permanent tax credit?

Mr. MIKRUT. The Administration, as you know, Mr. Coyne, has supported a long-term extension of the credit and has also supported a permanent extension of the credit. We understand that the importance of technology to our national ability to compete in a global economy depends in part upon the research credit, which fosters, as you know, further new technology. Any further modification or extension of the credit, I think, should be taken in the context of any other tax legislation that comes before the Congress.

Mr. COYNE. I wonder if you could try to explain what your view of the disconnect between the ability to fill existing jobs in the economy and the lack of training for personnel who might want to fill those positions.

Mr. MIKRUT. Mr. Coyne, I think this depends on specific pockets of the economy. Clearly, some portions of the economy are growing faster than the others. The IT area is growing much faster than other segments of the economy, and therefore, the demand for a

skilled workforce there is more critical than in others. And eventually, of course, training and other investments have to catch up with those demands.

In response, the Administration has proposed in its digital divide proposal in the budget to provide employers a 20 percent tax credit to the extent that it provides basic computer skills and other literacy requirements. We think that those provisions are important. It supplements the current beneficial treatment that training receives under current law; that training expenses, generally, are deducted rather than capitalized.

Mr. COYNE. Thank you.

Chairman HOUGHTON. Mr. Weller?

Mr. WELLER. Thank you, Mr. Chairman, and Mr. Mikrut, I appreciate the time you're taking before our subcommittee today. In your testimony, you note that you did not submit any specific recommendations, particularly when it comes to depreciation treatment and technology, but if I recall correctly, I voted in the Tax and Trade Relief Extension Act in 1998, over 2 years ago, legislation which directed the Department of the Treasury to come forward with a study and recommendations.

Can you tell me why 2 years is not long enough to do the necessary study to present some recommendations to the Congress?

Mr. MIKRUT. Certainly, Mr. Weller. There are over 100 different assets subject to different depreciation regimes. We had 18 months to complete the study. The development of those class lives for the 100 assets takes years of analysis. We did not necessarily want to be in a position of picking and choosing winners and losers, saying we will study the proper class life for this asset and not the proper study for this other asset.

Mr. WELLER. Sure; well, you know, I think we were all a little disappointed, number one, that it took as long as it did, because we were expecting it this spring so we could look at your recommendations and begin this process, and, of course, we received this report during the August recess. So it makes it difficult for Congress to move forward during this session of Congress, so essentially, we're forced to look at it in the coming Congress, the 107th Congress.

I want to focus on one specific area, depreciation treatment of technology and first, do you believe that the tax code and depreciation treatment of assets, particularly as it comes to technology, do you believe that the current depreciation treatment of technology has the potential to stymie innovation and stymie the acquisition of leading-edge technology to use in the workplace? Do you think the tax code has an impact on that?

Mr. MIKRUT. Certainly, Mr. Weller; as I mentioned in my opening statement, the extent that tax depreciation is slower than economic depreciation creates a disincentive to invest in those technologies. The current tax system, because the lives and methods are frozen based on industries, essentially, that were in existence in the 1960's and 1970's may not reflect new industries that have sprung up.

In addition, the class lives for certain high tech equipment—computers, semiconductor manufacturing equipment and such—those lives are set by statute. So even if the Treasury Department were

to come out with a study that would say those lives should be shorter, present laws wouldn't allow us to change those lives.

Mr. WELLER. Yes; Mr. Mikrut, let's look at something that's a pretty basic equipment in every office in America today, and that's the office PC. What's the recovery period for your desktop PC or my desktop PC if it were owned by private industry?

Mr. MIKRUT. It's 5 years, double-declining balance.

Mr. WELLER. Five years? And in your testimony, you stated—I think it was on page 5—that the Treasury Department was unaware of any careful empirical study I believe was the quote there that establishes that computers have a useful life shorter than 5 years. Can you tell me: has the Treasury Department undertaken any empirical study itself?

Mr. MIKRUT. No, it has not, Mr. Weller.

Mr. WELLER. And why not?

Mr. MIKRUT. Generally, Mr. Weller, the studies have been mandated by Congress. Congress has generally directed us by statute which lives and which pieces of property to study. Again, in the present study, we have not chosen to pick and choose amongst different—

Mr. WELLER. So you haven't taken any initiative to look into that.

You know, if the current recovery period is 5 years for the office PC, and you think about it, 5 years ago, you know, if I have the 1995 PC on my desk today, how long it would take me to access the Internet. Well, we made some notes here just kind of looking back during the last 5 years, development of some of the technology in the workplace, and if we were forced to keep that 5-year-old computer, 1995, the current chips in a PC with an Intel Pentium Pro, an AMD–K5; we've seen three or four generations of new chips since then.

1995, a good PC had 150 megahertz of memory. Today, 500 megahertz is commonplace. 1995, PCs had a floppy disk. Since then, we have been through CD–ROM and now DVD. We now have seen Windows 95, 98 and 2000 applications. We're way behind. The question I have for you is, you know, if we—your personal recommendation: do you believe that 5 years is too long for the office PC for depreciation?

Mr. MIKRUT. I think the visceral reaction of everyone whose looked at this issue is that 5 years is too long for a PC. I think, unfortunately, we would need authority to collect the data from taxpayers in order to do a relatively efficient study. But I think that this is one issue that is clearly worth looking at. In our budget, we take a similar approach with respect to high tech in that we would allow expensing for software.

Mr. WELLER. Sure; just a quick followup on that. You know, when I talk with those who use PCs in the workplace, whether it's a small business like an insurance agent or a real estate office or whether it's a sizeable company with several hundred employees, they tell me that often, they replace these PCs about every 12 to 14 months, and a number of us are offering legislation which would allow you to expense the PC, fully deduct in the year that you purchase it. Do you feel that that recognizes economic reality?

Mr. MIKRUT. Well, unfortunately, as you point out, our study couldn't tell you if that is economic reality or not, because although one taxpayer may hold the computer for a year or less, the computer may have some salvage value when it's disposed of. So the proper measurement of depreciation would be what the taxpayer purchased it for versus what the salvage value is over that period of time. There may be a secondary market for used computer equipment that would make that analysis fairly easy to do relative to other types of property. So this is something that we would like to work with you in trying to determine.

Mr. WELLER. Mr. Chairman, I've run out of time. Thank you, and I look forward to working with you.

Chairman HOUGHTON. Thanks very much.

Ms. Dunn, we've got about 7 or 8 minutes, and then, we really ought to go. So, Ms. Dunn?

Ms. DUNN. Mr. Mikrut, those of us who have supported the R&D tax credits do so because we want to encourage more research. It's estimated that the high tech sector is responsible for 30 percent of our economic growth. These are good, high-paying jobs. I see them in my district near Seattle, Washington. They have dramatically improved our quality of life.

It seems that Treasury is attempting to narrow the scope of the credit and make it much more difficult for businesses to take advantage of. This is especially true of the, quote, common knowledge test that you are, the Treasury, is proposing and that an Oklahoma court recently ruled against. Can you tell us the justification for deviating from the historic definition of qualified research by adding this new language?

Mr. MIKRUT. I think the common knowledge test, Ms. Dunn, is trying to attempt to interpret the statute and legislative history that says that in order to qualify for the credit, the taxpayer must be attempting to discover something. In trying to take the theoretical notion of what discovery means, we try to apply parameters of what's already known, and let's compare that to what the taxpayer is trying to discover.

We have received several comments on the very issue you have raised. The regulations that you're pointing to are proposed regulations; they do not have full force and effect until they're finalized. We're taking the comments that we've received very seriously in developing our next set of guidance.

Ms. DUNN. That's very good, because we are very concerned about this. It's very troublesome for me as I represent constituencies at home. They are fearful that they would have to have intimate knowledge of what every other company is doing, not just in the United States but around the world. So I'm happy that you're looking at that.

I'd like to ask you well, maybe just one question, wrap it all into one about the timing on this plan. Can you tell us whether Treasury is going to finalize the regs this year, and when would that be? And do you expect that the regulations would be finalized as-is, or do you expect changes before they are passed?

Mr. MIKRUT. We have had a significant amount of comments on the regulations. We understand the importance of the regulations, both to taxpayers and practitioners in trying to plan exactly how

they should conduct their research and exactly how they would justify the expenditures and the record-keeping. So we're trying to take all the comments into account.

On the IRS' and Treasury's business plan for this year, it was envisioned that we try to finalize the regulations this year. We've made significant progress on several of the comments, and again, we're still on plan to try to get it done this year, and I think there will be changes from what you see in the proposed regulations.

Ms. DUNN. Can you estimate a time, a date, when you expect them to be finalized?

Mr. MIKRUT. I wish I could, Ms. Dunn. It would be a lot easier for me, too, but I can't at this time.

Ms. DUNN. Thank you.

Thank you, Mr. Chairman.

Chairman HOUGHTON. Okay; thanks, Ms. Dunn.

Mr. Watkins?

Mr. WATKINS. I have only a couple of quick questions. I want to refer to, you know, Mr. Tauzin's letter of July 28 dealing with Section 168. I have been working with a number of Native Americans who are affected by 168(j) and also the 42(a) reservations and non-Indian land. We're working to try to get private sector investments. This expires in 2003. The only problem is they've run up to a time situation now where the private sector investors are trying to get plans, trying to get architectural designs, trying to get an industry ready to go. They have become reluctant about trying to make the decision to make the investments, and they feel they are losing the potential of industry and jobs because of this time shutoff of 2003.

Do you have any plans to ask for some extensions of that time period? For it to be effective, they're going to have to have some extension of those years.

Mr. MIKRUT. I understand your concern, Mr. Watkins. This is a similar concern that some have with the R&E credit and any other investment incentive such that, in order for business to accurately plan to make investments, they need some lead time to know what the law is and how long that law will be extended. The provision that you're pointing to will need a legislative change. This Administration will not be submitting another budget, so we won't be able to, in next year's budget, propose to extend that further than the current sunset date.

Mr. WATKINS. Would you be willing to provide a letter at this time to this Congress to try to have that included in any type of tax extension for the Native Americans? Because if we're really sincere about wanting to try to help them attract private sector jobs, we need to make a move on that, and I think it would be—submitting a letter, and I'd like to request it; I'd appreciate the Chairman trying to get maybe a letter, because we need to move on that. If not, we're just fooling; we're just speaking with a forked tongue ourselves about trying to help the Native Americans attract private sector jobs and build up the private sector economy.

Mr. MIKRUT. We appreciate and we understand and support your goals, Mr. Watkins, and the other question is: will a mere extension be enough? Or would some other change in the program be more effective?

Mr. WATKINS. Well, this was a 10-year program when it started, so, you know, if they had another 10 years, it took them 5 or 6 years to figure out what was happening there, and then, finally, they've gotten rulings. So they could work to implement it. Now, the private sector is kind of pulling back. So we need another 10-year extension on something like this, 5 to 10 years, in order for us to make it effective.

Mr. MIKRUT. We understand, Mr. Watkins. And again, the only issue I was raising is whether—is it merely the passage of time, or should there be some examination of what is more effective: the wage credit or the depreciation shorter lives that really is the engine to attract the jobs that you're seeking to attract?

Mr. WATKINS. I can assure you: I live with Native Americans, and I was the only non-Native American, non Indian on a baseball team growing up, and if you've put your feet under their table like I have and working closely with them, they need all the help they can get in order to attract jobs and to be able to build jobs in those areas, and I think that it would behoove us to try to speak and do what's right.

Mr. Chairman, I hope that we can request and expedite some kind of extension of 168(j) and 42(a) in order to try to help the Native Americans.

Chairman HOUGHTON. All right; fine; thank you. If you do that, it will be very helpful.

So, thank you very much, Mr. Mikrut. We're going to suspend these hearings for awhile. We have four votes, and I hope Mr. Jalbert, Coleman and company will understand. We'll be right back, God and the Speaker willing. Thank you.

[Recess.]

Chairman HOUGHTON. Sorry, everybody, but we're through voting for awhile, and if we can resume the hearing, I'd like to introduce Mr. Jalbert, Chairman, President, and Chief Executive Officer of Transcrypt, International on behalf of the American Electronics Association; and Dorothy Coleman, Vice-President of Tax Policy, National Association of Manufacturers; Molly Feldman, Vice-President of Tax, Verizon Wireless, on behalf of the Wireless Depreciation Coalition; Clifford Jernigan, Director of Worldwide Government Affairs, Advanced Micro Devices; and Theodore Vogel, Vice-President and Tax Counsel of DTE Energy on behalf of Edison Electric Institute and Frederick von Unwerth, General Counsel, International Furniture Rental Association.

So, great to have you here, and Mr. Jalbert, will you begin?

STATEMENT OF MICHAEL E. JALBERT, CHAIRMAN, PRESIDENT, AND CHIEF EXECUTIVE OFFICER, TRANSCRYPT INTERNATIONAL, INC., ON BEHALF OF AMERICAN ELECTRONICS ASSOCIATION

Mr. JALBERT. Good afternoon, Mr. Chairman and members of the Subcommittee. My name is Mike Jalbert, and I am chairman, president and CEO of Transcrypt International. My testimony today is on behalf of the American Electronics Association, also known as the AEA. There are more than 3,000 high-tech company members of the AEA, and I thank you for the opportunity to testify on the tax code and the new economy.

I have prepared this PowerPoint presentation, which you can see over there on my left, to give a visual demonstration of the impact the high-tech industry is making on today's economy and to help explain why our tax code needs to catch up to this industry.

The growth in high-tech and correspondingly in high-tech jobs has been nothing less than extraordinary in the 1990s. High-tech jobs topped 5 million in 1999, adding 1.2 million jobs in the span of just 6 years. The wages for these jobs are quite impressive. The wage differential between the private sector and the so-called high-tech jobs increased from 57 percent in 1990 to 82 percent in 1998. Additionally, the U.S. Federal Reserve—

Chairman HOUGHTON. Just a minute. Break that down a little bit. Say that again.

Mr. JALBERT. What I just said, Mr. Chairman, is that the wage differential between the private sector and the high-tech jobs increased from 57 percent in 1990—

Chairman HOUGHTON. It was plus 57 percent.

Mr. JALBERT. Plus 57 percent; that's correct; to 82 percent in 1998.

This growth was taking place all over the United States, not just in Silicone Valley. For example, my company—

Chairman HOUGHTON. It's Silicon Valley, not Silicone.

Mr. JALBERT. You've got it; Silicon Valley.

[Laughter.]

Mr. JALBERT. For example, my company, Transcrypt International, a wireless equipment leader in communications technology, has offices right here in Washington, D.C., but we have manufacturing facilities and R&D facilities and offices in Lincoln, Nebraska and Waseca, Minnesota and, not surprisingly, high-tech is the single largest merchandise exporter in the United States.

This next slide helps to explain the importance of worker training tax initiatives. The AEA numbers on high employment are actually quite conservative. These numbers are very conservative. In 1999, the number of 5 million high-tech jobs refers only to jobs with the high-tech industry, not all the high-tech jobs throughout the entire U.S. economy.

The necessity of high-tech expertise is crossing all boundaries, and I would suspect that even in your Congressional offices you have hired employees with high-tech expertise to help you better communicate over the Web with your constituents and the larger public. High-tech is everywhere, and the entire U.S. economy is hiring high-tech. AEA member companies are finding it increasingly difficult to hire and retain highly skilled workers.

Permanently extending the Section 127 employer-provided educational assistance exclusion and expanding it to include the pursuit of graduate studies will allow high-tech companies such as mine to address the skilled workforce shortage by providing training for their own employees.

Turning now to R&D, research and development is a key ingredient in the new economy, and that fact is repeated throughout the global marketplace. The R&D tax credit was first enacted in 1981, and it is no coincidence that industry replaced the U.S. Government as the primary R&D spender in that year. High-tech is an R&D-intensive industry, and the R&D credit provides high-tech

and other industries with a critical tax incentive to maintain and increase their U.S.-based research and development.

The R&D tax credit is responsible for stimulating U.S. investment, wage growth, consumption and exports, which all contribute to a stronger economy and a higher U.S. standard of living. This credit should be made permanent, and the regulations governing the credit should be workable.

This final slide clearly demonstrates the U.S. technology usage rates and growth over just the last few years. Interestingly, this growth rate pales in comparison with the growth rate of other countries across the globe. The U.S. percentage of usage growth is 16 percent for computers, 72 percent for the Internet and 54 percent for cellular phone usage. This increase in usage demonstrates there is nothing static about these industries. As the usage rate for high-tech equipment increases, the industry will continue to grow and innovate.

Correspondingly, AEA believes that the recovery periods and depreciation methods under Section 168 should more accurately reflect what is happening in this new economy. Thank you for the opportunity to present the Subcommittee with this overview. I would be happy to answer any questions you may have.

[The prepared statement follows:]

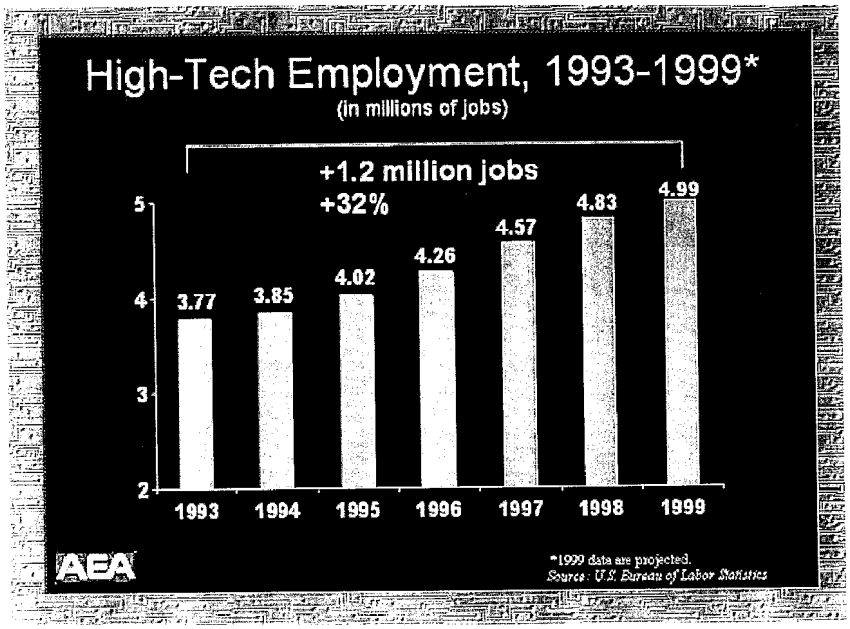
Statement of Michael E. Jalbert, Chairman, President, and Chief Executive Officer, Transcrypt International, Inc., on behalf of American Electronics Association

Good afternoon Mr. Chairman and members of the Subcommittee. My name is Michael E. Jalbert and I am the Chairman, President and CEO of Transcrypt International, Inc., and my testimony today is on behalf of the American Electronics Association (AEA). Transcrypt International, Inc. designs, manufactures and markets trunked and conventional radio systems, stationary land mobile radio transmitters and receivers, including mobile and portable radios, and manufactures information security products that prevent the unauthorized interception of sensitive voice and data communication. The more than 3,000 high-tech company members of the AEA and I thank you for the opportunity to testify on the Tax Code and the New Economy.

I wish to provide the Subcommittee with an important overview of the New Economy, as much of it is included in the membership of AEA. I have prepared this power point presentation to give a visual demonstration of the impact the high tech industry is making on today's economy and to help explain why our tax code needs to catch up to this industry. The statistics presented are collected from the various AEA Cyber reports, including AEA CyberStates 4.0, AEA CyberNation 2.0, and AEA CyberEducation. More information on these Cyber reports can be obtained from the AEA homepage at http://www.aeanet.org

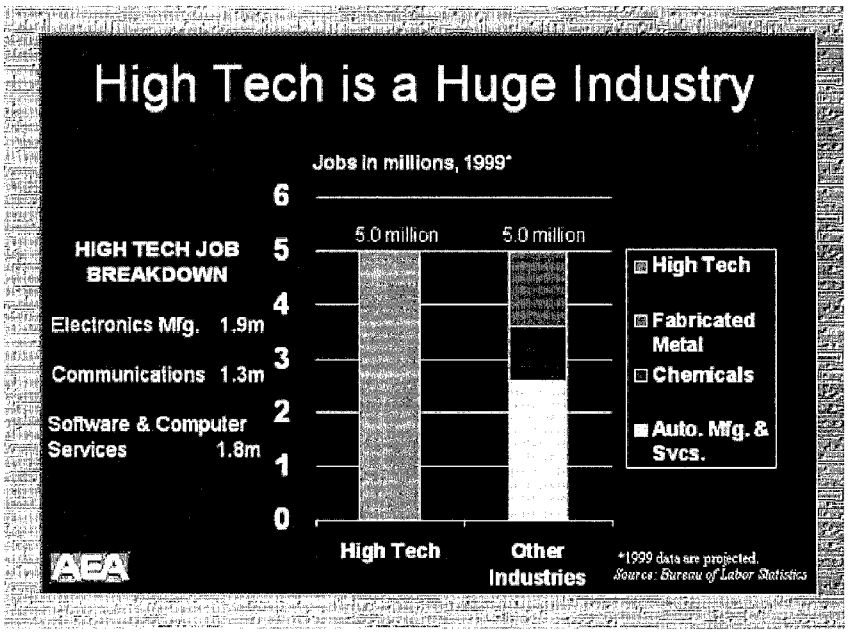
The growth in high tech and correspondingly in high tech jobs has been nothing less than extraordinary in the 1990's. High tech jobs topped 5 million in 1999, adding 1.2 million jobs in the span of just six years. The wages for these jobs is quite impressive—the wage differential between the private sector and high tech jobs increased from 57 percent in 1990 to 82 percent in 1998. Additionally the U.S. Federal Reserve notes that 44 percent of GDP growth in recent years is attributable to high tech. This growth is taking place all over the United States not just in Silicon Valley. For example, my company, Transcrypt International, a wireless equipment leader in communications technology has offices right here in Washington, D.C. and manufacturing facilities in Lincoln, Nebraska and Waseca, Minnesota. And not surprisingly, high tech is the single largest merchandise exporter in the United States.

This quick overview helps to easily explain why the three topic areas chosen by the Oversight Subcommittee for examination during the course of this hearing on the Tax Code and the New Economy are so important: worker training tax initiatives, the research and development tax credit and its regulations, and updating the depreciation recovery periods and methods. As the next slides will demonstrate, AEA specifically supports updating the tax code address these important issues in the U.S. economy.



WORKER TRAINING TAX INITIATIVES

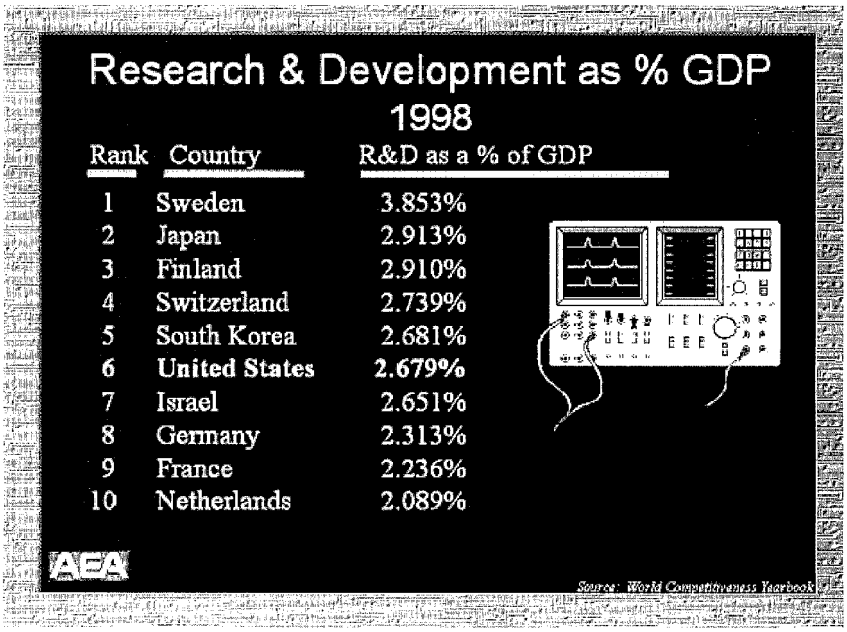
The AEA numbers on high tech employment are actually quite conservative. The 1999 number of 5 million high tech jobs refers only to jobs within the high tech industry, not all of the high tech jobs throughout the entire U.S. economy. The necessity of high tech expertise is crossing all boundaries, and I would suspect that even in your Congressional offices, you have hired employees with high tech expertise to help you better communicate over the web with your constituents and the larger public. High tech is everywhere, and the entire U.S. economy his hiring high tech.

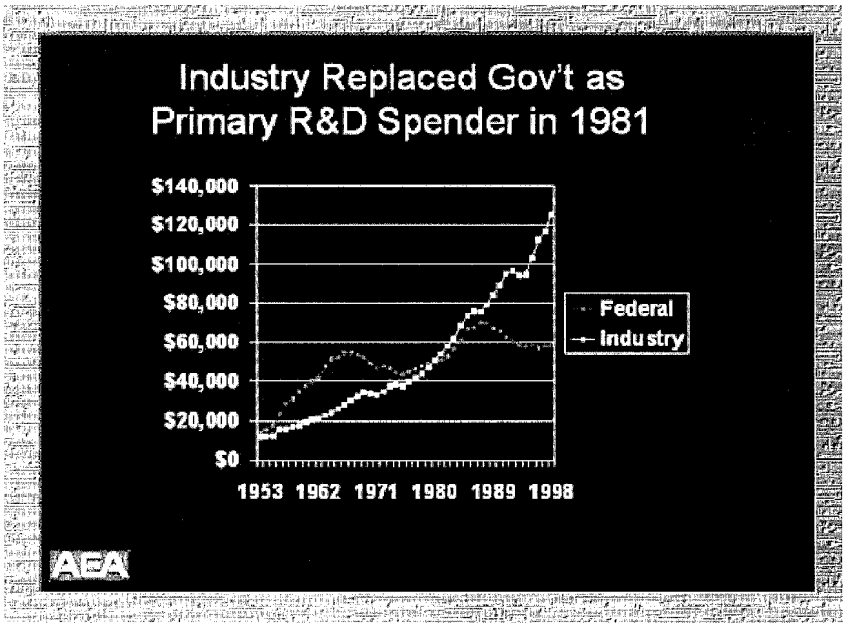


The specific high tech industry product and service spectrum covers semiconductors and software to computers, Internet and telecommunications systems and services. AEA member companies are finding it increasingly difficult to hire and retain highly skilled workers. AEA's CyberEducation study found that the number of undergraduates with high-tech degrees declined 5 percent since 1990. The rapid employment growth combined with fewer college graduates has resulted in a shortage of highly skilled workers. Permanently extending the Section 127 employer-provided educational assistance exclusion and expanding it to include the pursuit of graduate studies (H.R. 323) would allow high-tech companies to address the skilled workforce shortage by providing training for their own employees.

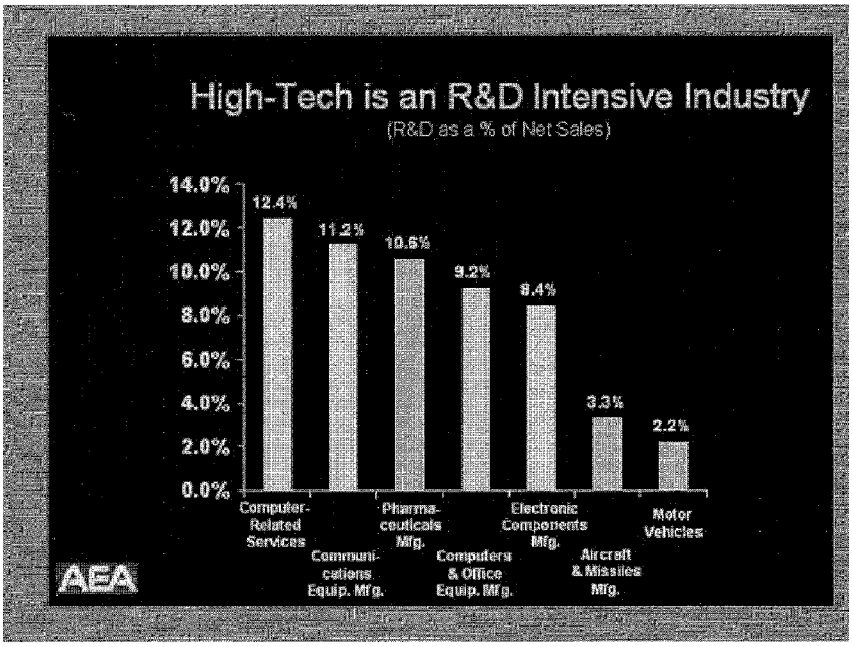
Research and Development Tax Credit

Research and development is a key ingredient in the New Economy and that fact is repeated throughout the global marketplace. The U.S. trails behind other industrialized nations in its investment in R&D.



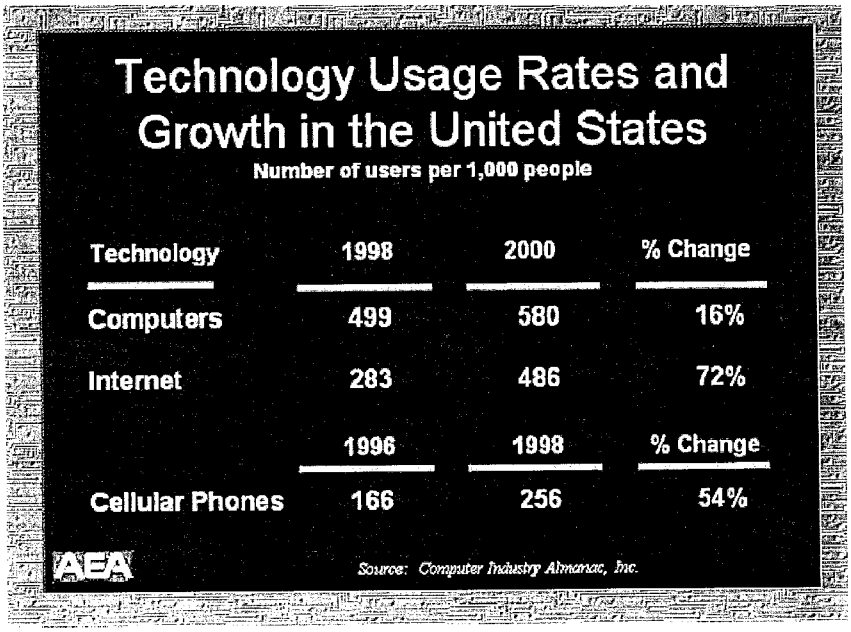


The Research and Experimentation Tax Credit, commonly referred to as the R&D tax credit was first enacted in the U.S. in 1981 and it is no coincidence that industry replaced the U.S. government as the primary R&D spender in that year. This important tax provision provides for a research credit equal to 20 percent of the amount by which a company's qualified research expenditures for a taxable year exceeded its base amount for that year.



High-tech is an R&D intensive industry, and the R&D credit provides high tech and other industries with a critical tax incentive to maintain and increase their U.S.-based research and development. The R&D tax credit is responsible for stimulating U.S. investment, wage growth, consumption and exports which all contribute to a stronger economy and a higher U.S. standard of living. The R&D tax credit helps most AEA member companies (including hardware, software and manufacturers), regardless of size who undertake research. Enactment of a permanent R&D tax credit (H.R. 823) will enable companies to have certainty in their tax planning. AEA strongly supported the five-year extension of this credit last year, and urges Congress to permanently extend this credit now.

Additionally, implementation of regulations that accurately fulfills the congressional intent behind the credit is of paramount importance. AEA defers to this hearing's R&D panel to more fully explain the high tech industry's concerns about the proposed R&D credit regulations. To quickly summarize, AEA along with others in the R&D industries have filed comments with Treasury expressing serious concern about the proposed regulations. Given the strong comments that have been received by Treasury to these regulations, AEA suggests that at a minimum Treasury should consider re-proposing these regulations.



U.S. TAX CODE DEPRECIATION RECOVERY PERIODS AND METHODS

This final slide clearly demonstrates the U.S. technology usage rates and growth over just the last few years. Interestingly, this growth rate pales in comparison with the growth rate of other countries across the globe. The U.S. percentage of usage growth −16 percent for computers, 72 percent for the Internet, and 54 percent for cellular phone usage -demonstrates there is nothing static about these industries. As the usage rate for high tech equipment increases, the industry will continue to grow and innovate. Correspondingly, AEA believes that the recovery periods and depreciation methods under Section 168 should more accurately reflect what is happening in this New Economy.

AEA noted with interest the Treasury study that highlighted the shortcomings of the current system and which concluded that the current depreciation system is dated. Under this current regime, only Congress has the authority to change asset class definitions or class lives, and the introduction of over 50 separate bills in the House and Senate during the 106th Congress to address this inequity demonstrates how much work is yet to be done. Rather than commenting on each of these bills, AEA wishes to state the obvious: that tax certainty and predictability is of paramount importance. Many subsections of the high tech industry are considered to be nascent technologies that do not even have identifiable class lives. That fact combined with class lives that do not reflect the useful life of high tech apparatus such as computers, software, semiconductor manufacturing equipment and printed circuit boards, is a bad tax combination.

AEA was very interested in Treasury's proposal to establish temporary asset classes for nascent technologies. As such, the temporary asset classes would help to provide certainty to taxpayers for an initial development period, without disturbing the class lives for existing technologies. AEA agrees with Treasury that this temporary class designation would provide a signal that this asset class will be studied before the expiration date of the temporary asset class. This signal would be important because often such nascent technologies are too busy trying to get their technology up and running rather than worrying about how the tax rules should recognize them. Similarly, it would avoid placing new assets in an existing asset class, where they may not belong, and would avoid placing new assets permanently in a "default" class with an arbitrary class life. AEA concludes its testimony by offering to work with Treasury and Congress to address these shortcomings in the tax code.

AEA appreciates the opportunity to present this overview to you today. I would be happy to answer any questions you may have. Thank you.

Chairman HOUGHTON. Thank you very much.

What I think we'll do is just go right through the panel and then take questions afterwards.

All right;—is that okay with everybody?

Okay; Ms. Coleman?

STATEMENT OF DOROTHY B. COLEMAN, VICE PRESIDENT, TAX POLICY, NATIONAL ASSOCIATION OF MANUFACTURERS

Ms. COLEMAN.Chairman Houghton and members of the Subcommittee, thank you for the opportunity to appear before you today to discuss the tax code and the new economy. My name is Dorothy Coleman, and I'm pleased to be here today on behalf of the National Association of Manufacturers. The NAM, 18 million people who make things in America, is the Nation's largest and oldest multi-industry trade association. The NAM represents 14,000 member companies, including 10,000 small and mid-sized manufacturers.

NAM members have long held the belief that the current tax system is a major obstacle to realizing the full potential of our economy. We need a new tax system that is simpler and encourages rather than penalizes work, investment and entrepreneurial activity, and that is competitive with that of our foreign trading partners. Specific changes endorsed by the NAM including savings incentives, a single tax system for businesses, elimination of the double taxation of corporate earnings, fair and equitable transition rules, and more rapid recovery of capital equipment costs.

All businesses, whether considered old or new economy, will benefit from a pro-growth tax system designed for a 21st Century economy. In fact, the distinction between the old and new economies is largely artificial. The term old economy brings to mind belching smokestacks, blue-collar workers, dirty factories, bricks and mortar, all aimed at making tangible things. In contrast, new economy represents high-tech gadgetry, skilled workers, whistle-clean factories, computers and microprocessors.

In reality, though, this clear-cut distinction is not an accurate picture of either the economy or the modern manufacturing world. The integration of traditional manufacturing with the technological innovation of the past decade has transformed our entire economy. This convergence has been going on for more than a decade and has already created what we at the NAM call new manufacturing.

A hallmark of our current robust economy is the remarkable advances in technology that are changing everything about the way our economy functions. Technology is the single biggest contributor to economic growth. The fact that manufacturing is also the single biggest beneficiary of technology underscores our insistence that the currently fashionable distinction between the old economy and the new economy is a distinction without a difference.

Technology has led to a boom in productivity. The rate of manufacturing productivity growth was nearly 5 percent from 1996 through 1999, double that of the overall business sector, as it has been since 1992. This strong, steady increase in productivity has

enabled the economy to achieve strong growth without significant inflation. Over the past 3 years, the U.S. economy has averaged noninflationary growth of about 4 percent. We would like to see this economic growth continue; a tax policy that stops discriminating against capital investment is essential to continued economic growth.

The pro-growth tax policy we need must encourage businesses to increase capital formation in the United States. One of the most effective ways to spur business investment, which, in turn, will lead to continued technological advances and productivity growth, is through an enhanced capital cost recovery system. In particular, the NAM supports moving towards an accelerated depreciation system that shortens depreciation lives to one year.

Under this accelerated system, companies could expense capital equipment in the tax year it was purchased. An integral part of a system is eliminating the current corporate alternative minimum tax. By its very nature, the AMT punishes both individuals and businesses. We commend the Ways and Means Committee for taking the lead in 1997 to soften the anti-investment impact of the AMT and provide needed relief to many companies. Nonetheless, unless the AMT is totally eliminated, larger deductions for capital investments will push companies into an AMT situation forcing them to use longer depreciation periods.

Expensing represents a significant departure from our current depreciation system. It is imperative that the transition from the current system to expensing provides fair and equitable treatment for taxpayers who made business decisions based on current law. A basic premise of economic theory is that investment is a positive function of an increase in demand and a negative function of cost. The cost of capital to a firm includes three components: the price of capital goods; the cost of funds to the firm; and the tax treatment of investment. Expensing lowers the cost of capital and thus leads to increased investment.

We agree with the Treasury report that the current depreciation system is dated and that changing the current system would be a costly and time-consuming undertaking. Determining class lives alone would consume valuable Treasury time and resources. In contrast, expensing of capital investments would be a simple and direct solution.

The goal of a capital recovery system should be to make capital more available; help American businesses keep pace with technological change; improve the competitiveness of American goods in world markets; simplify tax compliance and minimize the erosive effect of inflation on invested capital. A system that provides for immediate expensing achieves these goals. Moreover, workers also benefit from an enhanced capital cost system. Increased investment raises labor productivity, which leads to higher wages.

The enhanced capital cost recovery system described here today doesn't differentiate between old economy and new economy businesses. It benefits all businesses that invest in capital goods. On behalf of the NAM, thank you for inviting me here to discuss this important issue.

[The prepared statement follows:]

Statement of Dorothy B. Coleman, Vice President, Tax Policy, National Association of Manufacturers

Chairman Houghton and members of the subcommittee, thank you for the opportunity to appear before you today to discuss the tax code and the new economy.

My name is Dorothy Coleman, and I am pleased to be here today to testify on behalf of the National Association of Manufacturers. The NAM -'18 million people who make things in America' -is the nation's largest and oldest multi-industry trade association. The NAM represents 14,000 member companies (including 10,000 small and mid-sized manufacturers) and 350 member associations serving manufacturers and employees in every industrial sector and all 50 States. We're headquartered in Washington, D.C., and we have 10 additional offices across the country.

NAM members have long held the belief that the current tax system is a major obstacle to realizing the full potential of our economy. We need a new tax system that is simpler and encourages, rather than penalizes, work, investment and entrepreneurial activity, and that is competitive with the systems of our foreign trading partners. Specific and systemic changes endorsed by the NAM include savings incentives; a single tax system for businesses, with no additional components like the alternative minimum tax and no net tax increase on businesses; elimination of the double taxation of corporate earnings; fair and equitable transition rules and more rapid recovery of capital equipment costs.

Clearly, all businesses, whether considered "old" or "new" economy, will benefit from a pro-growth tax system designed for a 21st century economy. In fact, the distinction between the "old" and "new" economies is largely artificial. The term "old economy" brings to mind belching smokestacks, blue-collar workers, dirty factories, bricks and mortar -all aimed at making tangible things. In contrast, "new economy" represents high-tech gadgetry, skilled workers, whistle-clean factories, computers and microprocessors. Its pace is quick, its productivity is high and its rate of change is as fast as the Internet.

In reality, though, this clear-cut distinction is not an accurate picture of either the economy or the modern manufacturing world. The integration of traditional manufacturing with the technological innovations of the past decade has transformed our entire economy. This convergence has been going on for more than a decade and has already created what we at the NAM call "new manufacturing."

New manufacturing is not just a part of the new economy; it's one of the reasons we have it in the first place. We would not have today's new economy, with its seemingly durable high growth and low inflation, if it weren't for new manufacturing products (technology), processes (just-in-time inventories, for example), people (the best workers in the world) and productivity (made possible by all of the above).

A hallmark of our current robust economy is the remarkable advances in technology that are changing everything about the way our economy functions. Technology is the single biggest contributor to economic growth, and manufacturing is the single biggest contributor to technology. Based on data from the U.S. Departments of Commerce and Labor and from the National Science Foundation, manufacturing accounts for nearly 60 percent of annual advances in technology. The fact that manufacturing is also the single biggest beneficiary of technology underscores our insistence that the currently fashionable distinction between the old economy and the new economy is a distinction without a difference.

Technology, in turn, has led to a boom in productivity. The rate of manufacturing productivity growth was nearly 5 percent from 1996 through 1999, double that of the overall business sector, as it has been since at least 1992. This strong, steady increase in productivity has enabled the economy to achieve strong growth without significant inflation.

Over the past three years, the U.S. economy has averaged non-inflationary growth of about 4 percent. We would like to see this economic growth continue. Needless to say, growth like that in the next decade cannot be taken for granted. A pro-growth tax policy that stops discriminating against capital investment is essential to continued economic growth.

In my remarks today, I'd like to focus on the tax treatment of physical capital, like plants and equipment. NAM Board member Collie Hutter, chief operating officer of Click Bond Inc. in Carson City, Nev., will discuss the tax treatment of research and development in her testimony before the subcommittee on September 28.

The pro-growth tax policy we need must encourage businesses to increase capital formation in the United States. One of the most effective ways to spur business investment, which in turn will lead to continued technological advances and productivity growth, is through an enhanced capital-cost recovery system. In particular, the NAM supports moving toward an accelerated depreciation system that shortens depreciation lives to one year.

Under this accelerated depreciation system, companies could expense capital equipment in the tax year it was purchased. An integral part of an accelerated depreciation system is eliminating the current corporate alternative minimum tax (AMT) system. By its very nature, the AMT punishes both individuals and businesses. We commend the House Ways and Means Committee for taking the lead in 1997 to soften the anti-investment impact of the AMT. Conforming AMT depreciation periods with regular corporate tax depreciation periods provided needed relief to many companies. Nonetheless, unless the AMT is totally eliminated, the larger deductions for capital investments under an accelerated depreciation system would push companies into an AMT situation, forcing them to use longer depreciation periods.

Fair and workable transition rules also are critical to the success of an accelerated depreciation system. Expensing represents a significant departure from our current depreciation system. It is imperative that the transition from the current system to a new one provides fair and equitable treatment for taxpayers who made business decisions based on current law. In particular, since manufacturing is a capital-intensive industry, many of our members have sizable amounts of remaining tax basis that might be lost altogether if expensing is applied to all capital. While our members support current expensing, it is important to include transition rules that allow companies to utilize accrued, but unused, tax attributes.

The positive economic impact of accelerated depreciation is straightforward. A basic premise of economic theory is that investment is a positive function of an increase in demand and a negative function of costs. The cost of capital to a firm includes three components: the price of capital goods, the cost of funds to the firm and the tax treatment of investment. Expensing lowers the cost of capital and thus leads to increased investment. In this respect, the marginal cost of capital depends on the depreciation rate applied to new investments. The depreciation rate applied to old capital does not change the cost of capital at the margin. However, write-off of old capital reduces the average corporate tax rate, leading to higher after-tax profits, larger dividend payouts and higher stock values.

We agree with the Treasury Department's conclusion in its "Report to Congress on Depreciation Recovery Periods and Methods," that the current system is dated and that changing the current system would be a costly and time-consuming undertaking. Determining class lives alone would consume valuable Treasury time and resources. In contrast, expensing of capital investments would be a simple, direct and expeditious solution.

The goal of a capital recovery system should be to make capital more available, help American businesses keep pace with technological change, improve the competitiveness of American goods in world markets, simplify tax compliance and minimize the erosive effect of inflation on invested capital. A system that provides for immediate expensing achieves these goals. Moreover, workers also benefit from an enhanced capital-cost recovery system. Increased investment raises labor productivity, which leads to higher wages.

Higher non-inflationary growth demands higher productivity, which, in turn, leads to higher compensation. That's a pretty good formula for success. Federal tax issues that foster this formula are critical to the continued leadership of the United States in the international marketplace. The enhanced capital-cost recovery system described here today doesn't differentiate between old economy and new economy businesses. It benefits all businesses that invest in capital goods.

On behalf of the NAM, thank you for inviting me here today to discuss this important issue.

Chairman HOUGHTON. Thanks very much, Ms. Coleman.

Ms. Feldman?

STATEMENT OF MOLLY FELDMAN, VICE-PRESIDENT OF TAX, VERIZON WIRELESS, ON BEHALF OF CELLULAR TELECOMMUNICATIONS INDUSTRY ASSOCIATION

Ms. FELDMAN. Chairman Houghton and members of the Oversight Committee, thank you for the opportunity to testify and for holding these hearings on the tax code and the new economy. My name is Molly Feldman, and I am Vice-President of Tax at Verizon Wireless. Verizon Wireless and the Cellular Telecommunications

Industry Association, which represents nearly 400 companies in all areas of the wireless industry, seek greater clarity in the depreciation rules governing our industry.

We support the premise in the press release announcing the subcommittee's hearing that the Internal Revenue Code's depreciation system is very outdated and fails to adequately address the cost recovery needs of the Nation's new, high-technology based economy. The wireless telecommunications industry, like many other high-technology industries, depends on computer-based technology to facilitate the digitization of voice, video and data over its new digital networks.

The first steps in the development of the current wireless system started with the creation of a computer-controlled network of cells which contained low-powered, computer-based switching equipment. It was the introduction of the computer to the system of cell sites that enabled the cellular system to provide call handoffs as a mobile user passed through its designated geographic area. Computers are used to provide all required functions and are predominant in all parts of the system.

Wireless companies are continuously replacing equipment due to obsolescence. For example, much of the upgraded digital wireless equipment that only recently replaced analog equipment beginning in the mid–1990s is itself expected to be replaced in a few short years due to the emergence of the next generation of equipment. The increasing speed with which this is occurring, just as in the computer industry, has rendered many billions of dollars worth of equipment obsolete.

The Treasury Department's recently released report to the Congress on depreciation recovery periods and methods recognizes that innovation in the information age has created many new industries that are not clearly addressed by current depreciation rules. The report points out that the wireless telecommunications industry was in its infancy when the current asset classes were defined and that its digital technology does not fit appropriately into the existing definitions for wired telephony related classes.

The wireless telecommunications industry is one of the fastest growing industries in the United States with more than 100 million Americans that currently subscribe to wireless service. Job growth in the wireless industry supplied just over 4,300 American jobs in 1986. By 1999, over 155,000 jobs were created, and the industry was responsible for creating another million jobs in supporting and related industries.

Rapid technological innovation has resulted in an evolving industry that originally provided voice communications to one that increasingly works as a network providing computer functionality. New, third-generation products, sometimes referred to as 3G, will provide much-improved services to remote users, including enhanced voice and high-speed data links to office computers; the ability to send and receive faxes; high-speed Internet connectivity; video transmission and videoconferencing.

Wireless companies plan to expand wireless networks into new markets and rural areas with the goal of uninterrupted service throughout North America. Continued investment in network upgrades and expansion will continue to improve local economies and

will permit the increased availability of mobile data services, providing Internet access to many urban, rural and suburban communities.

Not only has the increase in wireless subscribership driven job growth, but it has also increased capital spending. In 1985, total capital spending on wireless telecommunications equipment amounted to $526 million. By 1999, annual capital expenditures had exceeded $15 billion. Unfortunately, without clear depreciation rules which reflect the true useful life of wireless telecommunications equipment, continued investment might be limited or deferred.

As you know, the cost of most tangible depreciable property placed in service after 1986 is recovered using the modified accelerated cost recovery system. Under this system, assets are grouped into classes of personal property and real property, and each class is assigned a recovery period and depreciation method. The commercial wireless telecommunications industry was in its infancy in 1986 and 1987 when the depreciation system was last revised. As a result, the rules which are currently being applied by the IRS and by the wireless industry were originally developed without specifically considering the characteristics of wireless telecommunications equipment.

Both wireless telecommunications companies and the IRS have expended significant resources over the past few years auditing and settling disputes involving the depreciation of wireless telecommunications equipment. Because of the rapid technological changes, we believe that the maximum recovery period that should be applied is 5 years. Clearly, the appropriate class life of cellular telecommunications assets does not approach 10 years, let alone the 16 to 20 years often argued by the IRS. As a result of these continuing disputes and the lack of clear guidance, we believe Congress must clarify the depreciable life of these assets.

The inappropriate assignment of assets to depreciation classes with longer recovery periods has a huge impact on the cost of investment borne by wireless companies. The misclassification of wireless telecommunications assets imposes an unfair level of taxation on wireless companies compared to other companies utilizing assets that have properly defined class lives. The burden of these unfair taxes is ultimately borne by the subscribers of wireless telecommunications service, whose cost of service is higher than it would otherwise be as well as potential users of wireless systems who may be precluded from becoming subscribers due to decreased investment and slower build-out.

Rather than shoe-horn wireless telecommunications equipment into wire-line telephony classes, as some would do, the better solution would be to include wireless telecommunications equipment within the definition of qualified technological equipment. The code currently defines such equipment to include any computer or peripheral equipment and any high-technology telephone station equipment installed on a customer's premises. Wireless equipment is properly characterized as 5-year, qualified technological equipment because of the fact that the predominant components of wireless networks are, in fact, computers.

A depreciable life of anything greater than 5 years will penalize this fast-growing industry and limit the capital available for the continued expansion of an advanced wireless digital network. Such a network would allow wireless telecommunications companies to continue to pursue business objectives which translate into continued job growth, productivity gains and overall economic expansion.

To ensure depreciation certainty in the future, Congress should recognize these changes are occurring in the information age and be prepared to shorten depreciable lives for assets that are the foundation of the new economy.

We understand that Congressman Phil Crane will be introducing legislation in the next several days that provides for this important clarification. We encourage the members of this committee to join Congressman Crane in addressing this problem.

In summary, depreciation guidance for the wireless telecommunications industry is needed to provide clarity and avoid controversy leading to unnecessary costs to both the Government and industry. The current depreciation system should be revised to clarify that all wireless telecommunications equipment is included in the qualified technological equipment category.

I'll be pleased to try to answer any questions you may have regarding my testimony.

[The prepared statement follows:]

Statement of Molly Feldman, Vice President of Tax, Verizon Wireless on behalf of Cellular Telecommunications Industry Association

Chairman Houghton and Members of the Oversight Subcommittee, thank you for holding these hearings on the tax code and the new economy. My name is Molly Feldman and I am Vice President of Tax at Verizon Wireless. I am appearing before you today on behalf of a coalition of national and regional wireless telecommunications companies which have banded together to seek greater clarity in the depreciation rules governing our industry. In addition, the Cellular Telephone Industry Association endorses our recommendation that depreciable lives for wireless telecommunications equipment should be clarified to encourage continued investment in the new economy. We support the premise in the press release announcing the Subcommittee's hearing that the Internal Revenue Code's depreciation system is outdated and fails to adequately address the cost recovery needs of the nation's new high technology-based economy.

The wireless telecommunications industry provides a textbook example of the shortcomings of the current tax depreciation system for emerging high technology industries. Like so many other high technology industries, the wireless telecommunications industry depends on computer-based technology to facilitate the digitization of voice, video and data over the industry's new digital networks.

The first steps in the development of the current wireless system started with the creation of a computer-controlled network of "cells," which contained low-powered computer-based switching equipment. It was the introduction of a computer to the system of cell sites that enabled the wireless system to provide call hand-offs as a mobile user passed through its designated geographic area, allowing the wireless system to reuse its limited frequency for another wireless user. Computers are used to provide all the required functions and are present in all parts of the system. Without the use of computers, it is not practical or economical to implement a wireless system.

The wireless PCS license auctions in 1993 and 1994 created heightened competition and led to an accelerated change-out of technology, particularly the conversion from analog to digital equipment. Wireless companies are continuously replacing equipment due to functional or technical obsolescence. For example, much of the upgraded digital wireless equipment that only recently replaced analog equipment beginning in the mid–1990s is itself expected to be replaced within the next three to four years due to the emergence of the next generation of equipment. The increasing speed with which this phenomenon is occurring has rendered many billions of dol-

lars worth of equipment obsolete, as well as shortened both service and economic lives.

The Treasury Department's recently released "Report to the Congress on Depreciation Recovery Periods and Methods" makes the point that the rapid pace of innovation in the information age has created many new industries like the wireless industry that are not clearly addressed by current depreciation rules. The report points out that the wireless industry did not exist when the current assets classes were defined and that its digital technology does not fit well into the existing definitions for wired telephony-related classes.[1]

The Importance and Growth of the Wireless Telecommunications Industry

The wireless telephone industry has been one of the fastest growing industries in the United States since the mid–1980s. The growth in the industry, in terms of subscribership and capital investment, has taken place at a much faster rate than predicted in even the most optimistic forecasts. According to the most recent Cellular Telephone Industry Association (CTIA) Semiannual Wireless Survey, 86 million Americans subscribed to wireless service in 1999, and analysts project 175 million subscribers by 2007.

The growth in wireless subscribers has had a dramatic effect on the U.S. economy in terms of job creation. The wireless industry directly supplied 4,334 American jobs in 1986. By 1999, the wireless industry directly supplied over 155,000 jobs and was responsible for creating another million jobs in industries that support wireless telecommunications. The wireless industry is part of the high technology community that is the engine of our economic prosperity, creating new jobs and new opportunities for all Americans.

The rapid pace of technological innovation that has characterized the wireless industry in the past will continue and even increase in the future. The wireless industry is evolving from an industry that provided primarily voice communications services to one that increasingly works as a network providing computer functionality, such as Internet access. New third-generation ("3G") products will provide similar, much improved, services to remote users. Anticipated uses for new technologies include enhanced voice and high-speed data links to office computers, the ability to send and receive faxes, high-speed Internet connectivity, video transmission and video conferencing.

Wireless companies plan to expand wireless networks into new markets and rural areas with the goal of uninterrupted service throughout North America. The current expansion in networks has distributed the job growth from metropolitan areas to some of the most rural parts of the country. Continued investment in network upgrades and expansion will continue to have a positive effect on local economies throughout the country. Mobile data services available over the new wireless digital networks will permit increased expansion of Internet access into urban, rural and suburban communities,

Not only has the increase in wireless subscribership driven job growth, but it has also produced a commensurate increase in capital spending to deploy new technology and expand wireless networks. In 1985, total capital spending on wireless assets amounted to $526 million. Annual capital expenditures on wireless assets exceeded $15 billion in 1999. Capital spending at the current levels make clear depreciation rules a priority, but such clarity is exactly what is lacking under our current depreciation system.

History of the Wireless Telecommunications Industry

Cellular telecommunications technology was first created in AT&T's laboratories in the 1940s. The technological precursor of cellular telecommunications was called Mobile Telephone Service ("MTS") and consisted of one large broadcasting tower and a high-powered transmitter which had a range of approximately 50 miles. In addition to this range restriction, the system was further limited by the size of the transmitter, bandwidth constraints and a small user capacity. Another key limitation was that the MTS could only be used within the specific geographic location of the tower. The MTS could not hand off calls to other towers as the user moved outside the "home" area. These limitations doomed this technology from ever becoming commercially feasible.

The first modern cellular system -which the industry now refers to as "wireless"—was called Advanced Mobile Phone Service ("AMPS"). This system was designed to address the technological limitations posed by MTS. The single base station in the MTS system was replaced with a computer-controlled network of "cells," which con-

[1] Department of the Treasury, "Report to Congress on Depreciation Recovery Periods and Methods," July 2000.

tained low-powered computer-based switching equipment. It was the introduction of a computer to the system of cell sites that enabled the wireless system to provide call hand-offs as a mobile user passed through its designated geographic area, allowing the system to reuse its limited frequency for another wireless user. It should be clear that computers are used to provide all the required functions, and that these computers are present in all parts of the system. Without the use of computers, it is not practical or economical to implement a wireless system.

As a result of Federal Communications Commission (FCC) action in 1981 that created a duopoly in 48 Metropolitan Statistical Areas (MSAs), the first commercially viable AMPS system was launched in October 1983 in Chicago. Since then, the wireless industry has grown into a major industry that has played a significant role in the economic growth in the 1990s. The FCC auction of 30 MHz Personal Communications Systems (PCS) licenses during 1993 and 1994, as well as the passage of the Telecommunications Act of 1996, has significantly increased investment and competition within the telecommunications industry. The growth in the wireless industry is due to the technological advances that have allowed wireless companies to meet consumer demand and still offer affordable wireless service to a growing consumer base.

Technological Advances and the Speed of Change

Consumer demand for wireless service has increased at a phenomenal rate. Although the wireless industry has benefitted greatly from the strong demand for its products, the industry has also been forced to aggressively pursue technological solutions to address bandwidth limitations in order to keep up with increased competition from new entrants into the wireless market using the latest digital technologies.

The PCS license auctions in 1993 and 1994 created heightened competition in the wireless industry. This led to an accelerated change-out of technology, particularly the conversion from analog to digital equipment. The increasing speed with which this phenomenon is occurring has rendered many billions of dollars worth of equipment obsolete, as well as shortened both service and economic lives.

Telecommunications technology is progressing at a rate that has previously only been seen in the personal computer (PC) industry. Gordon Moore, co-founder and Chairman Emeritus of Intel Corporation, stated in a speech in 1965, that the pace of technology change is such that the amount of data storage that a microchip can hold doubles every year or at least every 18 months. Moore's observation, now known as Moore's Law, described a trend that has continued and is still remarkably accurate. It is the basis for many planners' performance forecasts.

Moore's law is easily applied to changes that have occurred with wireless telecommunications equipment. The cost of equipment has remained fairly constant while equipment capabilities have continued to increase exponentially. The striking similarity between the PC industry and the wireless equipment industry is due in large part to the fact that the major components of a cell site are in fact computers or peripheral equipment controlled by computers.

Wireless companies are continuously replacing equipment due to functional or technical obsolescence. For example, much of the upgraded digital wireless equipment that only recently replaced analog equipment beginning in the mid–1990s is itself expected to be replaced within the next three to four years due to the emergence of the next generation of equipment.

The Future of Wireless Technology

The rapid pace of technological innovation that has characterized the wireless industry in the past will continue and even increase in the future. The wireless industry will evolve from an industry that provides primarily voice communications services to one that increasingly works as a network providing computer functionality, such as Internet access. New third-generation products will provide similar, much improved, services to remote users. Anticipated uses for new technologies include enhanced voice and high-speed data links to office computers, the ability to send and receive faxes, high-speed Internet connectivity, video transmission and video conferencing.

In addition, governmental actions may necessitate wireless carriers to purchase new equipment to meet government mandates. Currently, the wireless telephone is in the process of complying with FCC requirements to implement enhanced 911 service. Enhanced 911 ("E911") service provides emergency service personnel with the telephone number and location of a caller reporting the need for emergency services. This information is used to more rapidly dispatch help and to enable the emergency personnel to call the user back at the same number should the call become disconnected.

Both the technological changes taking place in the wireless industry and new government regulations will require wireless companies to make substantial capital investments implementing new technology. These rapidly-approaching events serve to highlight the critical importance of depreciation rules that accurately reflect the future state of the industry.

The Components of Wireless Telecommunications Systems

The three primary components of a wireless telecommunications system—cell sites, mobile switching centers and handsets—work together as an integrated network to provide wireless telecommunications services. Each cell site consists of computer-based assets, which operate as a coordinated unit that is directly connected to a mobile switching center via a microwave transmitter or other dedicated transmission facility. A cell site's computer-based assets are driven by advanced software programs that encode and decode analog and digital data through complex algorithms; that monitor and adjust the power transmission levels of wireless handsets allowing customers to receive and deliver calls within a particular cell radius (ensuring quality reception); and that enable call hand-off as subscribers pass from one cell to the next.

Compared to traditional landline telephone systems, the functions of wireless telecommunications systems are highly decentralized—being allocated among the mobile switching centers and cell sites which comprise these systems. Without the complex, software-driven functionality of the equipment at both the cell sites and the mobile switching centers, the successful coordination of these decentralized functions would be impossible, as would be wireless telecommunications itself.

Description of a Cell Site

The equipment at a cell site includes computers as well as equipment that is under the control of computers located at the cell site itself or at the MSC. A typical cell site is made up of the following computer base station equipment, which is integrated to form a single functioning component of the overall wireless network:

- A cell site controller (CSC), which is a specialized computer that connects calls and maintains call quality. The CSC controls the computer-based functions of the cell site. Specifically, the software in the CSC allows the CSC to communicate with both the cell phone and the MSC, and to relay and construct the messages that are required to connect and disconnect calls. Further, the CSC is responsible for monitoring hand-offs and for relaying signal strength measurements to the MSC. In addition, the CSC operates together with the transmitters, receivers and transceivers that modulate the voice signal into a radio frequency, and vice versa. For example, when a cell phone makes or receives a call, the CSC will instruct one of the transceivers to begin transmitting and will send a digital transmission to the cell phone with instructions as to the frequency on which the transceiver is communicating. Because the CSC is a functional extension of the MSC, any upgrade or change to the MSC will require an upgrade of the CSC.
- Transmitters, receivers, transceivers, antennas and modems that enable the cell site controller to communicate with both the MSC and the wireless telephone. The transmitting and receiving equipment is controlled and operated by software programs that execute on cell site computers, and these transform signaling and speech information between the formats used in the land-line communications facilities and those used in over the air transmissions between the cell site and the mobile units.
- Power equipment. A variety of power equipment exists to provide the electrical power necessary to keep the cell site switching equipment operational under all circumstances. For example, this equipment is necessary to convert the external power supply for AC to "controllable" DC; to operate the cell site equipment; to monitor and filter the power level; and, as a secondary function, to ensure that there is a back-up power supply in the case of a complete commercial power failure. This power equipment is peripheral equipment that is essential to the operation of all the cell site computer-based switching equipment.
- An enclosure to protect the electronic equipment and climate control equipment that enables the equipment to operate within a controlled temperature and humidity range

In order for a cell site to operate, each component listed above must be present and in working order.

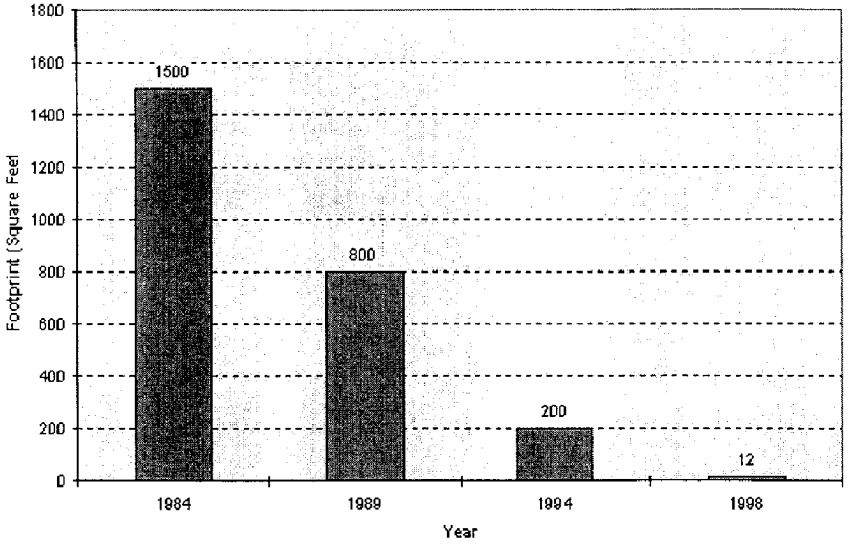
Changes over Time: Smaller, More Integrated, Similar to Personal Computers

The cell site has experienced the same technological advancements in terms of size and integration as most other technology-based industries. Cell sites are analogous to early mainframe computers, which often occupied large amounts of space, sometimes entire rooms within office buildings. Each successive mainframe required

less space, and eventually the personal computer (PC) was developed. Today's laptop and palmtop PCs weigh as little as a few pounds, but have exponentially greater computing capacity than the first room-sized mainframes.

Early cell sites, while always an integral component of wireless communications, included an antenna, an enclosure and computer based switching equipment that required leasing a separate sizable piece of real estate to assemble the finished product. As wireless equipment continues to evolve, the size of cell site equipment is integrated into a smaller package. Industry experts predict that future cell sites will fit into a small box and will be placed on utility poles and existing interstate traffic signs. While functionality and capacity have increased, Figure 1 shows how the size of the enclosures has decreased.

Figure 1: Rapid Miniaturization of Enclosures



Cell Site Equipment

Although the next generation of cell site equipment has been dubbed 3G (for "third-generation"), there have already been several waves of wireless technology. Table 1 describes the major introductions of new cell site equipment that have occurred since 1983. The first generation of equipment used with AMPS was introduced for commercial use in 1983. This analog system was designed to carry one voice channel per 30 kHz bandwidth. The first digital alternative to AMPS was introduced in 1989. This system, called TDMA ("Time Division Multiple Access"), allowed more than one user to share the same voice channel, effectively tripling the number of calls per bandwidth area.

A different and still more efficient digital encoding system called CDMA ("Code Division Multiple Access") was introduced in 1994. CDMA doubled the carrying capacity of TDMA, allowing six users to share the same voice channel that formerly would have been assigned to one analog user. A third digital standard, GSM, has also been developed. CDMA, TDMA, and GSM technologies are used for the new all digital cell sites operating in the PCS bandwidth, which was assigned by auction in 1993 and 1994. Continual technological advancements such as CDMA, TDMA, and GSM allow more efficient utilization of spectrum and reduce the size of cell site enclosures.

Table 1: Major Technological Changes 1984–1998

Type of Equipment	Users per 30 kHz Bandwidth	Cell Site Enclosure Dimensions (feet)	Year of Commercial Use
Analog	1	30÷×50÷	1984
Digital	3	20÷×40÷	1990
Digital	6	10÷×20÷	1996
Digital [1]	9	3÷×4÷	1998

Source: Ernst & Young

Overview of Federal Depreciation Rules and Current Treatment of Wireless Telecommunications Equipment

The cost of most tangible depreciable property placed in service after 1986 is recovered using the modified accelerated cost recovery system (MACRS) enacted as part of the Tax Reform Act of 1986. Under MACRS, assets are grouped into classes of personal property and real property, and each class is assigned a recovery period and depreciation method. The applicable class-life and method used to compute the annual depreciation allowance varies depending upon the particular asset being depreciated. An IRS table lists various Asset Classes, along with their respective class lives and recovery periods.

The commercial wireless industry was in its infancy in 1986 and 1987 when the depreciation system was last revised. As a result, the rules which are currently being applied by the IRS and by the wireless industry were originally developed without specifically considering the characteristics of wireless telecommunications equipment.

The IRS and the wireless industry have taken different paths regarding wireless telecommunications equipment [2] depreciation issues since 1986. The IRS approach has been to break down cell site equipment into their individual sub-components and depreciate each based on the functional nature of the individual sub-component. Wireless companies have taken the position that the functional nature of the integrated components should dictate how the assets should be depreciated, and that the parts of the cell site cannot operate independently and therefore should be considered an integrated asset. The differences have resulted in ad hoc, inconsistent, and costly case-by-case determinations as the issue has arisen on audit.

The IRS recently provided limited guidance on the application of Rev. Proc. 87–56 to wireless assets in Technical Advice Memorandum 98–25–003 (Jan. 30, 1998) ("TAM"). The TAM asserted that the classes of assets used to provide wireless telecommunications service are comparable to wireline telecommunications assets and thus should be assigned to wireline asset classes. The IRS based this conclusion on the fact that wireless assets performed switching, transmission, reception and coordination functions similar to the wireline assets. The TAM did conclude that mobile switching centers should be classified in asset class 48.121 (computer-based telephone central office switching equipment), but it failed to take a definitive position with respect to the classification of cell site equipment.

Because the conclusions in the TAM with respect to the classification of cell site equipment were not definitive, the TAM provides little practical guidance for IRS auditors or taxpayers as to the proper classification of cell site equipment. Because cell site equipment is the backbone that makes wireless telecommunications possible, the failure to have clear agreement between the IRS and the industry on the rules for depreciating this equipment poses substantial difficulties for the industry.

Significant Increase in the Cost of Capital

As previously noted, the IRS's approach during audits has been to break cell site equipment down into its sub-components and propose depreciating each sub-component on its alleged functional nature, often using a 10-year recovery period (which equates to a 16 to 20 year class life). The assignment of assets that are properly five-year property to improper depreciation classes with longer recovery periods has a large impact on the cost of investment borne by wireless companies. Table 2 shows

[2] See http://www.lucent.com/wirelessnet/products/networks/cdmahowworks.html for a description of the latest CDMA call densities.

the effect on the hurdle rate of return[3] and the effective tax rate of improper assignment of five-year property to classes with longer recovery periods.[4] The pre-tax hurdle rate of return when the assets are properly assigned is 19.1 percent, while the effective tax rate on the assets is close to the statutory rate of 35 percent.[5]

Table 2: Hurdle Rates of Return and Effective Tax Rates for Cell Site Equipment

Assigned Recovery Period	Hurdle Rate of Return	Effective Tax Rate
5 years	19.2%	35.0%
7 years	22.5%	44.4%
10 years	26.9%	53.2%
15 years	36.2%	64.4%

Source: Ernst & Young

When the five-year property is not properly assigned, the hurdle rates of return increase. If the assets are classified as 15-year property, the hurdle rate of return almost doubles, rising to 36.2 percent, while effective tax rate rises to over 64 percent. The result of misclassifications is to impose unfairly high taxes on wireless companies, compared to other companies utilizing assets that have properly defined class lives. The burden of these unfair taxes is borne by the users of wireless service, who pay a hidden tax, and potential users of wireless systems who do not receive service due to decreased investment and slower build-out.

One of the guiding principles of MACRS is that the depreciation tax life of an asset should be shorter than the actual book life of the asset (i.e., "accelerated"). The median five-year recovery period used by companies filing their tax returns is more consistent with the principles underlying MACRS as to the rapid obsolescence of wireless equipment. Given the rapid technological change and advances in the wireless industry, the median five-year recovery period used by many companies on their tax returns is the maximum recovery period that should be applied given the rapid obsolescence of wireless equipment. Clearly, the appropriate class life of wireless telecommunication assets does not even approach 10 years, let alone the 16 years to 20 years used by the IRS.

In addition to imposing higher capital costs, the lack of clarity in the depreciation rules for cell site equipment places wireless companies at a significant risk of incurring penalties and interest as a result of depreciation audit adjustments. This is particularly troublesome given the industry's merger and acquisition activity. Acquiring companies are finding that some acquired companies may have significant exposure on audit as a result of depreciation elections made in past years.

Solution -Include Wireless Equipment in Qualified Technological Equipment

Rather than trying to shoehorn wireless telecommunications equipment into wireline telephony "transmission" or "distribution" classes, a better solution would be to include wireless telecommunications equipment within the definition of "qualified technological equipment," which the Code currently defines (in section 168(i)(2)) as any computer or peripheral equipment, any high technology telephone station equipment installed on a customer's premises, and any high technology medical equipment. The wireless telecommunications industry believes that its equipment is properly characterized as "qualified technological equipment" because of the fact that the major components of wireless networks are in fact computers or peripheral equipment controlled by computers.

Qualified technological equipment has a five-year depreciable life under the current depreciation system. Given the rapid technological changes that are expected to continue in the wireless industry, a depreciable life of anything greater than five years will penalize this fast growing industry and limit the capital available for the

[3] The hurdle rate of return is defined to be the pre-tax internal rate of return a project must exceed before it would be profitable for a company to undertake it.

[4] The hurdle rate of return is defined to be the pre-tax internal rate of return a project must exceed before it would be profitable for a company to undertake it.

[5] The calculations assume an inflation rate of 3.3 percent, 100 percent equity financing and a pre-individual income tax discount rate of 12.2 percent. Economic depreciation is assumed to follow 150 percent declining balance. The corporation is assumed to be a non-AMT taxpayer with a 35 percent marginal income tax rate. Depreciation allowances are computed using the 200 percent declining balance schedule for 5 and 7-year assessments and the 150 percent declining balance schedule for 10 and 15-year assessments.

build out of an advanced wireless network that will benefit consumers, businesses and the U.S. economy.

Representative Phil Crane (R–IL) will be introducing legislation this week to make this important clarification. We are grateful to Representative Crane for recognizing the need to address this problem and provide certainty to the wireless telecommunications industry and its customers.

Summary

- Depreciation guidance for the wireless industry is needed to provide certainty and avoid further controversy leading to unnecessary costs to both the government and industry.
- The current depreciation system should be revised to clarify that all wireless telecommunications equipment is included in the "qualified technological equipment" category. Additionally, Congress should carefully consider the need for reducing the five-year recovery period to provide proper recognition of the economic life and resultant class-life for wireless equipment.

To ensure depreciation certainty in the future, Congress should recognize the rapid technological change occurring in the information age and be prepared to shorten depreciable lives for assets that increasingly have shorter economic useful lives. Corrective action would assist the IRS in performing simplified, accurate audits and would greatly reduce the high compliance costs and excessive capital costs currently borne by wireless companies. Clarification of the depreciation rules will allow wireless companies to continue to pursue business objectives which translate into continued job growth, productivity gains, and overall economic expansion.

Chairman HOUGHTON. Thanks very much, Ms. Feldman.

Mr. Jernigan?

STATEMENT OF CLIFFORD JERNIGAN, DIRECTOR, WORLDWIDE GOVERNMENT AFFAIRS, ADVANCED MICRO DEVICES, ON BEHALF OF SEMICONDUCTOR INDUSTRY ASSOCIATION, SUNNYVALE, CALIFORNIA

Mr. JERNIGAN. Thank you, Mr. Chairman and members of the committee. My name is Cliff Jernigan, and I am director of worldwide government affairs at AMD. I am testifying today on behalf of the Semiconductor Industry Association, which represents a $77 billion American semiconductor industry.

It's been 7 years since I last testified before this committee on depreciation reform. In the meantime, many U.S. companies in our industry have set up plants overseas at the expense of American sites, and I think that's unfortunate. This afternoon, I would like to do three things: first, I would like to describe our industry and the market in which we compete. Secondly, I will explain why the current tax depreciation rules for semiconductor manufacturing equipment are outdated and discourage investment; and third, I will urge the committee to support H.R. 1092, the Semiconductor Equipment Investment Act of 2000, sponsored by Representatives Johnson and Matsui, which reduces the tax depreciation period for the equipment we use to make chips from 5 to 3 years.

Let me begin by describing our industry. The semiconductor industry is now America's largest manufacturing industry in terms of economic value added, contributing 20 percent more to the U.S. economy than the next leading industry. We employ about 280,000 people in high-paying jobs. Parenthetically, our employment level was about 280,000 people in 1985. Our employment has remained constant in the United States, but it has increased overseas, and that's a result of more of our plants being located overseas.

Driving the growth of the semiconductor industry is the ever-shrinking transistor, the basic building block of a semiconductor chip. A decade ago, we were able to integrate thousands of transistors on a single silicon chip. Today, we can integrate millions of transistors on a single chip, and tomorrow, we expect to be able to integrate billions of transistors on a single chip.

To remain competitive in this rapidly changing environment, U.S. chipmakers invest 30 cents out of every dollar of sales into R&D and capital equipment. Unfortunately, the current tax code fails to recognize the rapid pace of change in our industry in that it requires an unreasonably long period, 5 years, to recover the cost of our equipment, and I submit that's one reason many of our companies are being forced to move overseas.

The useful life of semiconductor manufacturing equipment is 3 years, not 5; probably even less than 3 today. There are several economic studies cited in my written testimony that demonstrate this point. Rather than review these studies now, let me just note what anyone who has shopped for a home computer already knows—thank you, Congressman Weller—and that is that every few months, new models are available that are faster and have more memory for the same price.

This is because the chips in these computers continue to grow more complex; that is, they perform more functions at faster and faster speeds. It takes new and more complex equipment to manufacture each generation of chips, and so, we have to continually replace our equipment.

The outdated depreciation laws penalize the U.S. semiconductor industry. Furthermore, they also discourage investment in the U.S. at a time when other nations are doing all they can to attract semiconductor industry investment in plants that cost today between $2 billion to $3 billion each. Japan, Korea, Taiwan, and many countries in Europe all provide more favorable depreciation rates, and in some cases, cash grants or tax holidays to encourage investment.

You may have read yesterday's Wall Street Journal article about countries trying to entice high-tech companies by offering significant incentives. I would like to include this article as part of my written testimony, and I know that you have a copy now in your possessions.

SIA estimates that an American community seeking to attract a multibillion dollar chip plant faces a significant handicap due to the U.S. depreciation laws even before the chipmaker considers other factors such as workforce and infrastructure costs. In recognition of these issues, Representatives Nancy Johnson and Bob Matsui have introduced H.R. 1092 to shorten the depreciation period for semiconductor manufacturing equipment to 3 years. There are currently 47 other cosponsors of this bill, including 10 members of the Ways and Means Committee and four members of this Subcommittee.

I would like to take this opportunity to thank Chairman Houghton and Representatives Dunn, Neal and McNulty for cosponsoring this legislation. I would also like to note that this issue enjoys bipartisan support and has been endorsed by both the Republican Main Street Partnership and the Progressive Policy Institute.

Interestingly, shorter depreciation was part of President Clinton's platform in 1992, and it was part of Bob Dole's platform in 1996, but we can't seem to get it done. It is important for us to move quickly to pass this bill. The semiconductor industry is undergoing a once-in-a-decade change in wafer size, moving from manufacturing chips on an eight-inch diameter wafer to 12-inch wafers. This shift increases the area of the wafer, allowing manufacturers to produce more chips per wafer and thereby greatly reducing costs.

But first, this shift will require an investment in plant and manufacturing equipment probably in the range of $3 billion to $4 billion. I appreciate the desire of many in Congress to undertake comprehensive depreciation reform. However, this could be months if not years. It took 2 years to do the Treasury study, and we still aren't there yet with solutions. However, technological change in the new economy moves at lightning speed, and while a comprehensive reform effort is underway, 12-inch wafer plants that might have been built in the U.S. will instead be built overseas.

Therefore, I urge Congress to pass H.R. 1092, not next year but this year.

In closing, let me leave you with this thought: as you consider changes to the tax code to reflect the new economy, remember that the Internet is, in fact, a World Wide Web of silicon chips. I urge you to shorten the depreciation life for equipment used to make these chips and that will make the Internet possible. Thank you for your attention to this issue, and I look forward to answering any questions you may have.

[The prepared statement follows:]

Statement of Clifford Jernigan, Director, Worldwide Government Affairs, Advanced Micro Devices, on behalf of Semiconductor Industry Association, Sunnyvale, California

Thank you Chairman HOUGHTON.

My name is Clifford Jernigan and I am the Director of Worldwide Government Affairs for AMD. I am testifying today on behalf of the Semiconductor Industry Association (SIA), which represents the $77 billion American semiconductor industry. The SIA is pleased to have this opportunity to testify before the Oversight Subcommittee of the Committee on Ways and Means on the need to reform our tax cost recovery rules for the New Economy.

This afternoon I would like to

1. describe our industry and the market in which we compete;
2. explain why the current tax depreciation rules for semiconductor manufacturing equipment are outdated and discourage investment; and
3. urge the committee's support for the Semiconductor Equipment Investment Act of 2000, which reduces the tax depreciation period for semiconductor manufacturing equipment from five years to three years.

Semiconductors Drive Today's Information Age

The semiconductor industry is now America's largest manufacturing industry in terms of economic value-added -we contribute 20 percent more to the U.S. economy than the next leading industry. The industry employs 284,000 people in the United States, and these are high paying jobs with wages significantly above average at every level.

Propelling the growth of the semiconductor industry is the ever-shrinking transistor—the basic building block of a semiconductor chip. A decade ago, we integrated thousands of transistors on a single silicon chip. Today we integrate millions of transistors on a single silicon chip. The implications of this technological progress cannot be overstated. The Internet is, in fact, a world wide web of silicon chips.

Semiconductor technology advances improve productivity throughout our economy, leading to the low unemployment and low inflation we enjoy today. Federal Reserve Chairman Alan Greenspan, discussing the structural changes behind the current economic expansion, stated ". . .the development of the transistor after World War II appears in retrospect to have initiated a special wave of creative synergies. It brought us the microprocessor, the computer, satellites, and the joining of laser and fiber optic technologies. . . It is the proliferation of information technology throughout the economy that makes the current period appear so different from preceding decades." (Remarks before the 92nd Annual Meeting of the National Governor's Association, July 11, 2000).

The pace of innovation in the semiconductor industry is among the fastest of any U.S. or worldwide industry. To remain competitive in this rapidly changing environment, U.S. chipmakers invested $11 billion in R&D and $17 billion in capital equipment in 1999. The next generation of fabrication facilities, those capable of processing 300mm wafers, will cost between $2–3 billion each. Chip manufacturing equipment will account for about 85 percent of the cost of these new facilities.

Competition in this environment is fierce. The U.S. lost its worldwide market share lead to Japan in 1986, but fought hard to come back. And comeback we did, increasing from 37 percent global market share a decade ago to 50 percent market share today.

Since the pace of technological change is extremely rapid in our industry, SIA member companies spend a greater percentage of sales on R&D and capital equipment than any other industry. In fact, over a third of the industry's revenues last year were plowed back into R&D and capital equipment investments. Despite this, U.S. semiconductor manufacturers labor under an inequitable situation. Although the economic life of semiconductor manufacturing equipment is three years, the industry is penalized under current tax law, which requires a five year cost recovery. That is why we are here today.

The Current Depreciation Life is Too Long

There are three commonly cited methods for estimating the useful life of assets like semiconductor manufacturing equipment. These three methods are the income approach (which recognizes a decline in an asset's value based on the asset's diminishing ability to generate income), the cost approach (which bases the value of each used asset on the cost of replacing it with a new asset, but with consideration given for the reduced remaining service life of the used asset), and the market approach (which bases relative value on the proceeds of recent relevant sales of manufacturing equipment as a percentage of the original cost of each asset). Each of these three approaches recognizes that the equipment can continue to be used after technological obsolescence, but only for the manufacture of older, lower cost, lower value-added products. The SIA-sponsored American Appraisal Associates study conducted in 1991 used the market approach, and concluded that the economic life of semiconductor manufacturing equipment was about 3.75 years. A 1995 study by Lane Westly used the income approach and found that semiconductor manufacturing equipment had a useful life of only 3.27 years. The Lane Westly study also found that a cost approach provided results consistent with the income approach. Both studies clearly support the conclusion that semiconductor manufacturing equipment should be depreciated over three years rather than five.

There is further evidence suggesting that the pace of technological obsolescence has quickened since the American Appraisal and Lane Westly studies. Since 1988, the SIA has been issuing technology roadmaps to identify and forge a consensus as to the key challenges to increasing chip productivity, and to focus research on overcoming those challenges. The roadmap is developed by semiconductor experts from the U.S., Japan, Europe, Korea, and Taiwan, and identifies key challenges to staying on our historical productivity trend. The 1998 roadmap found that the industry has actually "skipped" a year compared to the roadmap that had originally been projected. For example, the 1997 roadmap projected that the 1 Gigabit memory chip would be introduced in 1999 rather than in 2001 as projected in the prior roadmap. The 1998 roadmap projects the 4 Gigabit will be introduced in 2002, a year earlier than projected in the 1997 roadmap. (See http://notes.sematech.org/ntrs/PublNTRS.nsf for more details on the roadmap).

Technological change not only makes semiconductor manufacturing equipment obsolete, but it makes the statutory depreciation class lives obsolete as well.

U.S. Depreciation Laws Penalize U.S. Companies and Discourage Investment in the U.S.

Other nations are working to encourage investments in semiconductor production. Japanese law allows for recovery of up to 88 percent of the cost of chip equipment

in the first year alone; Korea depreciates the equipment over four years with special benefits that permit additional accelerated methods or write-downs. Taiwan allows three year straight line depreciation, but more importantly, also grants tax holidays that make the depreciation rate a moot point. Singapore also grants tax holidays for new semiconductor factories. Some European countries, such as Germany and Italy, have actually financed a significant part of semiconductor plants through cash grants and below market interest rates. By contrast, current U.S. tax law actually discourages investment in U.S. semiconductor plants.

Current U.S. tax law not only puts our semiconductor makers at a severe disadvantage with respect to their foreign competitors, it also makes the U.S. a less attractive investment location for the new, multibillion dollar manufacturing facilities the industry will be constructing in the next few years. SIA estimates that a State in this country seeking to attract a $2.5 billion chip plant faces a $45 million handicap owing to U.S. cost recovery rules even before the chip maker considers other factors such as workforce and infrastructure. (The $45 million represents a Net Present Value of the imputed interest earned on the difference in the cash flow resulting from a five year depreciation schedule rather than three year.) The National Advisory Committee on Semiconductors, established by Congress in 1988 and composed of Presidential appointees, found in 1992 that "Allowing depreciation of equipment over 3 years -a period closer to the realistic life for many types of equipment than the current 5 year allowable life -would increase the annual rate of semiconductor capital investment (in the U.S.) by 11 percent."

U.S. semiconductor makers seek to have the tax code reflect the true useful lives of our assets. The disincentive to invest in the U.S. should be removed.

There is an Urgent Need to Fix the Depreciation Problem

The semiconductor industry is undergoing a once in a decade change in wafer size, moving from manufacturing chips on 200 mm (8") diameter wafers to 300 mm (12") wafers. This shift increases the area of the wafer by 2.25 times -from the size of a salad platter to the size of a medium pizza -allowing manufacturers to produce more chips per wafer, thereby greatly reducing costs.

The move to 300mm wafers is but one of the current technology shifts in the semiconductor industry. Jay Deahna, Semiconductor Capital Equipment Analyst at Morgan Stanley Dean Witter, has written that:

"*While semiconductor companies bought tools [in 1998] to maximize the output of their existing fabs this year, next year new clean rooms will be populated with entirely new sets of tools, which is positive for equipment company growth. Average order size should get larger, lead times may stretch, and pricing may increase. . .*

"*In the next 5–10 years, we expect more chip manufacturing changes than the previous forty years. This will be driven by new materials (copper, low k oxides, 300 mm), equipment (scanner, electroplating, 300 mm, full-fab automation, PSM masks), and manufacturing techniques (sub-wavelength lithography, Damascene). "* [emphasis added. From Jay Deahna, "Semiconductor Equipment Forecast" in November 1999 newsletter, "What's Up From SEMI"]

Recognizing the rapid technological obsolescence in the semiconductor industry, Representatives Nancy Johnson (R–CT) and Bob Matsui (D–CA) have introduced The Semiconductor Equipment Investment Act (H.R. 1092) to shorten the depreciation period for such equipment to three years. There are currently 47 other cosponsors on this bill, including ten members of the Ways and Means Committee and four members of this subcommittees, including you, Mr. Chairman. Thank you.

I appreciate the desire of many in Congress to establish a process for comprehensive depreciation reform, including further studies on specific industries. However, technological change in the New Economy occurs at lightning speed. The SIA is concerned that while such a process is underway, 300mm wafer plants that might have been built in the U.S. will instead be built overseas. Therefore, we urge the Congress to pass H.R. 1092, the Semiconductor Equipment Investment Act of 2000.

Conclusion

U.S. depreciation schedules should reflect the true economic life of semiconductor manufacturing equipment. By not reflecting technological obsolescence, U.S. tax law puts this dynamic industry at a disadvantage vis-à-vis its foreign competitors and helps drive investment offshore.

SIA respectfully requests that the Congress:

1. recognize that the economic life of semiconductor manufacturing equipment is three years, not five; note the urgency for semiconductor depreciation reform created by technological shifts such as the move to 300mm wafers; and pass the Semiconductor Equipment Investment Act of 2000 this year.

Thank you for your attention to this issue.

Chairman HOUGHTON. Thank you very much, Mr. Jernigan. Mr. Vogel?

STATEMENT OF THEODORE VOGEL, VICE PRESIDENT, TAX COUNSEL, DTE ENERGY COMPANY, ON BEHALF OF EDISON ELECTRIC INSTITUTE, DETROIT, MICHIGAN

Mr. VOGEL. Good afternoon, Mr. Chairman, Mr. Coyne, members of the subcommittee. My name is Ted Vogel, and I'm vice-president and tax counsel for DTE Energy Company, the parent company of Detroit Edison, which is an electric utility serving Southeastern Michigan.

I'm currently the chair of the Edison Electric Institute taxation committee, and I'm testifying here on its behalf. I've previously filed a written statement with the committee. I'd like to just highlight some items that are in that statement. Let me initially note that we are an industry that has most of its assets classified as 20-year property for Federal tax purpose—long depreciation lives—and traditionally viewed as long-lived assets.

There are several major developments that have been going on in the last few years in our industry that I think you should be aware of that I think is changing that perception of our industry and our assets.

First of all, as you are aware, we had a crisis in electric energy supply this summer. I'll touch on that point. Secondly, the electric utility industry is being restructured in a way that has eliminated the traditional vertical monopoly and replaced it with a competitive marketplace. And thirdly, we're seeing an increased pace of technological change in the industry that brings about quicker economic obsolescence of assets.

In addition, there are some disparities in the existing tax treatment of our assets that we'd like to call to your attention. In short, we think the answer is to shorten these long—very long—depreciable lives. In particular, we're supporting H.R. 4959, which would shorten depreciable lives of electric generating equipment from the 15 and 20 year lives that they have today to 7 years.

As to the first point, as you're aware, in the California market this summer, there were severe electricity supply crises: San Diego, San Francisco, Silicon Valley, all suffered brownouts, power spikes and other energy shortages. This was directly as a result of insufficient generating capacity in California and an inability to import enough power into the State. In particular, Silicon Valley firms suffered some losses. The Hewlett Packard energy manager indicated that if they lost one day's worth of power, it would amount to $75 million of lost revenue.

California is not alone. We're seeing alarming projections for much of the country as well in terms of the future growth of power. In fact, a J.P. Morgan study just released this month now projects 5 percent or more in annual growth rates. Where is this growth coming from? It's coming from information technology, computers,

Internet; the growth of our society in information and in telecommunications, all of it powered by electricity.

We believe that Congress should act now and should in fact shorten depreciation lives, and remove the disincentive to build power plants. Currently, the long depreciation lives for power plants creates a capital disincentive, and it makes it harder to attract the needed capital for growth.

The second major development in our industry is the electrical industry restructuring that's taking place all over the country. Most States now have moved toward deregulating their markets. Traditionally, the electrical utility industry was vertically integrated. You had regional monopolies that were regulated by the local or State public service commissions. In fact, the commissions' incentive was to stretch out depreciation lives as long as possible to keep rates low. As a result, utilities had no incentives to retire assets early and upgrade their systems for technological improvements until they had recovered their costs.

With an open, competitive marketplace, that's no longer the case. Recovery is no longer based on cost; it's going to be based on technological innovation.

And that brings me to the third point: technological innovation is happening in our industry. A generation ago, most power plant were coal-fired, nuclear-fired, large power plants that, quite frankly, the technology moved fairly slowly on. If you built a plant, you knew it could pretty much operate for 40 years with very little change.

In the last decade alone, we've seen an enormous shift as new generation has moved to gas-fired turbine combined-cycle operations. These turbines were only 40 to 50 percent efficient a mere decade ago. Today, they're approaching 70 percent efficiency. That is driving increased economic obsolescence for power plants much quicker than we have seen in the past.

Other areas of technological developments are coming fast down the pike: distributed generation, fuel cells, microturbines; a lot of developments that I think we're going to continue to see in the future that will continue to bring about quicker obsolescence than this industry has experienced in the past.

Finally, there are some inequities in the current depreciation system. For example, most of other industries have much faster depreciation lives than ours. Paper mills, steel mills, lumber mills, foundries, those types of facilities, manufacturing plants, have seven-year lives, even though their assets are very similar to power plants in terms of the overall useful life of those assets. Chemical plants can be depreciated in a mere five years.

And again, a lot of that historic disparity came out of the rate-regulated environment and the monopoly environment that once existed in our industry. It is now changing.

Other anomalies: a turbine generator owned by a manufacturer producing power in exactly the same way as one owned by a utility will receive a shorter depreciation life under the tax code. A process control computer on, for example, a cigarette plant will receive a 7-year life, whereas a process control computer operating a generating plant is given a 20-year life. So, these kinds of disparities are there in the code. Some of them are addressed in the Treasury re-

port, and we appreciate that, and we think those need to be rectified.

In conclusion, we appreciate the Treasury report. There is some good discussion on page 97 about the challenges facing the industry, about the changes that are occurring in the industry and the need to address depreciation rates in the industry, and we heartily endorse that conclusion. We would like to thank committee members Thomas, Jefferson and English for their leadership in sponsoring H.R. 4959.

Thank you for the opportunity to participate.

[The prepared statement follows:]

Statement of Theodore Vogel, Vice President, Tax Counsel, DTE Energy Company, on behalf of Edison Electric Institute, Detroit, Michigan

My name is Ted Vogel and I am the Vice President and Tax Counsel for DTE Energy Company, the parent holding company of Detroit Edison Company. Detroit Edison is an integrated electric utility serving greater southeastern Michigan with nonregulated subsidiaries active throughout the United States. DTE has 2.1 million customers, generates and sells over 50 million MWH of electric energy per year, has approximately 9,000 employees and annual revenues in excess of $4.7 billion. I am responsible for tax planning and tax compliance for DTE Energy. I am testifying today on behalf of the Edison Electric Institute (EEI), specifically the energy supply division of EEI, the Alliance of Energy Suppliers. Ron Clements, Director of Governmental Relations at EEI, is accompanying me today.

EEI, through its Alliance of Energy Suppliers, serves the needs and advances the commercial interests of power producers and power marketers throughout the United States by advancing public policy positions that enhance the competitiveness and effectiveness of the regulated and unregulated producers, distributors and sellers of electric energy.

THE CRISIS IN ENERGY SUPPLY

The recent headlines that describe the energy supply crisis in the San Diego region of southern California are a vivid example of the need to construct additional generation and transmission capacity in many areas of the United States. Responding to market demand, almost 52,000 megawatts of merchant generation—that is, unregulated generating plants selling energy for resale, not to end-use customers—are scheduled to come on-line by the end of 2001. This increase in generating capacity comes far too late, however, to provide relief from the situation caused by current shortfalls in generating and transmission capacity.

The San Francisco Bay area also experienced several blackouts this summer as a result of insufficient generating capacity in, or availability for import into, the State of California. Not only was in-state generation in too short of supply, but, even worse, the California Independent System Operator, the quasi-public operator of the transmission grid in California, could not import enough power from neighboring States to fuel California's high demand for electricity. Rolling blackouts were instituted in the San Francisco Bay area on June 14 this summer. Many employees at Silicon Valley technology companies like Hewlett Packard worked in near darkness with limited air conditioning. Hewlett Packard's energy manager told Dow Jones News Service that a blackout in Silicon Valley would cost companies there as much as $75 million dollars a day in lost revenues.[1]

The investment firm, J.P. Morgan, reported earlier this month that U.S. demand for electricity is likely to grow at more than 5 percent a year, driven largely by the spread of information technology and telecommunications infrastructure. Information technology and telecommunications presently account for 16 percent of U.S. energy consumption, according to the report.

CONGRESSIONAL ACTION IS NEEDED NOW

Energy shortages have been severe across California, as the State's expanding economy has out-stripped the construction of new power plants. To quote President

[1] Dow Jones News Wire, September 20, 2000.

Clinton,[2] "The wholesale price of electricity has risen sharply in California this summer as a result of tight supplies and growing demand.

This is having a particularly heavy impact where the price hikes are being passed on to consumers, as they are in the San Diego region." The President released $2.6 million in emergency funds for low-income families to cope with higher energy costs. He also directed the Small Business Administration to set up a program for small businesses to apply for loans to pay their electricity bills. Acknowledging California's "power-crunch," he renewed his calls to Congress to take up his Energy Budget initiatives and tax incentives.

The explosive growth in electronic equipment, computers, telecommunications, and bandwidth content has produced a dramatic increase in the demand for electricity. All elements of this new energy intensive information-based economy have two things in common. All the equipment and content utilized in this trend incorporate silicon-based microprocessors and electricity. Everything is plugged in to an electrical outlet. Personal computers and servers are nothing more than electron conversion devices that accept kilowatts though a power source and convert, create, store, and transmit those kilowatts into digital bits of information. This new information economy is powered exclusively by electricity. The Internet is becoming more electricity intensive. Wireless Internet and telecommunications applications are growing at an even faster rate than basic Internet growth.

Congress must act now. The most efficient manner for Congress to act is to legislate incentives to encourage the construction of new or more efficient electric generation facilities. The demand for power in this country is staggering and, with 16 percent of all electric energy being used to support e-commerce and computers generally, annual growth is outstripping new capacity by an alarming rate. The inability to provide sufficient generating capacity will have dire impacts for virtually all sectors of the country's economy.

IMPACT OF ELECTRICY INDUSTRY RESTRUCTURING

Until the mid–1990's, the investor-owned electric industry was composed entirely of single State or regional companies that were closely regulated by the various State public utility commissions. Companies were vertically integrated: they generated power, transmitted the power across their regions and then distributed the power to each customer. The companies operated as highly regulated monopolies and had an obligation to serve all customers.

In this regulated market, utilities were given an opportunity by regulators to recover their investment much differently than companies that operate in a more competitive marketplace. A regulated company had little incentive to retire its assets before the end of their useful life in order to deploy new technology. To have done so may have resulted in increased costs to customers that would have been unpalatable to State commissions and, therefore, not recoverable in rates paid for regulated services. This regulated status explains, in part, why electric assets have historically had such long recovery periods. This no longer is the state of the industry today.

Nationwide, the structure of the electric industry is rapidly changing from vertically-integrated, regulated monopolies to unbundled and fully competitive generation services. Currently, 24 States and the District of Columbia, encompassing some 70 percent of the Nation's population, have either passed electric industry restructuring legislation or enacted regulatory orders to implement unbundling and competitive customer choice. In these States, this choice in electric generating service supplier is either currently available, awaiting a phase-in implementation or part of a "big-bang" implementation in which all customers have the choice of electric energy supplier all at once. Because of the introduction of competition, previously applicable rules regarding the cost recovery of capital simply do not apply any longer.

There also is no regulatory certainty in a deregulated electricity market. This is one of the clear contributing factors at play in the San Diego situation described above. Uncertainty has stifled the interest of competitive generators to build new plants. In a regulated environment, predictable dividend payments to utility investors permitted them the opportunity to earn a return commensurate with the return they would earn in industries with similar risk profiles. In a newly competitive electricity environment, however, investors will demand a return of, and a higher return on, their investments over a much shorter period of time to reflect the vastly increased risks of an unregulated environment. Shorter capital recovery periods are a key element in attracting these investors.

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[2] Power Marketing Association, Online Daily Power Report, August 23, 2000

The electric industry is one of the most capital-intensive industries in this country, requiring nearly four dollars in investment for each dollar of annual revenue. Cost recovery, including the Federal income tax rules providing for depreciation and amortization of assets, is of vital importance. The present 15–20 year depreciation requirement for generating assets discourages badly needed investment in the construction of new electric generation facilities and in the repowering of currently mothballed facilities.

NEW TECHNOLOGY REQUIRES IMPROVED AND ADDITIONAL CAPITAL INVESTMENT

Energy producers must build and maintain state-of-the-art equipment to accommodate our nation's new technology. Competitive pressures that arise through the unbundling of retail electric service requires that all competitors be as efficient as possible. Because the competitiveness of wholesale markets is now an established feature of the industry's business landscape, sales for resale must also be generated as cost-effectively as possible. The advances in technology require that all new construction be more efficient in terms of the engineering measurements than equipment manufactured just a few years ago. These measurements include capacity factor, heat rate and availability factor. New combined cycle gas turbine generators are much more efficient today, resulting in more rapid obsolescence of older less efficient generating equipment.

Many of the power plants constructed a generation ago were coal-fired or nuclear. Power plants being built today are much more likely to be gas turbine facilities, often operated in a combined-cycle or as cogeneration facilities that produce steam for industrial process use as well as electricity. Gas-fired turbine technology has made stunning advances over the last decade. These new combined-cycle generators operate at energy conversion efficiency levels of 70 percent compared to 40–50 percent only a decade ago. Energy conversion efficiency measures the efficiency with which one type of fuel is converted to electric energy, which, in turn, is capable of providing the light, heat or work that consumers expect. As these advances continue, electric generation equipment suffers much quicker economic obsolescence than in prior decades when the current depreciation rates were set.

In addition to new generation facilities, existing electric generation facilities require massive amounts of investment in order to retrofit these facilities and bring them into compliance with environmental regulations. The Clean Air Act Amendments, new source review, the National Ambient Air Quality Standards, and the related State implementation plans all require significant new capital investment in environmental mitigation technologies in order to improve air quality and maintain compliance with Federal and State directives. Again, this advanced technology supports the need for shorter capital recovery periods.

THE INEQUITIES OF CURRENT DEPRECIATION RULES

The recovery periods permitted under section 168 of the Internal Revenue Code for assets used to produce and distribute electricity are much longer than the recovery periods allowed to other capital intensive industries. As in every other instance of a heavily regulated industry undergoing deregulation, new technology is being developed and deployed at a much more rapid pace and makes obsolete many prior investments in property, plant and equipment. With most of our industry's assets placed in the 15-year and 20-year recovery period, the present cost recovery system unjustly penalizes investors in electric generation and makes raising necessary capital much more difficult.

The disparity between electric industry recovery periods and the recovery periods of other industries is highlighted upon review of asset class 00.4, Industrial Steam and Electric Generation and/or Distribution Systems. This asset class includes equipment identical to that used by the electric industry except that the energy generated is used in industrial manufacturing processes instead of being sold to others. This asset class is given a 15-year life. The same asset in the hands of an electric company has a 20-year life. No rationale reasonably supports this distinction.

By contrast to the 15–20 year depreciation lives for electric generation assets, depreciation lives for other capital intensive manufacturing processes—such as pulp and paper mills, steel mills, lumber mills, foundries, automobile plants and shipbuilding facilities—are depreciable for Federal income tax purposes over just 7 years. Chemical plants and facilities for the manufacture of electronic components and semiconductors can be depreciated over only 5 years. The power plants that generate electricity have useful lives that are similar to this production equipment that have recovery periods in the 7-year range.

Another area of concern are the restrictions contained in the description of class life 00.12, Information Systems, that further compounds the disadvantage suffered by investors in electricity generation, transmission and distribution facilities. The description excludes computers that are an integral part of other capital equipment, thus, giving computers used in a power plant control room a 15 or 20-year life and a 150 percent declining balance method. A computer used to run a highly sophisticated nuclear power plant cannot be expected to be less susceptible to obsolescence than one used in a cigarette factory, for example, which currently is recovered within 7 years. The economic life of a process control computer is not closely related to economic life of the manufacturing equipment it operates. It belies common sense to treat a process control computer any differently than a computer used to administer normal business transactions, yet these computers perform much more sophisticated "high technology" processes than normal business computer applications.

Mr. Chairman, to more fully explain the inequities inherent in current depreciation rates and methods, we have attached a copy of a letter we submitted to Treasury last November that we hope can be incorporated into this Subcommittee's formal record.

CONCLUSIONS AND RECOMMENDATIONS

We applaud this Subcommittee's efforts to take a long overdue look at the current Federal income taxation system with respect to capital recovery periods. We agree with the conclusions of a recent Treasury report and urge you to act on its findings. The Treasury Report (Report to the Congress on Depreciation Recovery Periods and Methods) states:

"Electric, gas, water, and telephone utilities were all generally regulated at the time the current class lives were established. Under rate of return regulation, utilities were not theoretically concerned with depreciation and tax expense, because rate structures were based on cost-plus pricing. A utility's rate of return on equity was largely independent of its tax or depreciation expenses. Consequently, for public utilities, it is unclear that existing class lives truly represent the actual useful lives of the property involved.

Class lives may be expected to be different in the current more competitive environment. Producers must maintain state-of-the-art equipment, which might mean shorter lives and more rapid depreciation. For example, new generations of combined cycle gas turbine generators are more efficient today than previously, leading to a more rapid retirement of such equipment than would have occurred under regulation." [At page 97].

Congressional action is needed to cure the power supply emergency facing our country. We encourage you to modernize the tax treatment of new electric generating capacity to reflect the technical, environmental and economic realities of the current structure of the electric industry. Doing so would greatly advance the public interest by insuring against the dire economic consequences that necessarily accompany electricity shortfalls. Failing to do so would benefit no one.

In recognition of the need to modernize the capital cost recovery system for electric generation assets, we wish to commend Ways and Means Committee members Thomas, Jefferson and English for their leadership in introducing H.R. 4959 to modify the depreciation of property used in the generation of electricity. We believe this is a significant first step in helping our nation avoid an electric supply crisis which would harm all segments of our economy.

We would be pleased to provide this Committee with more information about our industry's views on depreciation rates and methods for facilities used in the generation, transmission and distribution of electricity, and how the current system discourages investment in badly needed new generation capacity that is necessary to fuel economic growth in this country. We thank you for the opportunity to participate in this process.

BUSINESS OPERATIONS GROUP
November 1, 1999

Department of the Treasury
Office of Tax Analysis
Room 4217, Main Treasury Building
1500 Pennsylvania Avenue, NW
Washington, DC 20220

Re: Notice 99–34; 1999–35 IRB 1; Depreciation Study

Dear Sir or Madam:

The Edison Electric Institute ("EEI") is pleased to offer the following comments in response to Notice 99–34; 1999–35 IRB 1 which requested public comment and recommendations for possible improvements to the current depreciation system under section 168.

EEI is the association of U.S. investor-owned electric utilities, their affiliates and associated members worldwide. EEI is serving approximately 75 percent of the nation's electric customers and generate approximately three-quarters of all the electricity generated by all electric utilities in the country.

EEI is concerned that the recovery periods permitted under section 168 for assets used to produce and distribute electricity are much longer than the recovery periods allowed to other capital intensive industries. Indeed, this disparity has been present in nearly every depreciation or cost recovery regime since the 1970's. While there may have been a justification for this difference a number of years ago, today we believe that the industry has much more in common with other capital intensive industries. In the last five years, the electric industry has begun a transformation from a regional, vertically integrated, rate regulated business to a national (or international), industry consisting of three components: generation, transmission and distribution. Most generation plant investments will be non-regulated. As in every other instance of a heavily regulated industry undergoing deregulation, new technology is being developed and deployed at a much more rapid pace that competes with and makes obsolete many prior investments in property, plant and equipment. With most of our industry's assets placed in the 15-year and 20-year recovery period, the present cost recovery system unjustly penalizes our investors and makes capital formation much more difficult.

MACRS Cost Recovery Periods

Under section 168, the cost recovery period of assets is generally determined by reference to the midpoint class life for the asset guideline class in which such property is classified under Rev. Proc. 83–35, 1983–1 C.B. 745. Section 168 (e)(1) specifies (in relevant part) that property shall be treated as

10-year property if such property has a class life of 16 through 19 years,
15-year property if such property has a class life of 20 through 24 years, and
20-year property if such property has a class life of 25 or more years.

Section 168 (b)(1) sets the applicable depreciation method as the 200 percent declining balance method except that section 168 (b)(2) allows only the 150 percent declining balance method for any 15-year or 20-year property. The application of these rules results in the following depreciable lives for assets used in the electric industry as published in Rev. Proc. 87–56:

Hydraulic Production Plants, Steam Production Plants, and Transmission and Distribution Plant (asset classes 49.11, 49.13, and 49.14 respectively) have 20-year lives,

Nuclear Production Plants and Combustion Turbine Production Plants (asset classes 49.12 and 49.15) have 15-year lives,

Nuclear Fuel Assemblies (asset class 49.121) have 5-year lives.

Thus, the lion's share of the investment in the electric industry must be depreciated over 20 years using the 150 percent declining balance method.

One can scan Rev. Proc. 87–56 and note that very few asset classes have a 20 year life; aside from electric industry assets there are only twelve.[1] Indeed, out of

[9] They are:
class 01.3 Farm Buildings,
class 40.2 Railroad Structures classified as Public Improvements Construction,
classes 40.51, 40.53, and 40.54 Railroad Electric Generation Equipment,
class 48.11 Telephone Central Office Buildings,
class 48.33 TOCSC-Cable and Long-line Systems,
classes 49.21 and 49.221 Gas Utility Distribution and Manufactured Gas Production Facilities,

Continued

133 asset classes identified in the Revenue Procedure only fifteen have even a 15-year life. The only manufacturing assets included among the fifteen are assets used to manufacture cement. As a matter of fact, most manufacturing assets have a 7-year depreciable life and are permitted use of the 200 percent declining balance method. For example, the following manufacturing categories have assigned lives that are less than half as long as most electric industry assets:

7-year cost recovery

Pulp and paper mills, Steel mills, Manufacture of locomotives and railcars, Lumber mills

Foundries, Auto plants, Ship building

5-year cost recovery

Chemical plants, Manufacture of electronic components and semiconductors

The disparity between electric industry recovery periods and the recovery periods of other industries is highlighted upon review of asset class 00.4 Industrial Steam and Electric Generation and/or Distribution Systems. This asset class includes equipment identical to that used by the electric industry except that the energy generated is used in an industrial manufacturing process instead of being sold to others. This asset class is given a 15-year life. The same assets in the hands of an electric company would have a 20-year life.

Another area of concern for our industry are the restrictions contained in the description of class life 00.12 Information Systems that further compounds the disadvantage suffered by our investors. The description excludes computers that are an integral part of other capital equipment, thus, giving computers used in a power plant control room a 15 or 20-year life and a 150 percent declining balance method. A computer used to operate a highly sophisticated nuclear plant cannot be expected to be less susceptible to obsolescence than one used in a cigarette factory or a textile mill which currently is recovered within 7 years. The economic life of a process control computer is not closely related to economic life of the manufacturing equipment it operates. It belies common sense to treat a process control computer any differently than a computer used to administer normal business transactions, yet these computers perform much more sophisticated "high technology" processes than normal business computer applications.

The power plants that manufacture electricity have lives that are similar to the production equipment listed above that have recovery periods in the 7 year range. The advantageous recovery periods allowed by Congress were given to encourage modernization of the nation's industrial base and to improve productivity. As discussed below, the electric industry is entering a period of great change. It is now appropriate to reexamine the traditional electric utility recovery periods and bring them in line with other industries.

The Present and Future State of the Electric Industry

Until the 1990's the investor-owned electric industry was composed entirely of single State or regional companies that were closely regulated by the various State public utility commissions. Companies were vertically integrated in that they generated power, transmitted the power across their region and then distributed the power to each customer. The companies operated as monopolies and had an obligation to serve all customers.

In this sort of market utilities may have had a greater expectation of recovery of their investment than in a more competitive marketplace. Furthermore, a regulated company had little incentive to retire its assets before the end of their technological life in order to deploy new technology. To have done so might have resulted in increased costs to customers that would have been unpalatable to State commissions. This monopoly status may explain why electric assets have historically had such long recovery periods. Such is not the state of the industry today.

One by one States are unbundling the electric industry and introducing competition. Generally, three distinct businesses are formed: generation, transmission, and distribution. In order to keep incumbent utilities from enjoying an early market advantage, States are often structuring market rules such that the incumbent utilities sell off large numbers of their generation plants. For example, California utilities sold off half of their fossil fuel plants as part of that State's restructuring plan. With the proceeds of these sales, many utilities (or former utilities) are investing in nonregulated generation plants in other regions of the country. This newly competitive

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class 49.3 Water Utilities,
class 49.4 Central Steam Utility Production and Distribution, and
class 51 Municipal Sewers.

marketplace is encouraging the introduction of newer technology. Cleaner burning natural gas plants are being built to compete with coal fired plants. As many nuclear plants are shut down, replacement energy is being generated by new, non-regulated plants. In this marketplace, investors in electric generation have no guarantee of recovery. As in any other business they will have no control over other, cheaper sources of supply that will attract away their customers.

An example of the effect of technological innovation is the rapidly increasing deployment of combined cycle gas turbine generators. Combined cycle generators increase efficiency by producing electricity from otherwise lost waste heat. Today's state-of-the-art combined cycle generators operate at energy conversion efficiency levels of 70 percent compared to 40 percent to 50 percent a decade ago. Competitive pressure is forcing owners of units less than a decade old to make costly improvements to increase operating efficiency.

In addition to the competitive threats facing the generation segment of the electric industry, transmission and distribution are facing competitive threats from gas pipelines and the location of generation along gas pipelines. Not only is gas a competitive energy source, but gas pipelines with capacity to serve generating plants can substitute for portions of transmission lines. Locating new generation along gas pipelines is, in effect, a mechanism for transporting electrons by moving gas. Longer term, numerous threats are emerging to place transmission owner revenues at risk. These include the location of generation nearer to loads, changes in electricity consumption patterns, and new technology.

In fact, one rapidly emerging new technology is Distributed Generation. Distributed Generation refers to electric power produced using fuel cell technology or on-site small scale generating equipment that can displace power generated by a central station generating unit. Because they can be sited on a customer's premise, their widespread use would effect the economic life of transmission and distribution assets as well as generating plants.

In EEI's view, the fundamental changes taking place in the electric industry must be acknowledged and taken into account in the current cost recovery system. We note that recently many industry groups have publicly expressed a need for shorter recovery periods. In every case, these industries already have recovery periods of 5-years, 7-years or 10-years. Although we don't seek to diminish the arguments put forward by other industries, we do believe that our industry is bearing the biggest penalty under the present system. The disparity is so great that we believe that shortening electric industry lives must be acted upon before adjusting any other industry's lives. We believe the current system provides incentives that direct capital formation away from our industry. As a matter of fundamental fairness, the cost recovery system must take into account marketplace changes that radically effect the economic useful lives of assets.

We would be pleased to provide you with any other information that you might find helpful. Please feel free to contact Mr. Cary Flynn of Duke Energy at 704/382–5918. We would also welcome the opportunity to meet with you personally to further discuss our views.

Sincerely,

DAVID K. OWENS
Executive Vice President

Chairman HOUGHTON. Okay; thanks very much, Mr. Vogel.
Mr. von Unwerth?

STATEMENT OF FREDERICK H. VON UNWERTH, GENERAL COUNSEL, INTERNATIONAL FURNITURE RENTAL ASSOCIATION

Mr. VON UNWERTH. Mr. Chairman, members of the Subcommittee, I appear here today on behalf of the International Furniture Rental Association. I am the association's general counsel. I thank you for this opportunity to say a few words about a problem for the furniture rental industry that has surfaced recently with the Internal Revenue Service.

We are a small industry, and I believe the problem is straightforward, so I won't take much of your time. The industry I represent is the traditional furniture rental industry, not to be confused with the rent-to-own industry. The Congress specifically addressed the depreciation recovery period for rent-to-own property in the Taxpayer Relief Act of 1997, declaring it 3-year property through an amendment to Section 168(e) and 168(i).

The members of our industry are in the "rent-to-rent" business. It's a service business. We provide short-term furniture rentals for the convenience of customers temporarily in need of furniture. All of our members rent furniture for residential use to both consumers and businesses. Many of them also rent furniture for office use to individuals and businesses. Sometimes, it's the same furniture.

It is the rental of furniture for office use that brings us here today. Now, there has never been any question that the traditional business of renting furniture falls within Class 57, distributive trades and services, under the MACRS system. This classification qualifies the furniture held by the rental company taxpayer as 5-year property under MACRS. Until recently, there also has been no question that the taxpayer's rental of furniture to a customer for office use should be no different for depreciation purposes than his rental of furniture to a customer for residential use.

In fact, a general information letter from the Service confirmed that the rental business itself, as a distributive trade and service business, qualified all the rental inventory as 5-year property. Both logic and fairness dictate the same depreciation schedule for the rental company taxpayer whether the desk, chairs, sofa and end table are rented to the customer for home use or office use. Of course, there's also the possibility of a residential customer's rental of furniture for home office use, of which the rental company may not even be aware.

To treat these uses differently for depreciation of the furniture by the rental company would enormously and unfairly complicate the business of renting furniture. The problem furniture rental companies now face arises from an IRS interpretation of a Tax Court opinion in litigation involving the Norwest banking organization. The Cincinnati office and the Ohio Appeals Office have interpreted the Norwest opinion to mean that any general use asset category, such as office furniture, fixtures and equipment—that's class 00.11—always, regardless of the circumstances, takes precedence over any activity category, such as class 57, distributive trades and services.

The Norwest case had absolutely nothing to do with rental furniture. It involved a claim by a bank that certain furnishings were being used in the distributive trade of retail banking, even though the bank's use of the furnishings was typical administrative office use. This specious claim was given short shrift by the Tax Court. The court specifically noted that there was nothing unique about the bank's use of the furniture.

The court also made some observations about a revenue procedure dealing with priorities between asset categories and activity categories in general. It did not mention the specific use of office furniture by a furniture rental company as rental inventory.

Nevertheless, based on the court's general observations in Norwest, the IRS in Cincinnati has demanded a change in accounting method by a Cincinnati-based furniture rental company for the depreciation of its rental office furniture inventory. The Service is insisting on a 7-year recovery period based on an asset classification as Office Furniture, Fixtures and Equipment under Class 00.11.

The Cincinnati IRS position completely ignores the unique use of office furniture by the taxpayer as rental inventory, in which it is repeatedly moved in and out of warehouses, trucks, and customer premises between rentals. Because of the beating it takes in this unique use, rental office furniture generally has a rentable life of 3 to 4 years, even though the same furniture purchased or leased for long-term use by an ordinary business could last much longer. Thus, a 7-year recovery period for rental office furniture makes no sense. It is completely at odds with the goals of Code Section 167(a), which is to provide a ''reasonable allowance for the exhaustion, wear and tear...of property used in the [taxpayer's] trade or business.''

To lay to rest this troubling interpretation that now hangs over the office furniture rental industry, we ask the committee to clarify the appropriate recovery period through an amendment to Section 168(e)(3)(A) and 168(i), specifically defining as 5-year property all office furniture held by a furniture rental dealer for rental to businesses and individuals under short-term leases.

Thank you for your time and your consideration. If there are questions, I will be happy to try and answer them.

[The prepared statement follows:]

Statement of Frederick H. Von Unwerth, General Counsel, International Furniture Rental Association

Mr. Chairman and Members of the Subcommittee, I appear today on behalf of the International Furniture Rental Association. I am the Association's general counsel. I thank you for the opportunity to say a few words about a problem for the furniture rental industry that has surfaced recently with the Internal Revenue Service. We are a small industry, and I believe the problem is straightforward. So I won't take much of your time.

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Until recently, there also has been no question that the taxpayer's rental of furniture to a customer for office use should be the same for depreciation purposes as its rental of furniture to a customer for residential use. In fact, a general information letter from the Service confirmed that the rental business itself, as a distributive trade and service business, qualified all the rental inventory as 5-year property.

Both logic and fairness dictate the same depreciation schedule for the rental company taxpayer whether the desk, chairs, sofa and end table are rented to the customer for home use or for office use. Of course, there is also the possibility of a resi-

dential customer's rental of some furniture for home office use, which may be unknown to the rental company. To treat these uses differently for depreciation of the furniture by the rental company would enormously and unfairly complicate the business of renting furniture.

The problem furniture rental companies now face arises from an IRS interpretation of a Tax Court opinion in litigation involving the Norwest banking organization. The Cincinnati office and the Ohio Appeals Office have interpreted the Norwest opinion to mean that any "general use" asset category, such as Office Furniture Fixtures and Equipment (Class 00.11), always, regardless of the circumstances, takes priority over any "activity" category, such as Class 57, Distributive Trades and Services.

The Norwest case had absolutely nothing to do with rental furniture. It involved a claim by the bank that certain furnishings were being used in the distributive trade of retail banking, even though the bank's use of the furnishings was typical office use. This specious claim was given short shrift by the Tax Court. The Court specifically noted that there was nothing "unique" about the bank's use of the furniture. The Court also made some observations about a Revenue Procedure dealing with priorities between "asset" categories and "activity" categories in general. It did not mention the specific use of office furniture by a furniture rental company as rental inventory.

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To lay to rest this troubling interpretation that now hangs over the office furniture rental industry, we ask the Committee to clarify the appropriate recovery period through an amendment to section 168(e)(3)(A) and 168(i), specifically defining as 5-year property all office furniture held by a furniture rental dealer for rental to businesses and individuals under short term leases.

Thank you for your time, and your consideration. If there are questions, I will be happy to try to answer them.

Chairman HOUGHTON. Thank you very much, Mr. von Unwerth.

Now we will go to questions of the panel. Mr. Coyne?

Mr. COYNE. Thank you, Mr. Chairman.

My question is to Mr. Jernigan. You indicated that over the last several years your company has been forced to move much of your operation overseas. What is it either in the tax code or other regulations that we have here in the country that—why is it that you find it necessary to do so much business overseas instead of here in the United States?

Mr. JERNIGAN. Let me first say that we are still building in the United States, but we recently completed about a $2 billion facility in Dresden, Germany. Capital recovery is a major aspect of why we chose to go overseas. The United States is just not a very good place to invest today.

And, secondly, we couldn't find employees. You are aware of the H–1B issue. Germany had an abundance of engineers. We have a very difficult time finding engineers in this country.

Mr. COYNE. Well, relative to the H–1B situation, has your company or your associations been involved in any attempt to do more training of U.S. prospective employees for the industry?

Mr. JERNIGAN. Absolutely. We have training programs, vocational training programs in our company. We support the Semiconductor Research Corporation, which puts money into universities to help train individuals. We spend millions as a company and an industry to try to train people.

Mr. COYNE. Have you had much success in those efforts?

Mr. JERNIGAN. Yes.

Mr. COYNE. Or is still one of the driving forces to push you overseas?

Mr. JERNIGAN. It is still a prime consideration as to why we went overseas the last time around.

Mr. COYNE. Even though you have had some success in these training efforts?

Mr. JERNIGAN. Yes.

Mr. COYNE. They are just not enough.

Mr. JERNIGAN. Not enough.

Mr. COYNE. Thank you.

Chairman HOUGHTON. Mr. Weller?

Mr. WELLER. Thank you, Mr. Chairman. I think one clear message I have gotten from this panel is that, of course, our current tax code is stymieing innovation and advancement of technology and is actually depressing the opportunity for higher wages for workers in this country. And that is why I think your hearings are so very, very important.

I recognize we have got a number of people on the panel and, of course, a limited amount of time. I just want to direct my first question, I think, to Ms. Coleman. As you know, of course, we have worked with your organization on the issue of depreciation treatment of office computers, as we have with others that are on this panel. Currently, the office computer, you carry it on the books for 5 years. Do you feel that that is an accurate reflection of the life of those office computers?

Ms. COLEMAN.I certainly think that your legislation to expense office computers is an excellent first step, and I think the NAM believes that all business equipment should be expensed.

Mr. WELLER. You indicated you support expensing. You know, one of the questions I am often asked—and I have been given the figure of 12 to 14 months is apparently how often that many businesses replace that computer, the PC that sits on the desk. Is that an accurate figure?

Ms. COLEMAN.I am not really in a position to comment on that right now, but I would be happy to get back to you.

Mr. WELLER. Okay. Are there any others on the panel that can share with us just from their possible, Mr. Jernigan, maybe? You are in the business.

Mr. JERNIGAN. I think we are replacing computers in our company about 2 to 2 and a half years.

Mr. WELLER. So that 12 to 14 months may be a little too—

Mr. JERNIGAN. I don't know the answer.

Mr. WELLER. Okay. Anyone else on the panel on that turnover, on 12 to 14 months?

[No response.]

Mr. WELLER. One of the questions that clearly was raised when Treasury was before us was—you know, they took 2 years to do their study, which is a long period of time. It is a lifetime in the time of Congress let alone in the business of technology where we have seen such rapid changes in the last 2 years, let alone the last 5 or 10. And they indicated that they had failed to collect any empirical data regarding to when it comes depreciation treatment of technology.

I was wondering, Do your organizations, have any of you collected any empirical data that might help us better understand and better prepare as we work towards depreciation reform? Any organizations? Mr. Jernigan?

Mr. JERNIGAN. Yes. The semiconductor industry has done three studies over the last 15 years in conjunction with people in the Treasury Department, working with them on the methodology, et cetera. They are reluctant to still endorse the studies, but they actually helped to participate in the studies with the outside consulting firms we used.

The last study we did showed that semiconductor manufacturing equipment has an economic life of just about 3 years, and that study was done 5 years ago, and I am sure the life of our equipment is less today.

Mr. WELLER. Okay. Tying in with that, Mr. Jernigan—and I would very much like to see your material as we work on the depreciation reform.

Mr. JERNIGAN. We will provide it to you.

Mr. WELLER. This is my last question I just want to direct to you. You mention in your testimony how other countries provide for depreciation treatment of technology, and, of course, our chief competitors are in Europe and Japan. Can you share with us what their depreciation schedules on PCs, for example?

Mr. JERNIGAN. In the depreciation area, their lives are generally equal to better than ours. But then it is in the fine print that they give you the better incentives. Japan has a 5-year life, but they give you extra depreciation if you are located in special zones or if you use the equipment over 24 hours a day. So, in looking at Japan, we have noted that they offer an 88 percent write-off in the first year and up to 113 percent write-off after 3 years.

Other countries, and our experiences with Germany, will essentially pay for half the plant. And we know some companies in our industry where the plant was almost totally paid for, and that has been the case in Italy. We know that Taiwan is a major country today. In fact, the Government of Taiwan is thinking that their plants now will buy more semiconductor equipment in 2 years' time than in the U.S. In other words, everyone is going to Taiwan because of all the additional incentives: short depreciation, cash grants, low interest rate loans, on and on and on.

I think our Treasury Department was talking about, well, it looks like there isn't much difference between our country and other countries. If you look at just the plain depreciation rules, probably the differences aren't that great. It is in the other incentives that they offer, which are cash recovery incentives that often-

times equate to expensing and sometimes even expensing plus incentives.

Mr. WELLER. That is very helpful. Thank you.

Thank you, Mr. Chairman, for the opportunity to ask questions.

Chairman HOUGHTON. Thank you.

Mr. Watkins?

Mr. WATKINS. Thank you, Mr. Chairman. I, too, would like to thank you for having these hearings and having this, I think, very appropriate time to discuss this. The high-tech industry, we do have a tremendous crisis ahead of us, I think.

Mr. Jernigan, have you looked at Native Americans? We do have tax incentives, but many companies will not look at Native Americans, and we do have accelerated depreciation. We have got some nice tax credits. For instance, in my district I have surveyed them. I am going through career tech, low-tech stuff, and there are 8,000 people or more that right now have had some high-tech. But many industries have not looked at going into small- town rural America, and I would like to encourage you not to overlook that, especially with the Native Americans. Many of them are really highly, well qualified and can do a great job, but sometimes we are always left out. As I said last time, don't overlook—do go over rural America going somewhere else when we do have that need.

I am back here because of that reason. I was a businessman in small- town rural America and trying to make things work, and out-migration, the lower unemployment, we have people who live out there, and one of the biggest problems in high-tech is needing a stabilized workforce. We have that in rural America. That is why they are living out in the small- town rural America because they want to stay there and live there and work there and raise a family there. All we want to do is have the opportunity there. And I have been working some pilot areas to try to get there.

We do have tax incentives there to be able to help us do some of the things, so I want to encourage you, and I would welcome any of you to let me visit with you in my office or your office about that. I am here in this Congress trying to rebuild the economic livelihood of people who have been left behind since the Great Depression, let alone just in this time.

You know, history books, we can look back at history books, and we know the Industrial Revolution was one of the major launching pads of this great country. But we are living through two revolutions now, yes, the information technology revolution, but also globalization. Both those are revolutions taking place right now in our lifetime, and I would like to just leave you with the fact that we need to try to make sure all of America happens to be worthy of these incentives.

I came back also because I wanted to try to help shape a global competitive economy for the United States. We balanced the budget, which I think is really important, but a global competitive economy is one that has got less taxation. We have got to have less taxation, Mr. Chairman. We have got to be lean and mean on taxation if we are going to compete in a global economy. The same way with less regulation—

Chairman HOUGHTON. You can be leaner and I will be meaner.

Mr. WATKINS. You will be meaner, yes, sir, Mr. Chairman. But less regulation and less litigation. In fact, if you look at it, industry trying to compete around the world today, they got a 15 percent overburden when you look at the tax, over 15 percent overburden when you look at taxation and the regulation and the litigation when we start trying to compete with the world. And I want to try to give you some relief in a lot of those areas. That is why I am working with my friend Jerry Weller here on his depreciation bill that we have got to have to help with the new economy. And I just want to—I guess maybe I am making more comments than I am asking any questions, but I am pleading with you not to overlook rural America out in those areas. I have got 21 counties in Oklahoma, and like I say, none of them on their own probably can support a major industry, but when we pull them together in the aggregate, we can provide tremendous opportunities. And they can do that in Illinois, they can do that in a lot of other areas around the country.

Have you any industry working with the Native Americans?

Mr. JERNIGAN. Mr. Watkins, we will invest in any area—it could be Native Americans or a black community or Asian. That is not important to our industry. We will go where the jobs are and where the people are well trained. And I would be very happy to sit down with you and give you my perspectives of what Oklahoma will need to do to attract semiconductor jobs.

I know that Oklahoma will attract some major semiconductor plants. You have a very aggressive economic development program. You have come very close to attracting some major plants already, and I would, as I say, be very happy to sit down and give you my perspective on that. I could be available this afternoon or—

Mr. WATKINS. I will be available right after you get up from that table.

Mr. JERNIGAN. Okay, you are on. You have got a date.

Mr. WATKINS. Anybody else available?

[Laughter.]

Mr. WATKINS. Thank you, Mr. Chairman, very, very much.

Chairman HOUGHTON. Thanks very much, Mr. Watkins.

Mr. Portman?

Mr. PORTMAN. Thank you, Mr. Chairman, and I really appreciate all the input we are getting from this panel and the previous panel, and I commend the chairman for holding this hearing. We probably don't have time this year to legislate in this area, but now that we do finally have the Treasury report in hand, we do have some data with which to work. There are no legislative recommendations, as you know, in the Treasury report, nor apparently in the earlier testimony from Treasury did we hear any specific recommendations. So it kind of falls back on this panel and others in Congress to figure out what might be the best course to take.

I have heard today a lot of specific concerns, and it seems to me that to address one area or another might not be the wisest approach, although there certainly are some areas that need immediate relief in the high-tech area. But it seems to me we do need to have a revamping, and it seems to me that it ought to be something that this committee works on immediately in the new year.

I have a couple questions for the panel, if I might, and a couple of specific questions, if I could, Mr. Chairman, for von Unwerth.

A general question. Should we give Treasury more discretion—I mean, again, I hear from low-tech to high-tech companies that the class life or category is inaccurate for this product or that, that the cost recovery is not appropriate because of changing conditions, you know, new technologies among other things, that it is just impossible, frankly, for Congress to legislate in this area and keep up with it.

The 1986 act gave the Treasury Department more discretion, as you know, to determine what the appropriate class life was. In essence, we gave them discretion to, therefore, change what some cost recoveries were and change the taxes that you pay.

We kind of pulled that authority back to Congress, partly in response, I understand, to constituent concerns. I wasn't here then. It was slightly before my time. But I wonder if I could get the panelists who were in the business at that time and dealing with Treasury or those who have looked back on that period to give us some input as to whether we should give Treasury more discretion in that area. Does that make sense? Ms. Coleman, do you have a thought on that?

Ms. COLEMAN.Well, I have to admit, I wasn't involved in the issue at that time. Certainly, I think—

Mr. PORTMAN. You and I were both in high school at the time.

Ms. COLEMAN.I wish.

I think the time that it took to do just this study that they released in July, points to how time-consuming it would be to update the current system.

Mr. PORTMAN. It took 2 years, and there are no recommendations.

Ms. COLEMAN.Pardon me?

Mr. PORTMAN. I am just agreeing with you.

Ms. COLEMAN.We support moving to an expensing system, which would be a lot more straightforward and certainly easier to administer and develop.

Mr. PORTMAN. And with an expensing system, you wouldn't have to worry about making some of these decisions, changing classifications. You would have immediate expensing. And you talked about a transition to that. How about, though, others of you who, if we were to stay with a depreciation system, would it make sense to give Treasury more discretion? Mr. Jernigan?

Mr. JERNIGAN. I think it definitely would. I think you need to give Treasury broad guidelines that are intuitively correct. As Congressman Weller said, he can't believe that a computer has a 5-year class life, and we all know that maybe it should be 2 years or 1 and a half years. So I think you need to give Treasury a mandate and strong guidance that you have got to be realistic, also.

We don't always have that data out there, or it is very expensive to collect that data. In our industry, the semiconductor industry, we have done three studies, and the studies are very time-consuming, they are very expensive. You have to hire outside people. And then when you turn over the study to the Treasury, it just gets lost. And industries don't have the manpower and the time and the money to do all these studies.

So broad guidelines to Treasury encouraging them to be more realistic and intuitive in what they are doing I think would be very useful.

Mr. PORTMAN. Including maybe mandated reviews or sunsetting or different classifications or class lives to force them to take a look at the reports or the data that you would submit. How about any other comments on that, is anybody fearful of giving Treasury that kind of discretion? Mr. Vogel?

Mr. VOGEL. Well, as I think you are aware, Treasury has had a lot of authority over the years, and that is where the guidelines that we currently live with today came out of in the early 1960s. And what I think we see is that it is a slow, ponderous process. It is heavily fact-driven. The Treasury report itself that recently came out, really weighed lots of different directions that they could go in terms of deciding how should the assets be depreciated, over what life, and what kind of results are we trying to achieve.

To some extent, what happened in 1981 was a superb development in that what happened was we set aside the notion of sort of trying to carefully tweak the depreciation to match what lives are being experienced and called it something different, called it ''accelerated capital cost recovery.'' And the concept was that we are getting away from this traditional notion of how long these assets live and recognizing that what we have got really going on is the need to recovery your capital and recover it in a timely manner and recover it on a real dollar value basis so that the effects of inflation do not destroy the capital base of the country.

And that is the system we are on today, and I think Congress took the lead in enacting that kind of system. So I think it would be risking longer periods of stagnation if it were put back into a merely administrative process. I think that is why we have suggested that, you know, the only way to timely address the changing nature of our industry is for Congress to act.

Mr. PORTMAN. You mentioned inflation. Another idea going beyond cost recovery is to actually index depreciation schedules to inflation. With low inflation, I assume your cost recovery has been relatively good, although relative to other countries, Mr. Jernigan, it doesn't make any difference because I don't think any other of our major competitors handle inflation any differently than we do. Although with low inflation, maybe that is not as big a concern today with you. One idea would be that Congress could mandate that at a minimum. There is an expense to that, of course.

Mr. VOGEL. I think Treasury's report discussed some of the problems of identifying one area for inflation adjustment.

Mr. PORTMAN. Well, I appreciate again the input, and I thank the chairman for taking on this issue. He is a brave soul, mean, lean, and courageous.

I have one other question, if I could, Mr. Chairman, with regard to the final testimony we heard today with regard to the rental furniture.

You said in your comment, Mr. von Unwerth, that the rentable life of this equipment is 3 to 4 years, which is inconsistent, it seems to me, with what you are calling for, which is to simply go back to a clarification that the five-year recovery period is proper.

Why wouldn't you ask for three to four years rather than sticking with the five years or clarifying the five years?

Mr. VON UNWERTH. Well, you make a very good point. Thank you, Mr. Portman. We are sort of right on the cusp of a class life. We are about four years, three to four years, and the class life difference between three and five-year property is right at that. The breakpoint is between four and five -four years and under for three-year propoerty, five to nine years for five-year property. The next breakpoint, for seven-year property is 10 years and up. We know we shouldn't be there.

Mr. PORTMAN. Yes. And you have got an IRS ruling, you said, out of my hometown IRS office, Cincinnati, Ohio, for 7.

Mr. VON UNWERTH. They have insisted on a change of accounting method to go to 7 years for one of the national office furniture rental companies that is headquartered in Cincinnati. That makes no sense. Everybody else is doing 5 and always has. We do think there is a case to be made for 3, but we are not here asking for that. All we are seeking at this point is simply a clarification that 5 is the fair and proper interpretation.

Mr. PORTMAN. Three years is what the rent-to-own industry has now?

Mr. VON UNWERTH. That is what the rent-to-own industry has. Yes, that is correct.

Mr. PORTMAN. Okay. But you are just asking for a clarification that the 5-year recovery period is proper.

Mr. VON UNWERTH. That is correct.

Mr. PORTMAN. Under the current system. And when you say short-term leases, what are you talking about?

Mr. VON UNWERTH. One year or less. They are typically in the industry one year or less. The legislation we propose would define short -term as one year or less and would define a qualified dealer as one who leases primarily pursuant to short-term leases. We are not talking about anything like a finance lease here. This is rental.

Mr. PORTMAN. And the revenue differential between 5 and 7 years' recovery would be what for rental?

Mr. VON UNWERTH. About a million and a half a year, maybe 2 million. That is based on an assumption of 75 to 100 million of property annually placed in service by the entire industry.

Mr. PORTMAN. That is all?

Mr. VON UNWERTH. As I said, this is a very small industry.

Mr. PORTMAN. Okay. Thank you very much. I appreciate your testimony, and I thank all of you for helping us out. Maybe we will see you again next year.

Thank you, Mr. Chairman.

Chairman HOUGHTON. Thank you very much, Mr. Portman. I have just got a couple of questions to wind this thing up. First of all, Mr. Jernigan, you know, when Brazil or Japan or Germany are giving these terrific incentives, I don't think that really gets into depreciation. I mean, that is an outright incentive, and I don't think that this particular panel can handle this particular—that is another issue, important as it might be.

Also, Mr. Jalbert, you talked about R&D tax credits. The same thing, I think it is very important, that we ought to do it, but I don't think we can handle that.

I think the thing that I am interested in is almost a redefinition of Section 167. Rather than the wear and tear and the obsolescence, you have other factors you are talking about. In sort of simple language, it is a Moore's Law of every industry. And so the question is more than wear and tear, it is competition, it is rejuvenation, it is inflation.

I could make a strong case, I think, for the iron and steel industry, that they should have the special accelerated depreciation because they are so much in the doldrums, as contrasted to the wireless industry, because you have been able to do particularly well.

However, when you take a look at the pressure from abroad and the incentives which are given there on depreciation itself, it makes it very, very difficult.

So I wonder how we sort this thing out and help the Treasury redefine that Section 167. Maybe you have some ideas.

Mr. JERNIGAN. Do you want me to start?

Chairman HOUGHTON. Sure.

Mr. JERNIGAN. Okay. Well, as I have said, the U.S. semiconductor industry has submitted three studies to Treasury which I think are quite compelling and were done under the auspices and guidance of Treasury. I think that would be a good starting place. The last study we showed was 3 years. I think Treasury ought to recommend to the Congress that we have a 3-year life and Congress ought to act on it expeditiously as opposed to waiting for comprehensive reform, which may be two or three more generations of semiconductor plants.

Chairman HOUGHTON. Have you seen the report to Congress on depreciation recovery from the Treasury?

Mr. JERNIGAN. I have only read it once through because it was about 130 pages, but I have seen it. The July study.

Chairman HOUGHTON. Yes.

Mr. JERNIGAN. Yes. It doesn't address the issues very adequately for us. It is more of—

Chairman HOUGHTON. Well, look, this panel is trying to get at the issue. We are trying to find a resolution to this rather than just hearing things. And if you have some specific ideas which should be added to this, then we can pass it along or you can pass it along to Treasury, we would like to see them.

Mr. JERNIGAN. We will do that, sir.

Chairman HOUGHTON. We would like to see something done. Okay. Now, Mr. Vogel or Ms. Feldman, any other suggestions we have here? Because we would like to move the ball forward here. Clearly, we are in an entirely different age now in terms of the depreciation schedules, and we would like to have some specific, very simple, one or two suggestions that the Treasury ought to use. But you have got to understand that there is a precedent to be set. When you do it for one industry, you have got to do it in some sense for another.

Any other suggestions? How about you, Mr. Jalbert?

Mr. JALBERT. I come here as a representative of the AEA, but I am also a businessman. And what I see is practicality, and I look at our book accounting versus our tax accounting, and I will take the example of the computer.

We know our computers won't last more than 2, 2 and a half years, yet we depreciate them over 5. And that is just an example of how we are behind the times. And we have a company that has—we are in rural America. We are in Waseca, Minnesota, and in Lincoln, Nebraska. And when you think about that, we are a high-tech company and we have over 100 engineers. Yet we have openings for 20, and that is because of qualifications and that is because of training.

So we have to do training in our own company. We are not a big company. We are between 55 and 60 million. But we spend 1 percent of our revenue on training, and that is something that we would like to continue, especially for graduate work. So we look at graduate work and the tax incentives there. We look at depreciation and the opportunities there. And then finally, if you take a look at R&D credit, we are an industry that is driven by R&D. We are $55 to $60 million company, and we spend $6 to $7 million a year just on R&D. So the tax code has to be in tune with what is going on today.

So the practicality for me as a businessman is we need to make some of these things permanent, we need to continue other things, and we need to re-examine how we do depreciation.

Chairman HOUGHTON. Any other comments, Ms. Coleman, Ms. Feldman?

Ms. FELDMAN. Yes. With the rapid advances in technology, especially in the last 10 to 20 years, we would suggest instead of revamping everything we would suggest starting with some of the industries that have started up, like the wireless industry, in the more recent years that aren't specifically mentioned in the revenue procedure. It just raises questions by the IRS as to what our class lives are and what our recovery periods are. We think we know what they are, but it is a continuing audit issue amongst our companies that has not been resolved. To address industries such as ours that have the newer technologies might be a good starting point.

Chairman HOUGHTON. Ms. Coleman?

Ms. COLEMAN.I think once again moving towards expensing would resolve a lot of these issues.

Chairman HOUGHTON. You would like to expense everything.

Ms. COLEMAN.Pardon me?

Chairman HOUGHTON. You would like to expense everything.

Ms. COLEMAN.Yes, I would. But being a broad-based trade group, I think one problem that we have is that some assets that have longer class lives are at a disadvantage vis-a-vis assets with a shorter asset life, which could distort investment decisions. And I think an expensing system would eliminate a lot of those problems.

Chairman HOUGHTON. All right. Fine. Anybody else, Mr. Vogel, Mr. von Unwerth? No comments? All right.

Well, thanks very much. I certainly appreciate it. Any other suggestions you have for us to mull over, please send them in to us.

The hearing is adjourned.

[Whereupon, at 3:31 p.m., the hearing was adjourned, to reconvene at 11 a.m., Thursday, September 28, 2000.]

THE TAX CODE AND THE NEW ECONOMY

THURSDAY, SEPTEMBER 28, 2000

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

The subcommittee met, pursuant to call, at 10:00 a.m., in Room 1100 Longworth House Office Building, Hon. Amo Houghton (Chairman of the Subcommittee) presiding.

Chairman HOUGHTON. I don't mean to scare everybody, but I hope the meeting can come to order. We are appreciative of all of you being here, particularly our panel, and we are going to continue the hearing on the tax code and the new economy. As many of you know—I don't know whether you gentlemen were here—but our focus was on depreciation. Today we are going to hear from you and others on how our tax laws treat research and development and the cost of maintaining a skilled workforce. So what I would like to do is turn this over now to our senior Democrat on the subcommittee, Mr. Coyne, to introduce the first witness.

Mr. COYNE. Well, thank you, Mr. Chairman, and as you note, today is the second of the Oversight Subcommittee's hearings to discuss the new economy and whether the tax laws are current in today's times. I want to thank Chairman Houghton for scheduling these important hearings and also I want to personally welcome Mr. Joseph Hester from Pittsburgh, Pennsylvania, who is Vice President of Administrative Services at Allegheny Community College and will be our first witness on this first panel.

I look forward to his insights and views on the importance of developing and coordinating students' educational studies with the workforce skills needed by the business community today and to the testimony of the other witnesses, both on the first and second panels.

Thank you, Mr. Chairman.

Chairman HOUGHTON. Thanks very much, Mr. Coyne. Mr. Weller, would you like to make an opening statement?

Mr. WELLER. Well, thank you, Mr. Chairman, and again I want to commend you for what I believe are very, very important hearings regarding the impact of Federal tax policy on technology. Clearly what was stated on Tuesday was that our outdated tax code stymies innovation and it is blocking and depressing job opportunities and wages for workers. So, clearly I think these hearings are extremely important and I look forward to discussing with our panel today a couple of initiatives that I feel are extremely important and address the issue of employer-provided computers and

Internet access, as well as the need to provide tax incentives for skills training in the workforce.

So, thank you, Mr. Chairman, for the opportunity to participate and thank you for putting together these panels.

Chairman HOUGHTON. Not a bit. Thanks very much, Mr. Weller.

Now, Mr. Hester, would you begin with your testimony?

STATEMENT OF J. JOSEPH HESTER, VICE PRESIDENT, ADMINISTRATIVE SERVICES, COMMUNITY COLLEGE OF ALLEGHENY COUNTY, PITTSBURGH, PENNSYLVANIA

Mr. HESTER. Thank you, Mr. Chairman and members of the committee. My name is Joe Hester and I am here representing the Community College of Allegheny County. I certainly appreciate the opportunity to come and speak to you briefly about the Community College of Allegheny County in western Pennsylvania and its workforce needs. There is one thing that is clear to us in western Pennsylvania and I suspect this is true around the rest of the country as well: Today we have more good jobs available than we have people that have the skills and training and preparation to fill those jobs.

Our problem is not one of people not having jobs. They have jobs, but they also have the aptitude to have better jobs if they had the skills and training that they need and there are good jobs available for them. Enticing them into the training program and giving them that opportunity is the problem that we face. The Community College of Allegheny County has been involved in a significant way in trying to bridge the gap between job demands and the available pool of skilled workers.

We have programs in place. We have good programs in place that could provide those skills. The problem is in attracting folks out of the working world and into those training programs to acquire those skills. What I am talking about is people who can work at the production level in businesses in western Pennsylvania. We have institutions in western Pennsylvania that do a good job of producing plenty of senior engineers and managers to get organizations started and opening them up to the public, but we do not have an adequate supply of folks that are prepared to work at the production level.

We have a workforce that could accommodate those requirements if they had the necessary training. We think that there are a number of options that are available to encourage folks to come into our training programs. A prominent one of those that I would like to suggest to you is encouragement of apprenticeship programs where people are encouraged to go to work for organizations and their organizations then provide them with the opportunity to go and get instruction in technical fields while they are learning also on the job.

Such programs would allow people the opportunity then to learn on the job and to fill those jobs without walking away from gainful employment that puts food on the table for their families. Section 127 of the Tax Code already provides some incentives to businesses to pay for ongoing training for their existing employees and we think that is a very positive provision. We would like to see it made

a permanent provision rather than being continually sunset-reviewed.

I would like to offer a program that we are familiar with from Iowa that might be a model that would be useful in encouraging businesses to become more involved in providing this kind of opportunity to their employees. In that program, the community colleges in Iowa are allowed to sell bonds which they then use to finance programs for new and expanding businesses. The taxes paid by those employees in those new and expanded businesses then are funneled back to the community colleges for a period to pay off those bonds.

The Iowa experience has been very positive in the use of this kind of vehicle and it is one that I would recommend to the committee for consideration. With respect to existing tax law, the Hope Scholarship program is a very positive force in allowing folks to access the educational programs and advance their skills, but it only covers tuition and fees. It does not address the living needs of folks that go to community colleges, who are normally older than the traditional college student, who have families to support and who cannot afford to walk away from a job that puts bread on the table.

If the provision of the Hope scholarship and similar kinds of programs were extended to cover these kinds of other expenses, we think that would be a positive support for community college operations.

Chairman HOUGHTON. Is that it?

Mr. HESTER. That is essentially it for me, sir. Thank you for the opportunity.

[The prepared statement follows:]

Statement of J. Joseph Hester, Vice President, Administrative Services, Community College of Allegheny County, Pittsburgh, Pennsylvania

Mr. Chairman and Members of the Subcommittee:

Good morning. My name is Joe Hester and I am Vice President for Administrative Services of the Community College of Allegheny County (CCAC), located in Southwest Pennsylvania. I am pleased to be here to speak with you today.

In Southwest Pennsylvania, as elsewhere, there are today more good jobs available than there are qualified applicants to fill them. This is particularly true at the production level for many organizations attempting to expand delivery of their products or services to expanding markets of opportunity.

Community colleges have as a significant part of their common mission the provision of assistance to their community's labor pool in acquiring the necessary knowledge and skills to fill these good jobs. If we fail in this endeavor, many good jobs in our communities will go elsewhere.

The Community College of Allegheny County devotes considerable energy and effort to assisting the match between available jobs and labor market skills. We offer a wide range of programs that address the needs that we know about in our market area. We work closely with business, industry and labor organizations in the area to identify existing and emerging requirements. We know, nonetheless, that there are many individuals in the area who could benefit substantially from participation in our programs but who fail to do so due to some set of reasons unique to their individual circumstances. At the same time, the needs of business go unmet.

There are a number of issues that we would encourage you to consider in your review of the tax code.

Technology Needs

Community colleges have long been leaders in the use of technology, both for distance learning and in the classroom. However, community colleges remain challenged by the ever-increasing pace of technological development because of the drain it puts on resources. As technology develops at a faster pace, so do the demands of financing it.

We urge Congress to develop creative ways of using the tax code to help underwrite technology on our campuses. The needs are enormous and growing. Perhaps a credit could be established to businesses that provide to campuses badly needed instrumentation, computers and software, and help with infrastructure needs.

Another approach might be to give states greater incentives to make technology available on community college campuses.

Faculty Needs

Another pressing need at our institutions is faculty adept in high-tech areas, particularly those in the area of information technology. The fundamental economic reality today is that most community colleges simply cannot afford to compete in the market for individuals accomplished in IT fields. Consequently, a tax credit is needed to encourage companies with employees who can teach in the high-tech areas, and the natural sciences, to lend them out to institutions of higher education. Some businesses are already doing this, but a financial incentive would stimulate greater activity and benefit all parties over the long run.

Skilled Workers

Community colleges embrace the goal of working closely with business to train workers for the new economy. One pressing need remains identifying entry-level workers who have the literacy and quantitative skills, and a strong orientation to the world of work, to make them productive employees. To help companies develop skilled workers, the federal government should approve a corporate tax credit to encourage participation in early formal training or apprenticeship programs. Apprenticeships are beneficial to worker and employer alike, but they are extremely costly and easily eschewed in a competitive business environment. The government needs to do more to tangibly encourage them. To help incumbent workers update their skills throughout their careers, a long-time priority for CCAC and most community colleges, the federal government should provide employers a corporate tax credit of $2,500 per employee per year to cover the cost of formal training for front-line, hourly wage workers in technical fields.

President Clinton's "College Opportunity Tax Cut" (COTC)

Although the tax code is not generally an effective mechanism for helping financially disadvantaged students make the leap to college, it can, when used creatively, provide meaningful access. However, we have deep concerns regarding the President's $30 billion "College Opportunity" tax plan. While the plan provides some benefit to community college students wanting to enhance their job-related skills, its basic structure precludes it from being of any assistance to needy credit students attending community colleges. There are two reasons for this:

- As with the Hope Scholarship and Lifetime Learning Tax Credits, the President's proposal is non-refundable and therefore does not reach low-income students with the greatest financial need. We acknowledge the extreme difficulties faced by middle and upper middle-income families facing expensive tuition bills for higher education. Nevertheless, it is poor public policy to address this need to the exclusion of the most economically disadvantaged group of college students.
- As with the Hope and the Lifetime Learning credits, the newly proposed benefit applies only to tuition and fees and does not cover books or living expenses. These costs are often as severe an impediment to college attendance as tuition and fees, and their exclusion from the credit makes it fundamentally flawed.

The Hope and Lifetime Learning credits have made attending the first two years of college more affordable for many, but, contrary to what the Administration has asserted, they have hardly made the first two years of college affordable for all. There is still tremendous unmet financial need for many community college students. The Hope and Lifetime Learning credits only cover expenses for tuition and fees and are not available to the neediest students. If Congress acts on the President's new proposal, more must be done to help these deserving students.

Section 127 of the Internal Revenue Code

Community colleges and their students strongly support making Section 127 of the Internal Revenue Code permanent. This provision has been remarkably successful in helping individuals gain access to the education and training so critically important to remaining marketable in today's rapidly changing economy. As this Committee knows, Section 127 allows employees to receive up to $5,250 annually of tax-free employer-provided educational assistance. It is effectively targeted because businesses have a strong self-interest in making sure that the education and training benefits they provide will actually result in more productive employees. Section 127 benefits are used at all types of institutions of higher education.

Since its creation, Section 127 has always been subject to a sunset provision. It is hard to explain why this should be the case, since the provision has strong bi-partisan, bi-cameral support. Section 127 should be made permanent.

On behalf of the Community College of Allegheny County, I'd like to thank you for the opportunity to appear here today.

Chairman HOUGHTON. Well, thank you very much. We will have questions and you can come back and make any other statements you would like.

I would like to move next to an individual, Mr. Bean. Thanks very much for coming.

STATEMENT OF MARTIN BEAN, PRESIDENT, PROMETRIC, BALTIMORE, MARYLAND, ON BEHALF OF TECHNOLOGY WORKFORCE COALITION, ARLINGTON, VIRGINIA

Mr. BEAN. Mr. Chairman and distinguished representatives, my name is Martin Bean and I am President of Prometric, Inc., a Thomson Learning company. Prometric is the global leader in the delivery of computer-based testing services for academic and corporate assessment. And more importantly for today, we are the leader in the delivery of IT certification tests where every year we deliver over three-and-a-half million exams. But perhaps more importantly we touched just about every IT professional in the world seeking to be certified in our industry.

I am here today to speak on behalf of Prometric, but also the Technology Workforce Coalition, or TWC. TWC was formed to address the IT skilled worker shortage, a critical problem in every sector of our economy. Nearly 270,000 unfilled positions were identified in last fall's workforce study, "The Crisis in IT Service and Support." The survey of 878 chief information officers and other IT executives found that nearly 10 percent of IT service and support professional positions are unfilled in America today. As a result, the U.S. economy loses more than $100 billion in spending each year on salaries and training. The Technology Workforce Coalition advocates Federal-and State-level solutions to address the shortage, including IT training tax credits, H1B visas, temporary visas, K–12 curriculum changes and teacher training incentives.

While TWC supports a multifaceted approach, it believes that IT training credits and tax credits would have the greatest impact on the shortage. One of the biggest barriers to IT training is the cost. Small businesses and individuals often cannot afford the cost of training and, more importantly in the IT industry, continuous retraining. IT training tax credits are market-driven, prudent, cost-effective and user-friendly. For that reason, nine members of the U.S. House of Representatives, led by Representatives Jerry Weller and Jim Moran, and we thank them for that, introduced bipartisan legislation, H.R. 5004, the Technology Education and Training Act, on July 27, 2000.

TWC strongly believes that the provisions of H.R. 5004 represent the best opportunity defined by the medium-and long-term solution to the IT worker shortage. The IT training tax credit was included on the list of recommendations by the 21st Century Workforce Commission. As this session of Congress comes to a close, it would

be a strong signal to American workers that Congress cares about the biggest obstacle to a rewarding IT career, namely getting access to the necessary training and certification that opens the door to the new economy.

Federal legislators also play a key role in determining a critical but small supply of IT workers that get into the U.S. through the INS H1B temporary visa program. In fact, I used the INS visa program to come over to the United States from Australia. But although H1B workers fill a critical role in the IT workforce, the proposed increase in visas will not come close to filling over 850,000 available positions in United States of America today. Therefore, while it is extremely important that we increase access to foreign IT skilled workers, we must also focus on training more IT workers here in the United States. In doing so, we will silence critics who claim the IT industry and Congress is more interested in importing temporary foreign workers than it is in training U.S. workers.

If business is changing substantially, and it is, shouldn't we also view training in a new way? TWC believes the training program must result in certification. IT certification provides an independent assessment of the worker skills and helps determine whether they are qualified for the requirements of the job. Further, it helps ensure that the Government investment in training results in the skills truly being obtained.

We understand that time is short here at the end of the 106th Congress, but by linking the IT training tax credit to the H1B visa legislation, Congress can pass two measures that will significantly reduce the IT worker shortage, implement two recommendations of the congressionally-created 21st Century Workforce Commission, silence critics who claim Congress is only focusing on foreign workers and encourage more IT training for American workers.

TWC believes that there will be a substantial return on investment on the IT training tax credit. U.S. productivity would improve and the Government would quickly recover the cost of the credits through new corporate sales and personal income tax revenue by filling hundreds of thousands of available jobs. In 2020, we will look back at this period and recognize that either America maintained or lost its position as the global leader due to its ability to increase the IT workforce.

The initiatives I have mentioned today are a win-win for all involved as we prepare for the workforce challenges of the 21st century and strive to maintain America's global IT leadership. We thank you, Mr. Chairman, for the opportunity to testify at this hearing.

[The prepared statement follows:]

Statement of Martin Bean, President, Prometric, Baltimore, Maryland, on behalf of Technology Workforce Coalition, Arlington, Virginia

Mr. Chairman and distinguished representatives, my name is Martin Bean. I am the president of Prometric, a global leader in the delivery of computer-based testing and assessment services for academic and corporate assessment, and information technology (IT) industry certification. Prometric is a division of Thomson Learning, which is among the largest providers of lifelong learning. To give you an idea of the scope of our business, which is based in Baltimore, Maryland, Prometric has contracts to deliver over 2,400 different tests, through a network of over 3500 computer-based testing services centers, in 128 countries. We operate 10 call centers in 9 countries that handled over 7.5 million calls in 1999, operated in 25 different lan-

guages, and handled over 33 different currencies. In short, we touch nearly every IT professional in the world that wants to be certified for an IT career.

I am here today to testify on behalf of Prometric and the Technology Workforce Coalition (TWC), which was formed to address the IT skilled worker shortage. The coalition is made up of many IT associations including the Computing Technology Industry Association (CompTIA), Information Technology Training Association (ITTA), Association for Competitive Technology, Association for Online Professionals, American Society for Training & Development, Information Technology Association of America (ITAA), Software and Information Industry Association, Society for Information Management, and over 500 small and large companies. Large company members of TWC include my company as well as Compaq, Computer Associates, EDS, Ernst & Young, Gateway, Global Knowledge Network, Inacom, Intel, Lucent, MicroAge, Microsoft, Motorola, New Horizons, Novell, Productivity Point Int'l, and Texas Instruments. TWC also has hundreds of small company members from all across America.

As you are well aware, the demand for IT skilled workers has caused a major shortage and is a critical problem for large and small companies in every sector. This April, ITAA released a study showing that over 850,000 of the 1.6 million new IT jobs needed in America over the next year can't be filled. Nearly 270,000 unfilled positions were identified in last fall's "Workforce Study: The Crisis in IT Service and Support." Commissioned by CompTIA, the Workforce Study is significant in that it focuses specifically on IT service and support positions. These workers are responsible for the installation, maintenance and repair of computer hardware, software, and local area networks, creating websites, as well as the help desk support that are critical to customer service operations. It is the point of entry into a bright future as part of the IT workforce, including thousands of minority and disadvantaged students, and displaced workers. The survey of 878 Chief Information Officers and other IT executives found that nearly 10% of IT service and support positions are unfilled. As a result, the U.S. economy loses more than $100 billion in spending each year on salaries and training.

By 2002, the U.S. Department of Labor estimates that over half of U.S. workers will require some type of IT skills training. What was once only a worker shortage for IT companies has spread to the IT-enabled companies (banking, insurance, etc.) throughout the entire economy. According to the Bureau of Labor Statistics, more than 20 separate non-IT industries have workforces comprised of between 4% and 12% of IT workers. In fact, in your own offices you can see the substantial changes IT has had on your constituent activities. For better and at times for worse, your staff receives hundreds of emails a day. Depending on the issue or public interest, the number of emails can jump to tens of thousands per office per week. What is today a significant challenge for corporate human resource departments will soon be a crisis for the public sector since they are not able to offer the compensation packages that are attracting high tech professionals to careers in the private sector. To be blunt, how will state and local governments across America attract the IT workforce they need if the public and private sectors do not aggressively begin implementing solutions to the overall IT worker shortage?

The Technology Workforce Coalition advocates federal and state level solutions to address the shortage including IT training tax credits, H–1B temporary visas, K–12 curriculum changes, and teacher training incentives. While TWC supports a multi-faceted approach, it believes that IT training tax credits would have the greatest impact on the shortage. One of the biggest barriers to IT training is the cost. Small businesses and individuals often cannot afford the cost of the training and continuous retraining. IT training tax credits are market-driven, prudent, cost-effective, and user-friendly tool that will simultaneously help large segments of America's workforce including high school students not going to college, displaced workers, those caught in the digital divide, and people feeling trapped in Old Economy jobs.

For that reason, nine members of the U.S. House of Representatives, led by Representatives Jerry Weller and Jim Moran, introduced bipartisan legislation, H.R. 5004, the Technology Education and Training Act (TETA), on July 27, 2000. H.R. 5004 would offer businesses and individuals in the United States the incentives to seek education and training in IT industries. TWC strongly believes that the provisions of H.R. 5004 represent the best opportunity to find both a medium and long-term solution to the IT worker shortage and ultimately provide U.S. citizens with high paying jobs here at home.

The coalition thanks Representatives Weller and Moran, and the other legislators, for introducing a bill that could have the greatest impact on the biggest challenge for today's business leaders—hiring, training, and retaining IT workers. TETA provides a $1,500 tax credit for information technology (IT) training expenses. The tax credit would be available to both individuals and businesses. The allowed credit

would be $2,000 for businesses or individuals in enterprise zones, empowerment zones, and other qualified areas. The training program must result in certification. This helps ensure that the government investment in training has an independent assessment built in to verify that the skills are attained.

The IT training tax credit was included on the list of recommendations by the 21st Century Workforce Commission. The commission was created by the Workforce Investment Act (WIA) to study and recommend solutions to the critical IT worker shortage facing America. As this session of Congress comes to a close, it would be a strong signal to America's workers that Congress cares about the biggest obstacle to a rewarding IT career—getting access to the necessary training and certification that opens the door to the New Economy.

Federal legislators also play a key role in determining a critical but small supply of IT workers that enter the U.S. through the INS H–1B Temporary Visa program. H–1B workers fill high-end IT positions when American workers are not available. In fact, I used an INS visa program to come over to the United States. I serve as an example of the typical foreign worker that is given the opportunity to participate in the greatest economy the world has ever seen. America is the land of hopes and dreams to millions of people across the globe. After getting a chance to work in America, highly educated H–1Bs often move into positions where they are responsible for hundreds of workers or in my case, get the chance to run an entire company. America also benefits tremendously by attracting the best minds throughout the globe that are given the opportunity to taste the American dream, flourish in its system, and create opportunities for thousands of American workers. From the immigrants fleeing tyranny over the last 200 years to the foreign skilled IT workers seeking a seat in the lead engine of the New Economy, America continues to offer hope, riches, and a chance for every person willing to work hard to achieve their American dream.

Several legislative proposals have been put forward recently that would increase the number of H–1B visas. In 2020, we will look back at this period and recognize that America either maintained or lost its position as the global IT leader due to its ability to increase its IT workforce. By attracting the best minds from other countries and improving our domestic education and training programs at all levels, America can win the IT talent competition.

But although H–1B workers fill a critical role in the IT workforce, the proposed increase in H–1B visas will not come close to filling over 850,000 available positions. In fact, for the next 10 years, over 80% of the IT workforce must come from the existing labor pool, which calls substantially for a strong investment in re-training American workers. Therefore, while it is extremely important that we work to increase access to foreign IT skilled workers by increasing the cap on H–1B visas, we must also focus on training more IT workers here in the United States. We can also silence critics who claim the IT industry and Congress is more interested in importing temporary foreign H–1B workers than it is in training U.S. workers. Passing H.R. 5004 will enable Congress to silence H–1B critics by simultaneously taking steps to increase the training of U.S. workers.

Tax credits are an efficient way to deliver incentives to small businesses, which typically are unable to afford the high costs of IT training and lack the manpower to keep up with the paperwork required to qualify for other programs. The tax credit would be increased to $2,000 for all companies operating in enterprise or empowerment zones, and for companies with fewer than 200 employees. Since those receiving training will find jobs waiting for them when they finish their training, the country will immediately begin recouping its investment in the form of additional personal and corporate income taxes that would otherwise not be generated.

One of the most important aspects to our new economy is how rapidly business practices and the IT skills required for workers change. IT training tax credits let business leaders dictate who, what, and where to train. Congressman Jim Moran represents the 8th district of Virginia. He sums up the problem at the federal job training level quite well. ''Unfortunately, some federal job training programs are training workers how to use an abacus. They just aren't prepared to train the workforce of today or tomorrow.''

IT is changing every business sector and the terminology that details our work (i.e., 24x7, bandwidth, and e-anything). In fact, Intel's Chairman Emeritus Andy Grove stated recently that, ''Within the next 5 years, every business will be an E-business or be Out-of-Business.'' If business is changing substantially, shouldn't we also view training in a new way? Business leaders are very skeptical regarding the reliability of IT workers that say they have received training, but are not certified. An independent assessment of the workers skills best determines whether they are qualified for the requirements of the job. Another consideration is that students seeking IT careers have often been misled into believing that by just taking an IT

course they are guaranteed to get a job. Many business organizations are calling for wide scale use of IT certifications to provide fundamental skill assessments that will benefit both the employer and the worker.

Another unfortunate result of the IT worker shortage is that human resource managers are now looking at high schools and colleges as high tech recruiting centers. That would be great if these recruiters were focusing only on the students, but the IT worker shortage is so critical that teachers are getting great offers to make the school to work transition America doesn't want. We should not blame teachers. They get offers to double their salary, use the latest hardware and software, and have the opportunity to earn substantial stock options and bonuses. If America is to obtain the long-term return from its investment in school systems that will be required in the New Economy, then principals and politicians must realize—especially in a strong economy—that schools are competing with start-ups and established companies for workers with IT skills. The only way to reduce the demand on transitioning teachers to IT workers is to increase the number of IT trained workers.

By implementing these solutions to the critical IT skilled worker shortage, America will stimulate employment of new and displaced workers into high-paying IT careers, fill critical and growing IT labor shortages across all industries, and strengthen the U.S. economy by enhancing productivity and increasing exports. The initiatives I have mentioned today are a win-win for all involved as we prepare for the workforce challenges of the 21st century and strive to maintain America's global IT leadership.

We understand that time is short here at the end of the 106th Congress. But by linking the IT training tax credit to the H–1B visa legislation, Congress can pass two measures that will significantly reduce the IT worker shortage, implement two recommendations of the congressionally created 21st Century Workforce Commission, silence critics who claim Congress is only focusing on foreign workers, and encourage more IT training for American workers. TWC believes that there will be a substantial ROI on the IT training tax credit. U.S. productivity would improve and the government would quickly recover the cost of the credits through new corporate, sales, and personal income tax revenue by filling hundreds of thousands of available jobs.

We thank you Mr. Chairman for the opportunity to testify at this hearing. TWC would be happy to provide you with any further information you desire about federal and state efforts to address the IT skilled worker shortage. We encourage all interested parties to visit our Web site, *www.techcoalition.org,* to see detailed information about the shortage and how they can join the grassroots effort to help implement the solutions discussed today.

Chairman HOUGHTON. Thank you very much, Mr. Bean.

Mr. Salamon?

STATEMENT OF MITCHELL SALAMON, SENIOR TAX COUNSEL, AMERICAN AIRLINES, INC., FORT WORTH, TEXAS

Mr. SALAMON. Thank you, Mr. Chairman. Good morning, Mr. Chairman and members of the subcommittee. My name is Mitchell Salamon, and I am Senior Tax Counsel with American Airlines in Fort Worth, Texas. American Airlines appreciates the opportunity to address the important role of Federal tax law in the new economy. Specifically, we want to tell you about an exciting new program we are implementing to help our employees bridge the digital divide. And most importantly, we are here to urge you to pass H.R. 4274, which will greatly enhances this process. I would like to take this opportunity to thank Mr. Weller and Mr. Lewis for their leadership in this area.

Earlier this year, American Airlines and American Eagle joined the ranks of Ford Motor Company, Delta Air Lines and Intel by announcing that we would implement an employer-subsidized, home computer initiative for our workforce. Under our program, Amer-

ican will subsidize employee purchases of basic home computers with unlimited Internet access. We anticipate spending over $45 million over the next three years to put home computers into the hands of every employee who chooses to participate.

American's home computer program is an employee-empowerment initiative that also makes business sense. Computer skills are an essential component of almost every function within the airline industry. American Airlines and American Eagle operate and maintain 970 aircraft serving 243 cities with 4,100 daily departures throughout the world. Today I am delighted to have with me Crew Chief Thomas Thompson, representing our workforce.

In light of the scope and complexity of our industry, you can see that a technically-skilled workforce is vitally important to our success. As you might expect, we rely heavily on advanced technology to run sophisticated reservation, flight and revenue management and maintenance systems, which are continuously modified and upgraded. Obviously, a workforce skilled in tomorrow's technology will contribute greatly to American's primary goal of delivering the highest quality customer service.

In addition to supplying the hardware, American is developing an Internet portal which will provide an unprecedented opportunity to facilitate effective and timely communication between the company and its employees on issues ranging from company and industry news, corporate policies, surveys, safety issues, online training, scheduling flight crew assignments, accessing human resource and benefit information, and leveraging emerging e-business opportunities that are currently under development by the company.

This year American Airlines also created and introduced Flagship University, a virtual institution and library that employees can access through the portal. Flagship University will deliver employee development programs on topics such as airport customer service, handling of dangerous goods, airport security, flight service, environmental issues, work balance issues, substance abuse and leadership issues that we hope will instill knowledge, skills and the attitudes necessary to maximize the long-term potential of our employees.

So far, employee feedback has been overwhelmingly enthusiastic and enrollment is high. Participating employees pay American $12 per month for three years, but may upgrade and obtain options directly through the vendor at their own expense. Many employees have acknowledged that they would not be able to purchase a computer without the benefit of the program. Our employees are seizing this opportunity to enhance and develop their computer literacy and, consequently, they will be prepared for work assignments and new positions that will continue to evolve with the progression of the information age.

However, without a clarification of the tax laws, the potential for adverse tax consequences in this instance will be a significant impediment to implementing workforce initiatives that help close the digital divide. The current tax rules are unclear whether employer-subsidized home computers will be characterized by the IRS as taxable compensation to employees. The potential tax burden will most certainly reduce the number of employees taking advantage

of this opportunity and other employers for making similar investments in their workforce.

For this reason, we believe it is critical that Congress adopt H.R. 4274, the Digital Divide Access to Technology Act, the DATA Act, introduced by Congressmen Weller and Lewis. This legislation will clarify that employers can provide subsidized computers and Internet access to their employees as a non-taxable fringe benefit, which will further motivate the business community to bridge the technology gap that currently exists.

Mr. Chairman, thank you for the opportunity to speak before the subcommittee today and I will do my best to answer any questions that you or other members may have.

[The prepared statement follows:]

Statement of Mitchell Salamon, Senior Tax Counsel, American Airlines, Inc., Fort Worth, Texas

Mr. Chairman and members of the Subcommittee, American Airlines appreciates the opportunity to address the important role of Federal tax law in the "new economy." Specifically, we want to tell you about an exciting new program we are implementing to help our employees bridge the digital divide. And most importantly, we are here to urge you to pass H.R. 4274, which will greatly enhance this process.

Earlier this year, American Airlines and American Eagle joined the ranks of Ford Motor Company, Delta Airlines and Intel by announcing that we would implement an employer-subsidized home computer initiative for our workforce. Under our program, American will subsidize employee purchases of basic home computers with unlimited internet access. We anticipate spending over $45 million over the next three years to put home computers into the hands of every employee that chooses to participate.

American's home computer program is an employee empowerment initiative that also makes business sense. Computer skills are an essential component of almost every function within the airline industry. American Airlines and American Eagle operate and maintain 970 aircraft serving 243 cities with 4,100 daily departures throughout the world. Together, we employ over 110,000 people. In light of the scope and complexity of our industry, you can see that a technically skilled workforce is vitally important to our success. As you might expect, we rely heavily on advanced technology to run sophisticated reservation, flight and revenue management and maintenance systems, which are continuously modified and upgraded. Obviously, a workforce skilled in tomorrow's technology will contribute greatly to American's primary goal of delivering the highest quality customer service.

In addition to supplying the hardware, American is developing an intranet portal, which will provide an unprecedented opportunity to facilitate effective and timely communication between the company and its employees on issues ranging from company and industry news, corporate policies, surveys, safety issues, on-line training, scheduling flight crew assignments, accessing human resource and benefit information, and leveraging emerging e-business opportunities currently under development.

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Chairman HOUGHTON. Thanks, Mr. Salamon. I would like to turn the proceedings over to Mr. Coyne for some questions.

Mr. COYNE. Thank you, Mr. Chairman. Mr. Bean, you indicated that we have to train more IT workers here in this country as opposed to reaching overseas, not that we are going to refrain from doing that, but we must begin here at home. I would like to know what level of achievement educationally must a candidate for this training have already achieved.

Mr. BEAN. Do you mean what level of education prior to entering the industry?

Mr. COYNE. Yes. Right.

Mr. BEAN. Thank you. One of the interesting things about our industry is that it is extremely egalitarian. The technology changes at such a rapid pace that it has more to do with a person's willingness and aptitude to embrace the technology and learn how to use it than it does to actually have to have reached any particular formal status in our education process.

Many of the certification programs that we sponsor, programs such as CompTia's A-Plus program are specifically designed to take entry-level workers who often have very limited formal education and allow them to take advantage of the new economy by giving them the just-in-time, industry level, pragmatic training that they need to actually be very relevant to our economy, to actually be able to implement the technology that is out there.

So, in short an answer to your question is that more than just about any other industry, IT technology relies more on the inherent skills, aptitude and desire of the individual than any formal level of qualification earned.

Mr. COYNE. Thank you. Mr. Hester, why aren't enough of our students being trained to fill the positions that are now being offered to H1B candidates?

Mr. HESTER. Representative Coyne, I think there are a number of reasons why they are not. One is that those folks who have the aptitude and the abilities necessary to acquire these skills are, in today's robust economy, earning a living someplace else and they are not prepared to come out of that, to come into a training program like Community College of Allegheny County operates in order to acquire those skills at the loss of their ability to put food on the table.

One of the ways that we try to address that is to work with businesses to have a cooperative arrangement with them—that they bring folks that have these kinds of aptitudes, aptitudes that we have tested for, into their businesses and begin to work and work

with us to provide technical training for them, to update their skills while they also learn on the job. This is an expensive proposition for businesses to engage in and we have not developed a tremendous amount of capacity through that, but that is one of the reasons why we have not been able to fill these needs, because we cannot attract people with the necessary aptitude out of already-paying jobs.

The second is we have difficulty in attracting the necessary instructional faculty in these areas. These folks are very expensive nowadays. Those that already have the ability to work in this marketplace are drawing a very high salary and our salary limitations, to some extent, prevent us from attracting them into our educational environment to teach. Something that would be helpful to us is any kind of mechanism that would make it more attractive for businesses to place their employees on loan to us for a period of time, to allow us to train—work in partnership with them to train those necessary production level workers within the salary structure we have to live with.

Mr. COYNE. Thank you very much. Thank you, Mr. Chairman.

Chairman HOUGHTON. Thank you, Mr. Coyne. Mr. Weller?

Mr. WELLER. Well, thank you, Mr. Chairman. I think this first panel has been very, very helpful as we talk about the important role of education and skills training in technology. I think one thing I have certainly seen, since this is the second part of a two-day set of hearings, is how the Tax Code has an impact particularly on global competitiveness as we compete with our Asian and European competitors to attract technology jobs. Clearly, the Tax Code, as well as our investment in education, is going to make a big difference.

It is interesting when we talk about statistics a lot and there are almost 5 million Americans today employed in the technology sector. Technology-sector wages are about 70 percent higher than the traditional private sector jobs, so there is a lot of opportunity. But at the same time, even though there is a tremendous number of Americans employed in technology, we are having a hard time filling all the positions.

Mr. Bean, you noted in your testimony, referring to a study that was done this past year, that almost one out of 10, 10 percent of IT worker positions, are unfilled. Currently, almost 270,000 jobs, right now, are unfilled and it certainly has a big impact on our economy with the loss of productivity and creativity, as well as worker productivity. That same study, I believe you noted, indicated that next year we are going to need 1.6 million new workers and that, unless we adjust this worker shortage, that half of those jobs will go unfilled. Obviously, the H1B visa issue, and of course I am a supporter and co-sponsor of David Dreier's bill, is a short-term solution.

But I believe I know, as you do, Mr. Bean, that the long-term solution is investment in skills training and education. I wanted to ask you, Mr. Bean, why is the skills investment so important as we look at global competitiveness? You indicated your company does certification not only in the United States, but in Asia and Europe as well, so you are dealing with our competitors. But from an

American standpoint, from our own parochial interest, why is skills investment so important?

Mr. BEAN. Thank you. I think it was best summed up by Chairman Greenspan in his Humphrey Hawkins testimony, where he really described what is fueling our economy today, that this IT revolution is what is fueling it largely. When we look at the magnitude, as you just summed us for us then, Congressman, of the shortage that faces us, I do not believe there is any other single threat to our competitors on the global stage as big as our shortage of IT workers. This industry, as you know, is summed up in this hearing and in setting this hearing up, used to largely be about the hardware and software in the IT industry. But the global stage has shifted.

The hardware and software now is nowhere near as important as what I talk about as the brainware in our industry—that those economies that are going to do best in their ability to compete on the global stage are not those that have the economic wherewithal to invest in the hardware and software, as much as those that have their people skilled and educated, to be able to translate that at an individual level to an enduring competitive advantage, but on the global stage, for America, into an enduring competitive advantage.

The workforce shortage that we have in the IT industry is not an American phenomenon, it is a global phenomenon. My fear for America is that unless we take steps right now to put the training where we need it, to skill the American workers, to help the private sector embrace the technology fairly rapidly, due to the rate of change of technology, we are going to slip behind in our ability to remain the leader in the IT industry, something that we should all be very proud of and we should not let slip away, because as Chairman Greenspan said, that is what is fueling our economy today; that is what will fuel our economy going forward and the greatest asset we have in remaining competitive on a global stage is our investment in our people to embrace that technology.

Mr. WELLER. Well, you testified in support of our bipartisan legislation, the Technology Education Training Act, which provides a tax incentive to attract investment in skills training and investment in people.

Mr. BEAN. Yes.

Mr. WELLER. Why do you believe a tax incentive is the best way to encourage this type of investment in skills training and solve this problem?

Mr. BEAN. I think it is because it puts the private sector in a position to be able to embrace the training that they need to remain competitive. It is extremely pragmatic. It is going to allow them to, as they have done a pretty good job of in the past, adopt those types of education and training programs that they need to remain competitive.

The rate of change in technology is such, as was, I thought, very well summed up by my colleague to my right, such that you have got to do something different. Formal academic institutions cannot keep pace with technology that changes on average every six months. It also gives the private sector the opportunity, though, to reach out to those workers that, quite frankly, want their piece of the new economy.

You know, if you think about workers needing to cross the digital divide, as is characterized by all of us in the various pieces of legislation before us, their ability to be able to cross that digital divide is largely a function of our ability to give them the necessary training that they need to be relevant inside the organizations that they work for, both in the public and the private sector.

I believe that the implementation of a tax credit will give us and give our economy the ability to put the training spend (sic.) where it will do the most for our competitiveness on a global level.

Mr. WELLER. Thank you, Mr. Bean. I see, Mr. Chairman, that my time has expired. I do have some questions for Mr. Salamon. If there is a second round of questions, I would like to ask Mr. Salamon questions after my colleagues complete their first round of questioning.

Chairman HOUGHTON. All right. Why don't I cut in here and then maybe Ms. Dunn would like to ask a question and then we will go around for a second round. The concept of tax credits is a dicey one for us because we keep loading up tax credit. The President says that we should not use tax credits and then all of a sudden we have 28 or 30 or 40 or 50 suggestions as far as tax credits and it really complicates the code.

I can understand, and this is to all of you really, the use of tax credits where the incentive is absolutely essential. For example, I think, Mr. Hester, you said something about front-line hourly wage workers in the technical field. I think that is probably a pretty good idea. I am just talking for myself. When it comes to middle-or upper-management, clearly the success of most of these companies in the information technology area is that they have training programs themselves.

They just bite the bullet and they do it, but it doesn't get all the way down. So, the question is how far should those tax credits go in the organization? Maybe, Mr. Hester, you would like to answer it, and Mr. Bean, and also Mr. Salamon, just as far as you are concerned, I would like to find out really sort of what percentage of the people you think would be using these computers, and also would they be used for business as well as home use. So, why don't we start with you, Mr. Hester?

Mr. HESTER. It is difficult for me to speak to the general question of how far up in the organization—that is the way I would put it—these kinds of tax credits should extend. Clearly from our perspective, from the community college perspective, where we are involved in and engaged in trying to fill the production-floor level kinds of jobs that are most needed by all kinds of industries and where the real shortage of personnel exists, it is in attracting those folks into those training programs, whether they are inside a corporation or in our institutions exclusively, that we think a tax credit would be very beneficial.

Again, there are other incentives that are very attractive on a normal kind of personal level for individuals and businesses at higher levels of employment to work on maintaining and sustaining their skills, but the problem of filling available jobs at the production floor level is one that we are all struggling with and that requires getting folks into the human capital development pool, out of the working environment, and we think a tax credit would be

very positive for them. And certainly, if it didn't extend any farther, we would certainly hope you would consider that.

Chairman HOUGHTON. So, the question is to take the front-line workers, to get them there and then to keep them there? Mr. Bean?

Mr. BEAN. I think the question is best answered at two levels. I think in addition to looking at how far down in an organization this tax credit should apply to training, but also across the industry sectors in terms of the size of the companies. By 2002, the U.S. Department of Labor estimates that over half of U.S. workers will require some type of IT skills training. I actually believe that that is a conservative estimate. I think that it will be more than half.

If you think about that, that means the answer to your question, Congressman, is that just about every level in the organization should be able to take advantage of IT training. The reasons for that are many. If we look at the rate of change inside all organizations, not just the IT sector but any company that seeks to embrace technology to remain competitive, and what we have seen over recent years with the proliferation of the Internet through organizations and the ability for every worker to tap into the information they need to do their job, I think the answer is that every worker of the future needs to be able to take advantage of IT training to remain individually competitive, but also competitive in the economy.

Chairman HOUGHTON. No, I agree. It is just that the question is how far down does the Government get into the process?

Mr. BEAN. Sorry. How far down does the Government get into the process of the tax credit? I think that the more flexible that we can be in actually allowing organizations to make the decisions of what IT training they need to be competitive is the right answer to that question. I think the more broad-ranging we can be with the tax credit to allow the money to be put where it is going to be of greatest advantage is where we need to head.

Chairman HOUGHTON. Thanks very much. Mr. Salamon?

Mr. SALAMON. Thank you, Mr. Chairman. In response to your question, so far we have distributed about 40 percent of the enrollment kits to our workforce. So, in essence, 40 percent of the workforce now has the ability to enroll in the program. Sign-ups at this point have been about 70-to–80 percent and we contemplate that upwards of 90 percent of eligible participants are going to take advantage of this program. It has been met with a lot of enthusiasm.

These computers will be used at home. They will be used outside the workplace. From our standpoint, clearly there is going to be some personal benefit here, but the compelling business motivations for us to do this clearly outweigh any personal benefit that employees might have.

Chairman HOUGHTON. They would probably be used at home and not in the business place.

Mr. SALAMON. Not in the business place itself.

Chairman HOUGHTON. Thanks very much. Ms. Dunn, would you like to ask questions?

Ms. DUNN. Thank you very much, Mr. Chairman.

Mr. Bean, you talked about the certification process. Could you explain the certification process to us? If you are certified in one State, are you automatically certified in another State?

Mr. BEAN. Thank you for the question. Yes, the certification process is actually one of the truly portable qualifications in the world, in the IT industry, which is what we are speaking about specifically today. The test that somebody would pass in my State of Maryland versus the test that somebody would pass in California, because it is all delivered via a computer, is exactly the same. And so the qualification itself is not only transportable across States, but also national frontiers, as well.

Ms. DUNN. Would you just run through what it involves?

Mr. BEAN. Sure. The process is largely the combination of learning and then testing, the certification really being the outcome of the learning. The way an individual can learn to be qualified to take an IT certification is very laissez-faire. You can learn either through self-study on the job, by attending formal classroom training, attending Web-based online learning and the certification exam itself, which takes place in a secure testing center on a computer terminal that asks you a series of questions that are simulation-based, multiple-choice, true-false, scenario-driven, are then the final outcome on which the certification is granted by either the industry association such as CompTia, or for that matter vendors such as Microsoft, Novell, Computer Associates, et cetera.

Ms. DUNN. Also, Mr. Bean, could you tell us, is the worker training credit in place of Section 127 or is that in addition to Section 127?

Mr. BEAN. Thank you. Sorry for having to check. It is in addition, ma'am.

Ms. DUNN. Thank you very much.

Chairman HOUGHTON. Mr. Weller?

Mr. WELLER. Thank you, Mr. Chairman. Thank you for the courtesy or the opportunity to do a second round of questioning. I would like to direct a few questions to you, Mr. Salamon. There are always interesting statistics. You have 100 million Americans today that are online. Seven million Americans go online for the first time every second and so there is a tremendous opportunity for working Americans to gain information and participate in the new economy in many ways.

But if you look at other statistics you note that households with incomes of 75,000 or more are 20 times more likely to have a computer or Internet access at home. Educators tell me they notice the difference in the classroom between kids who have a computer and Internet access at home and those who do not and the ability of children to do their homework and schoolwork and do work on a school paper. And that is why I really want to salute American Airlines, as well as Ford, Intel and Delta Airlines, for stepping forward in providing computers and Internet access is a solution to that challenge. That is 600,000 families as a result of your company and three others.

I know with Ford Motor Company, almost 5,000 families in my district will benefit from what Ford Motor Company is doing. But, as a result of your initiative, everyone from the laborer, the assembly-line worker, the baggage handler, the flight attendant, all the way up through management, their children will now have computers and Internet access at home to do their homework, and that is

why I want to thank you for your company's leadership in doing this.

I also want to thank you for bringing one of your fine workers with you, Tom Thompson, who I understand is employed out at Dulles airport. You do a great job. I have flown in and out of there on American Airlines and appreciate the good work you do as an example of an employee that would benefit. It is my understanding that unless our legislation is passed and signed into law, the IRS could impose a tax on workers for receiving employer-provided computers and Internet access.

Our estimates from our staff analysis would estimate that a worker making about $27,000 a year would pay about $200 in taxes if they choose to accept these computers and Internet access. And, for a worker making 27,000, 200 bucks is a lot of money. It is real money for working people. Mr. Salamon, let me just ask a few basic questions of you. Tell me how many American Airlines employees have actually received computers as a result of your initiative. I know you have indicated you are going through the sign-up process. Are they actually receiving computers and Internet access in their home at this time?

Mr. SALAMON. Many of the employees that have signed up receive it within the same week. Forty percent of the workforce now has the forms to sign up and it is going like gangbusters. There is a six-month window really to sign up, but the reaction up front has just been tremendous. The phones are ringing off the hook.

Mr. WELLER. So, there is a lot of enthusiasm. Because of this tax issue, I know I had spoken with one of your other employees and they said there is a little bit of buzz among the employees. They had heard the Department of Treasury, the IRS, may tax their computer benefits. Have you had concerns expressed to you by employees?

Mr. SALAMON. Yes, sir. In our focus groups, that was a concern that was discussed right up front as we mentioned the possibility of a tax on distributing the computers, and the indications from them were that they would have to take that into account in whether or not this was something they want to participate in or whether they really could afford to.

Mr. WELLER. Have employees expressed hesitancy, been hesitant about accepting these computers because a worker making $27,000 would have to pay $200 in taxes? Have some said they would probably not accept it because of that concern for the taxes?

Mr. SALAMON. In our original focus groups, that was a concern.

Mr. WELLER. Have you had other companies that have expressed interest in providing this type of benefit to their employees? Have they consulted with you about potentially doing this and expressing concern regarding this potential tax consequence?

Mr. SALAMON. Yes, Mr. Weller, aside from the companies that you mentioned, we have been contacted by three or four companies that are exploring this as a possibility and also are concerned about the tax issue and wanted to consult with us on where we were on the tax issue.

Mr. WELLER. Of course, one of the initiatives when Representative Lewis and I joined together to offer this bipartisan legislation to clarify the tax treatment of employer-provided computers and

Internet access—of course, we would like to see it treated the same as an employer contribution to a pension benefit or an employer contribution to a health care benefit. And we believe it is good policy to eliminate the digital divide and, of course, because of your company's leadership and the others that are moving forward on this, we now have an opportunity essentially for universal access for every working American that is employed by American Airlines or other companies, to have access to the Internet and, of course, the opportunity that it provides.

From an, essentially, if I can use the term, quality-control standpoint, what type of conditions do you have for the employees on their ability to use these computers to ensure the computer stays in the home and doesn't wander off, if the employee is terminated or decides to leave their position? What types of controls do you have?

Mr. SALAMON. The way we are implementing our program, and each program obviously is going to be different, but the way American's program works is the computers are theirs. There is a significant co-payment that they are making in their participation in the program. The computers are theirs. We anticipate that they are going to make good use of the computers. There will be some personal use. Clearly there is going to be business use that is going to benefit both them and us in the long run.

In terms of other controls, we have the policies in place about responsible behavior with computers, but there is no monitoring going on. We have a lot of trust in the workforce. This is an initiative of faith that really is for their benefit in the long run and we trust that they will use it appropriately.

Mr. WELLER. Just a final quick question. Would these employees be able to use these computers obviously to access their employee benefits, see where their pension is or if they have questions regarding their health benefits? Is that the type of use that they could use them for?

Mr. SALAMON. That is absolutely part of the game plan. They will have a whole host of information available right through our Internet site. They will be able to customize their own personal Internet site for workforce information that is particularly relevant to them and they will have continuous access and it will be a great way for us to communicate back and forth very effectively.

Mr. WELLER. Thank you, Mr. Salamon, and thank you for bringing Tom Thompson, one of your workers from Dulles airport with you today, too, as well. But thank you for your time in participating. Mr. Chairman, thank you.

Chairman HOUGHTON. Thank you very much. Ms. Dunn?

Ms. DUNN. I think we have got an outstanding panel here and I want to take advantage of your creativity by asking you a question that is very basic to a lot of us in the Congress now. In the last couple days, we have read about the number of teachers that are going to be retiring over the next few years and, at the same time, we have read a lot about baby boomers with technology backgrounds who are thinking about taking early retirement to do something else. I am a former IBM systems engineer. What kind of tax incentives and educational incentives would you like to see or would be effective in recruiting people with technology back-

grounds to go into teaching so that they can truly develop a group of young educated people who will be able to have good technology skills as they graduate from high school college? Any thoughts?

Chairman HOUGHTON. Don't all speak at once.

Mr. BEAN. It is a very good question, and obviously the teacher shortage is, from an educational perspective and as a parent, is going to be a significant challenge for all of us on a global stage when we just talk about broad learning competitiveness, as well. As I sit here as somebody like you, who came up through the IT education industry, in the IT industry, I think what would take for me to be up to go back and do that—I think the types of incentives that are going to be important is firstly a recognition, as it was summed up before, that when you look at the delta that exists between what is paid to our teachers in the IT arena to actually impart those skills versus what is earned in the private sector, I think there is going to have to be something done for teachers just to stay in place. For those that aren't looking to leave their particular profession, what are we going to do for them to actually stay in place as teachers rather than to be poached by HR managers looking to fill their depleted ranks inside corporate America, as well? So, in terms of tapping into the creativity today, I would say we need to first of all address the incentives for the teachers to stay put, and I hate to say it, but I can only think that thing has to start with economic incentives, given the disparity that exists between what IT teachers are paid versus what they can earn in the private sector by moving into system engineer-type roles.

Secondly, to attract those people back into teaching, which I think is something that many of them would be extremely interested in doing, what we need to take a look at is to make sure that our taxation system does not unduly penalize them for wanting to impart those skills to young people or people of all levels. So, instead of necessarily putting incentives in place, let's revisit our taxation system to make sure that if you or I sought at our point of retirement, which these days can be in our early 40s in the IT industry, that we are not penalized for wanting to go back into the school system and actually give of our expertise to young people so that they can move forward.

Chairman HOUGHTON. All right. Fine. Well, gentlemen, thanks very much. You have been very, very helpful. I would like to call the second panel. Bill Sample, Chairman of the R&D Credit Coalition, Redmond, Washington, Senior Director of Domestic Taxes and Tax Affairs for Microsoft; and Mr. Randall Capps, Corporate Tax Director and General Counsel, Electronic Data Systems Corporation; Linda Evans, Program Director of Taxes and Finance, Governmental Programs, IBM; and Collie Hutter, Chief Operating Officer of Click Bond, Inc., of Carson City, Nevada.

Well, thank you very much for being with us. Mr. Sample, would you begin your testimony?

STATEMENT OF BILL SAMPLE, CHAIRMAN, R&D CREDIT COALITION, REDMOND, WASHINGTON, AND SENIOR DIRECTOR, DOMESTIC TAXES AND TAX AFFAIRS, MICROSOFT CORPORATION

Mr. SAMPLE. Thank you, Mr. Chairman. Mr. Chairman and members of the subcommittee, my name is Bill Sample, Chairman of the R&D Credit Coalition and Senior Director of Domestic Tax and Tax Affairs at Microsoft. I am here today on behalf of the R&D Credit Coalition, which represents 87 professional and trade associations and more than 1,000 U.S. companies. We thank you for focusing on the tax treatment of R&D as part of your hearings on the Tax Code and the new economy and applaud the members of this committee for their continued commitment to a permanent R&D tax credit.

As Chairman Houghton stated when announcing this hearing, the new economy is based on high-tech equipment, intensive research and development and a skilled workforce. The R&D tax credit, according to many Government and private-sector experts, as listed in my written testimony, is a proven, effective means of encouraging increased R&D activity in the United States, which in turn will help provide technology improvements to benefit the economy.

I have spent the last 10 years working in the software industry and strongly believe in the economic and social benefits that result from high-risk investments in technology research. The last 10 years have also been very good for the U.S. economy and the products of technology research have helped create the budget surplus that is currently paying down the national debt. Technology-driven increases in productivity have also created more jobs for U.S. workers. Business Week recently reported on a NABE survey of economists that lowered the estimated maximum sustainable unemployment rate that would not fuel inflation from six percent down to four-and-a-half ½ percent. That 1.5 percent represents a significant increase in available jobs. The R&D credit encourages companies to hire more high-skilled, high-paid workers to fill those jobs.

I would like to underscore the ripple effects of the economic success created by technology research on a more individual level. Whether it is the $18 million donated by Microsoft employees to the United Way in 1999, the software and hardware donated to schools and non-profits by our employees and our business partners, the educational software my two children use at home and at school or the e-mail and Internet technology that enables my wife to be den mother for my six-year-old son's Tiger Cub Troop, the economic and social benefits of technology are helping many people improve their lives. These stories are repeated over and over again in the 1,000 companies that make up the R&D Credit Coalition.

This committee plays a critical role in overseeing that the U.S. Treasury and Internal Revenue Service properly administers the law consistent with congressional intent. As the person responsible for much of Microsoft's tax compliance, I can tell you that regulations and other administrative guidance often have more impact on our tax liability than the statutory language.

In recent years, the U.S. Treasury and IRS have administered the R&D credit rules in such a way as to attempt to significantly

reduce the scope of research activities eligible for the R&D credit. Despite clear guidance provided by Congress and the committee report language accompanying the 1998 and 1999 extensions of the R&D credit and separate letters from committee members to Treasury, the IRS continues to apply the discovery test, common-knowledge test and process-of-experimentation requirements of its proposed regulations defining eligible research pursuant to IRC Section 41(d) in its examination of taxpayers.

Recently, a court admonished the IRS for taking positions that were clearly unsupported by the law. In Tax and Accounting Software Corporation versus the United States, the court rejected the IRS-proposed discovery and common-knowledge tests. The court held the IRS's, and I quote, "Construction of the statutory language would be a strained and improper reading without any support in the legislative history to back it up, and further the IRS is completely missing the fact that Congress intended to encourage commercial research through the enactment of the R&D credit."

With respect to the process of experimentation requirements in the proposed regulations, the Tax Court found that, and I quote, "The highly-structured definition of research which is proffered by the IRS in its regulations makes it virtually impossible for commercial research to qualify through the Section 41 credit, which was clearly not the intention of Congress.

In conclusion, we should seize on the opportunity we have to take at least one critical positive step towards a 21st-century Tax Code. Make the R&D credit permanent. Thank you and I am happy to take questions.

[The prepared statement follows:]

Statement of Bill Sample, Chairman, R&D Credit Coalition, Redmond, Washington, and Senior Director, Domestic Taxes and Tax Affairs, Microsoft Corporation

Mr. Chairman and members of the subcommittee, my name is Bill Sample, Chairman of the R&D Credit Coalition and Senior Director of Domestic Taxes & Tax Affairs at Microsoft. I am here today on behalf of The R&D Credit Coalition, which represents 87 professional and trade associations and more than 1,000 U.S. companies. We thank you for focusing on the tax treatment of research and development as part of your hearings on the tax code and the new economy and applaud the members of this subcommittee and the full Ways and Means Committee for their continued commitment to a permanent R&D tax credit. Last year as part of the Tax and Trade Extension Act of 1999, this important tax credit was extended for five years, through June 30, 2004, and a modest increase in the Alternative Incremental Research Credit was adopted. We look forward to working with you to finish the job and make the R&D credit permanent.

This testimony will focus on: (1) the importance of making the R&D credit permanent; and (2) the need to address growing controversies in the administration of the R&D credit caused by positions taken by the Department of the Treasury and the IRS in examination, litigation, and the proposed R&D regulations.

As the Committee members consider how well the tax code is "keeping pace" with the new economy we urge you to encourage tax policies that will fuel the U.S. economy, keeping American companies and their workers prosperous and competitive in the changing global marketplace. Without a growing economy, Americans' standard of living, and our ability to support the needs of our aging population, will be in jeopardy. Faced with a static or decreasing workforce as U.S. demographics shift, U.S. lawmakers must focus on encouraging technology development to increase productivity, enabling a smaller workforce to support a growing population of retirees.

As Chairman Houghton stated when announcing this hearing, "the 'new economy' is based on high-tech equipment, intensive research and development, and a skilled workforce." We could not agree more. Increased technology development will help to ensure sustained economic growth and the prosperous environment needed to

continue to improve our standard of living for current and future generations of Americans. U.S. tax law should promote technology development in the U.S., and the most effective way to do that is through a *permanent R&D tax credit.*

The R&D tax credit, according to many government and private sector experts, is a proven, effective means of encouraging increased research and development activity in the United States, which in turn will help provide the technology improvements to benefit the economy.

In 1998, Coopers & Lybrand (now PricewaterhouseCoopers), an accounting firm, completed a study, *Economic Benefits of the R&D Tax Credit*, (January, 1998) that dramatically illustrates the significant economic benefits provided by the credit. According to the study, making the R&D credit permanent would stimulate substantial amounts of additional R&D in the U.S., increase national productivity and economic growth almost immediately, and provide U.S. workers with higher wages and after-tax income.

There is a significant body of other evidence produced by the General Accounting Office, Bureau of Labor Statistics, National Bureau of Economic Research, and others, that likewise conclude that this credit represents a very sound investment in U.S. economic growth. As we enter the 21 st century with a projected budget surplus and continued economic promise, now is the time to make a long-term commitment to U.S. research and development and to make the R&D credit permanent.

I. THE R&D CREDIT

A. BACKGROUND

As an incentive for companies to increase their U.S. R&D activities, Congress first enacted the R&D credit in 1981. The credit as originally passed was scheduled to expire at the end of 1985. Recognizing the importance and effectiveness of the provisions, Congress decided to extend it and continued to extend it on at least nine subsequent occasions. In addition, the credit's focus has been sharpened by limiting both qualifying activities and eligible expenditures. With each extension, the Congress indicated its strong bipartisan support for the R&D credit.

In 1986, the credit lapsed, but was retroactively extended and the rate cut from 25 percent to 20 percent. In 1988, the credit was extended for one year, but its effectiveness was reduced by decreasing the deduction for R&D expenditures by 50% of the credit. In 1989, Congress extended the credit for another year, again reduced the effectiveness of the credit by decreasing the deduction for R&D expenditures by a full 100% of the credit, and made changes that were intended to increase the incentive effect for established as well as start-up companies. In the 1990 Budget Reconciliation Act, the credit was extended again for 15 months through the end of 1991. The Tax Extension Act of 1991 extended the credit again, through June 30, 1992. In OBRA 1993, the credit was retroactively extended through June 30, 1995.

In 1996, as part of the Small Business Job Protection Act of 1996, the credit was extended for eleven months, through May 31, 1997, but was not extended to provide continuity over the period July 1, 1995 to June 30, 1996. This one-year period, July 1, 1995 to June 30, 1996, was the first gap in the credit's availability since its enactment in 1981.

In 1996, the elective Alternative Incremental Research Credit ("AIRC") was added to the credit, increasing its flexibility and making the credit available to R&D intensive industries that could not qualify for the credit under the regular criteria. The AIRC adds flexibility to the credit to address changes in business models and R&D spending patterns that are a normal part of a company's life cycle.

The Congress next approved a thirteen-month extension of the R&D credit that was enacted into law as part of the Taxpayer Relief Act of 1997. The credit was made available for expenditures incurred from June 1, 1997 through June 30, 1998, with no gap between this and the previous extension. In the Tax and Trade Extension Act of 1998, the Congress approved a one-year extension of the credit, until June 30, 1999. In 1999, the credit was extended until June 30, 2004, and a modest increase in the AIRC rates was adopted that will bring the AIRC's incentive effect more into line with the incentive provided by the regular credit to other research-intensive companies.

According to the Tax Reform Act of 1986, the R&D credit was originally limited to a five-year term in order "to enable the Congress to evaluate the operation of the credit." While it is understandable that the Congress in 1981 would want to adopt this new credit on a trial basis, the credit has long since proven over the 19 years of its existence to be an excellent investment of government resources to provide an effective incentive for companies to increase their U.S.-based R&D. Recently released corporate data show significant increases in total qualified research eligible

for the credit. The credit is working, and we should underscore its effectiveness by making it permanent.

The historical pattern of temporarily extending the credit, combined with the first gap in the credit's availability, reduces the incentive effect of the credit. The U.S. research community needs a stable, consistent R&D credit in order to maximize its incentive value and its contribution to the nation's economic growth and sustain the basis for ongoing technology competitiveness in the global arena. While a five year extension of the credit is helpful, Congress should make the R&D credit permanent.

B. THE IMPORTANCE OF AN R&D CREDIT

1. Productivity Growth

It is well recognized that "[m]uch of the growth in national productivity ultimately derives from research and development conducted in private industry." *See,* Office of Technology Assessment (1995). Sixty-six to eighty percent of productivity growth since the Great Depression is attributable to such innovation. In an industrialized society R&D is the primary force driving technological innovation. Moreover, since companies cannot capture fully the rewards of their innovations (because they cannot control the indirect benefits of their technology on the economy), the rate of return to society from innovation is twice that which accrues to the individual company.

Economists and technicians who have studied the issue agree that the government should intervene to increase R&D investment. In a study conducted by the Tax Policy Economics Group of Coopers & Lybrand (now PricewaterhouseCoopers), it was found that ". . .absent the R&D credit, the marketplace, which normally dictates the correct allocation of resources among different economic activities, would fail to capture the extensive spillover benefits of R&D spending that raise productivity, lower prices, and improve international trade for all sectors of the economy." Stimulating private sector R&D to drive national productivity growth is particularly critical in light of the decline in government funded R&D over the years.

2. Global Competitiveness

Private sector U.S.—based R&D is critical to the technological innovation and productivity advances that will maintain U.S. leadership in the world marketplace. Since 1981, when the credit was first adopted, there have been dramatic gains from R&D spending. Unfortunately, our nation's private sector investment in R&D (as a percentage of GDP) lags far below many of our major foreign competitors. For example, U.S. firms spend (as a percentage of GDP) only one-third as much as their German counterparts on R&D, and only about two-thirds as much as Japanese firms. This trend must not be allowed to continue if our nation is to remain competitive in the world marketplace.

Foreign governments are competing aggressively for U.S. research investments by offering substantial tax and other financial incentives. Even without these tax incentives, the cost of performing R&D in many foreign jurisdictions is lower than the cost to perform equivalent R&D in the U.S. According to an OECD survey, the U.S. R&D tax credit as a percentage of industry-funded R&D was third lowest among nine countries analyzed. In order for U.S. businesses to remain competitive in this global environment, the R&D credit must remain in place on a permanent basis.

3. Reduced Cost of Capital

The R&D credit reduces the cost of capital for businesses that increase their R&D spending. This results in more capital being available for innovative ventures that would otherwise not be undertaken because of risks involved with the project. When the cost of R&D is reduced, the private sector is likely to perform more of it. In most situations, the greater the scope of R&D activities, or risk, the greater the potential for return to investors, employees and society at large. By lowering the economic risk to companies seeking to initiate new research, the R&D credit will potentially lead to enhanced productivity and overall economic growth.

4. Cost Effective Tool to Encourage Economic Growth

A number of economic studies[1] of the credit have found that a one-dollar reduction in the after-tax price of R&D stimulates approximately one dollar of additional private R&D spending in the short-run, and about two dollars of additional R&D in the long run. The Coopers & Lybrand study estimated that a permanent extension of the R&D credit would create nearly $58 billion of economic growth over the

[1] These include the Coopers & Lybrand 1998 study, the KPMG Peat Marwick 1994 study, and the article by B. Hall entitled: "R&D Tax Policy in the 1980s: Success or Failure?" *Tax Policy and the Economy* (1993).

1998–2010 period, including $33 billion of additional domestic consumption and $12 billion of additional business investment. These benefits stem from substantial productivity increases that could add more than $13 billion per year of increased productive capacity to the U.S. economy. Accordingly, studies confirm that one of the most cost effective tools of encouraging economic growth would be the enactment of a permanent R&D credit.

5. Job Creation

Dollars spent on R&D are primarily spent on salaries for engineers, researchers and technicians. When taken to market as new products, incentives that support R&D translate to salaries for employees in manufacturing, administration and sales. Of exceptional importance to many members of the R&D Credit Coalition, R&D success also means salaries to the people in our distribution channels who bring our products to our customers as well as service providers and developers of complementary products. And, our customers ultimately drive the entire process by the value they place on the benefits from advances in technology (benefits that often translate into improving their ability to compete and lower prices for consumers). By making other industries more competitive, research within one industry contributes to preserving and creating jobs across the entire U.S. economy. The R&D credit and investment in R&D is ultimately an investment in people, their education, their jobs, their economic security, and their standard of living.

The R&D credit is available to all qualifying taxpayers

Any taxpayer that increases their U.S. R&D spending and meets the technical requirements provided in the law can qualify for the credit. By utilizing the R&D credit, businesses of all sizes, and in all industries, can best determine what types of products and technology to invest in so that they can ensure their competitiveness in the world marketplace. As such, the R&D credit is a meaningful, market-driven tool to encourage private sector investment in research and development expenditures in the U.S. that should be made permanent.

II. The R&D Credit should be made permanent

In order to achieve the maximum incentive effect, the R&D credit should be made permanent. As recently recognized by the Joint Committee on Taxation, "[i]f a taxpayer considers an incremental research project, the lack of certainty regarding the availability of future credits increases the financial risk of the expenditure." See, Description of Revenue Provisions in the President's Fiscal Year 2000 Budget Proposal (JCS–1–99). Research projects cannot be turned off and on like a light switch and generally represent multi-year commitments; if corporate managers are going to take the benefits of the R&D credit into account in planning future research projects, they need to know that the credit will be available to their companies for the years in which the research is to be performed. Research projects have long horizons and extended gestation periods. Furthermore, firms generally face longer lags in adjusting their R&D investments compared, for example, to adjusting their investments in physical capital.

In the normal course of business operations, R&D investments take time and planning. Businesses must search for, hire, and train scientists, engineers and support staff, and in many cases invest in new physical plants and equipment. There is little doubt that some of the incentive effect of the credit has been lost over the past nineteen years as a result of the constant uncertainty over the continued availability of the credit. This must be corrected so that the full potential of its incentive effect can be felt across all sectors of our economy.

In order to provide for the maximum potential for increased R&D activity, and for the government to maximize its return on tax dollars invested in the credit, the practice of periodically extending the credit for short periods, and then allowing it to lapse, must be eliminated, and the R&D credit must be made permanent.

III. Problems with the proposed R&D regulations and growing controversies in the Administration of the R&D Credit

The economic benefits of permanently extending the R&D credit will be significantly reduced, however, if the credit is administered by the government in a manner contrary to the intent of Congress. Improper implementation and administration of the law could reduce the credit eligibility of legitimate research activities. Despite the broad support for this tax incentive, and additional guidance by the Congress on the proper administration of the credit (e.g., legislative history and letters), there remain significant problems with the manner in which the IRS administers the law and interprets the application of R&D credit eligibility rules to corporate research

activities. Many of these problems are the direct result of positions taken by the Administration in regulations interpreting the R&D tax credit under Internal Revenue Code section 41 ("the proposed R&D regulations")[2] and in tax examinations and litigation.

The growing controversy created by the proposed R&D regulations has been well known for some time. These regulations attempt to significantly reduce the scope of "qualified research" through the use of a discovery test that turns in part, on a proposed "common knowledge" test. Over four dozen witnesses representing a broad cross-section of businesses and industry raised significant concerns about these proposed regulations in oral and written testimony before the Department of the Treasury and IRS. The public hearing on the proposed regulations was attended by over 100 practitioners and corporate taxpayers. Nearly every witness who testified argued for significant changes to the proposed rules, including the elimination of the proposed "common knowledge" test. Many felt that left unchanged, the proposed "common knowledge" test could cause increased administrative burden and complexity, result in questionable tax increases by eliminating the credit eligibility of many legitimate research projects, and violate Congressional intent for the application of the R&D credit.

As evidenced by the volume and scope of these public comments, the proposed R&D regulations are extremely controversial and have caused great uncertainty for taxpayers and the IRS in the examination process. In addition, recent IRS National Office guidance in the form of a Coordinated Issue Paper ("CIP") relies on concepts from the proposed R&D regulations to support its analysis and holdings. See, Coordinated Issue All Industries Research Tax Credit—Qualified Research (Release Date: August 30, 1999). The CIP incorporates the "common knowledge" test proposed in the regulations almost verbatim and cites it as authority. Even though the regulations are proposed and recognized as controversial, the IRS is currently applying the principles of these proposed regulations to deny credit eligibility.

These problems have also been recognized by the Chairman and other Members of this Committee. As recently as last month, Chairman Bill Archer and Representatives Nancy Johnson and Robert Matsui wrote to Treasury Secretary Summers expressing their concern regarding the administrability of the R&D credit by both the government and taxpayers. In their letter of August 17, 2000, these Members expressed concern about allegations that during the comment period on the proposed R&D regulations, "IRS agents are misapplying the proposed regulations and misinterpreting the clear statutory intent of the definition of qualified research." They went on to emphasize that any final regulations should be consistent with Congressional intent.

In a separate letter dated August 21, 2000, Representatives Johnson and Matsui wrote to Secretary Summers reiterating their concerns by stating the following:

"This reliance by the IRS on proposed rules, which are subject to further administrative actions, evidences a disregard for the administrative rulemaking process and inappropriate tax administration of the statutory provisions of section 41. These actions also reflect the fact that there may not be a full appreciation within the IRS, in both the National and field offices, of the level of concern surrounding the proposed rules from both a policy and practical perspective.

The problems and controversy surrounding the use of a discovery test that incorporates a "common knowledge" test is the result of positions taken by the Department of the Treasury and the IRS in examination, litigation, and the proposed R&D regulations. These problems and controversy are unnecessary, since the test contained in the proposed R&D regulations was never contemplated nor endorsed by Congress as part of the R&D tax credit.

In fact, as part of the conference report to the Ticket to Work and Work Incentives Improvement Act of 1999 (Pub. L. 106–170), Congress urged you "to consider carefully the comments [you] have received regarding the proposed regulations relating to . . . the definition of qualified research under section 41(d), particularly regarding the 'common knowledge' test."[3]

At the time, Congress also reaffirmed "that qualified research is research undertaken for the purpose of discovering new information which is technological in nature;" and that "new information is information that is new to the taxpayer, is not freely available to the general public, and otherwise satisfies the requirements of section 41."[4]

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[2] Prop. Regs. Sections 1.41–1 to 1.41–8, Vol. 63 Fed. Reg. No. 231, 63 FR 66503.

[3] Ticket to Work and Work Incentives Improvement Act of 1999, Conf. Rpt. 106–478, page 132 (Nov. 17, 1999).

[4] Id.

We understand that public comments on the proposed R&D regulations are now being carefully reviewed by your staff and we are encouraged by such actions. At the same time, we remain concerned that during this comment period, IRS agents are misapplying the regulations and/or misinterpreting the clear statutory intent of the definition of "qualified research."

Given the unique nature of these proposed R&D regulations, the genuine controversy reflected in public comments on the issue of the discovery and "common knowledge" tests, and the problems they are causing in the tax examination and audit process, we urge that at the very least the final R&D regulations do not contain a "common knowledge" test or any other rules inconsistent with the Congressional intent as espoused most recently in the legislative history to the Ticket to Work and Work Incentives Improvement Act of 1999. We also urge the Department of the Treasury and the IRS to allow a further public comment period on changes they may be considering on any controversial aspect of the regulations before the regulations are finalized.

Left unchanged and outstanding, any rules that incorporate the "common knowledge" test contained in the proposed regulations will cause more confusion, controversy and administrative burdens, without furthering the underlying legislative intent of the R&D tax credit. We believe such results will harm rather than help the current Administration's efforts to encourage R&D investments and to support the R&D tax credit." *See,* Letter From Representatives Johnson and Matsui to Secretary Summers (dated August 21, 2000)

The R&D Coalition strongly endorses these statements and encourages this committee to pursue any actions available to work with the Department of the Treasury and the IRS to resolve these problems with the proposed R&D regulations.

The proposed R&D regulations also go beyond legislative intent in their proposed definition of "process of experimentation," and implication of an additional record keeping requirement in order to qualify for the credit. The proposed regulations take an inappropriate academic view in defining the phrase "process of experimentation" and add requirements not present in the underlying statute. In addition, the proposed regulations appear to add a new substantiation requirement (in the form of a rule that seems to require contemporaneous recording of the results of experiments) into the basic definition of qualified research. Both positions are inconsistent with and beyond the legislative history underlying the R&D credit.

Recently, a court admonished the use by the IRS of positions that were clearly unsupported by the law. In *Tax and Accounting Software Corp. v. U.S.*, N.D. Okla. (July 31, 2000), the court rejected the IRS's proposed "discovery" test and the opinions of the courts in *Norwest Corporation and Subsidiaries v. Commissioner of Internal Revenue*, 110 T.C. 454 (1998) and *United Stationers, Inc. v. United States*, 982 F. Supp. 1279 (N.D. Ill. 1997), *affirmed* 163 F.3d 440 (7th Cir. 1998) that relied on a "discovery test" to qualify for the R&D credit. The court held that "that construction of the statutory language would be a strained and improper reading without any support in the legislative history to back it up." *Tax and Accounting Software Corp. v. U.S.*, Order (p. 9).

The court went on to find that "there is no support" in the statute or legislative history for the position contained in the proposed R&D regulations that requires "obtaining knowledge that exceeds, expands, or refines the common knowledge of skilled professionals in the particular field of technology or science." It further said that "the IRS is completely missing the fact that Congress intended to encourage commercial research" through the enactment of the R&D credit. Id. at p.14.

Importantly, the court concluded by stating that "[T]he highly structured definition of research which is proffered by the IRS in its regulations makes it virtually impossible for commercial research to qualify for the section 41 credit, *which was clearly not the intention of Congress.* Id. at p. 14 (emphasis added).

Despite these obvious controversies with the regulations and the unsupported positions taken by the IRS in the proposed R&D regulations, in examination and in litigation, there is no indication that changes are being instituted to correct these glaring problems. We therefore, encourage you and this committee to take all actions necessary to ensure that the R&D credit incentive, which is so valuable to our national economy, is not undermined by the regulators that implement this law.

IV. Conclusion

There is a unique opportunity in this time of economic prosperity to take a thoughtful look at whether our tax laws are a help or hindrance to sustained growth and the competitiveness of U.S. businesses. We should seize on the opportunity we have to take at least one critical positive step toward a 21st century tax code—make the R&D Credit permanent.

Private sector R&D in the U.S. stimulates investment in innovative products and processes that greatly contribute to overall economic growth, increased productivity, new and better U.S. jobs, and higher standards of living in the United States. Moreover, by creating an environment favorable to private sector R&D investment in the U.S., jobs will remain in the United States. Investment in R&D is an investment in people. A permanent R&D credit is essential for the United States economy in order for its industries to compete globally, as international competitors have chosen to offer direct financial subsidies and reduced capital cost incentives to "key" industries.

Finally, in order to ensure that these objectives are met, the R&D credit laws must be administered and regulated in a manner consistent with Congressional intent and not in a manner that undermines the national goals of this well-supported public policy.

Thank you, and I am happy to take any questions.

Chairman HOUGHTON. Thanks very much. Mr. Capps.

STATEMENT OF R. RANDALL CAPPS, CORPORATE TAX DIRECTOR, AND GENERAL TAX COUNSEL, ELECTRONIC DATA SYSTEMS CORPORATION, PLANO, TEXAS

Mr. CAPPS. Good morning, Mr. Chairman and members of the committee. My name is Randy Capps and I am Tax Director for Electronic Data Systems Corporation. I would like to thank you for this opportunity to speak with you about the research and experimentation tax credit. EDS has been a leader in the information technology services industry for more than 35 years. Our leadership depends on continuous reinvention of our products and our services. Our 120,000 employees deliver management consulting and electronic business solutions to more than 9,000 business and Government clients in over 50 countries.

Each year, we spend more than $1.7 billion on a wide range of research and development. EDS researchers have, for example, developed programs that help health insurers control costs. We developed a manufacturing system, using a computer language tailored for the semiconductor industry, that guided silicon wafers from one production location to another. We are focusing today on development of programs to guard against cyber-terrorism in the digital economy.

My industry was born out of high-cost, high-risk research. It is driven by the creativity of thousands of innovative corporations. The R&D yields products and services that are improving lives and generating productivity increases throughout the economy.

Since the R&D credit was enacted in 1981, it has been extended 10 times. With each extension, Congress indicated strong bipartisan support. Last year, Congress extended the credit for five years. Earlier this year, the Senate voted 98-to-one in favor of an amendment to the estate tax bill that would have made the credit permanent. All amendments were stripped from the final bill, but the bipartisan support was a strong indicator of the importance of the credit to members from all parts of the country.

So, why is the credit so important? First, it offsets the tendency for underinvestment in R&D. The single-biggest factor driving productivity growth is innovation. However, companies cannot profit from the indirect benefits of the technology to the economy. As a

result, the rate of return of R&D to society is twice that which accrues to an individual company.

The second reason why it is so important: The credit helps U.S. business remain competitive in world markets. Foreign governments are competing aggressively for research investments by offering substantial tax and other financial incentives. Companies that do research in the United States are at a disadvantage when competing with foreign-based multinationals that have lower research costs.

Third, R&D spending is very responsive to the credit. Economic studies of the credit have found a one-dollar reduction in the after-tax cost of R&D stimulates approximately one dollar of additional private R&D spending in the short run and about two dollars of additional R&D spending in the long run.

Most important, research and development is about jobs and it is about people. Investment in R&D is ultimately an investment in people, their education, their jobs, their economic security and their standard of living.

Dollars spent on R&D are primarily spent on salaries for engineers, researchers and technicians. At EDS, more than 90 percent of the expenses qualifying for the R&D credit go to salaries for U.S. employees who are directly involved in research. When R&D results in new products and services, the incentives that support R&D translate into salaries of employees in production, administration and sales. By making other industries more competitive, research in one industry contributes to the creation of jobs across the entire economy.

Research projects cannot be turned on and off like a light switch. The most important thing that you as leaders in the tax legislative process can do to promote sustained investment in long-term research is to make the credit permanent. House Speaker Dennis Hastert, Minority Leader Dick Gephardt, Senate Majority Leader Trent Lott, Minority Leader Tom Daschle, Vice President Al Gore and Texas Governor George Bush have all endorsed the permanent R&D credit.

This week's issue of Time magazine includes a story entitled "Hooray for R&D: It is Time to Make a Popular and Effective Tax Credit Permanent." That is exactly what I am asking you to do. Thank you and I would be happy to answer any questions you may have.

[The prepared statement follows:]

Statement of R. Randall Capps, Corporate Tax Director, and General Tax Counsel, Electronic Data Systems Corporation, Plano, Texas

Good morning. Mr. Chairman and members of the committee. My name is Randy Capps, and I am Corporate Tax Director for Electronic Data Systems. I would like to thank you for the opportunity to speak with you about the research and experimentation tax credit and to thank you and all the members of the subcommittee who have supported the credit over the years.

EDS has been a leader in the global information technology services industry for more than 35 years. Our 120,000 employees deliver management consulting and electronic business solutions to more than 9,000 business and government clients in approximately 50 countries. EDS reported revenues of $18.5 billion in 1999. EDS spends more than $1.7 billion on research and development every year.

For example, EDS researchers have developed programs that help health insurers to control costs and a manufacturing system, using a computer language tailored for the semiconductor industry, to guide silicon wafers from one production station

to another. Today, a major focus is to develop programs to guard against cyber terrorism in the digital economy.

The information technology services industry was born out of basic research and is driven by the applied research of hundreds of innovative corporations. This corporate R&D produces a growing range of products and services that are generating productivity increases throughout the economy. The technological revolution that is occurring in my industry is replicated in many others. These industries are reinventing themselves and in the process are creating a broad range of high-paid, high-skilled jobs in the United States.

R&D is the primary source of technological innovation. According to the U.S. Office of Technology Policy, technological innovation has accounted for up to half of U.S. economic growth during the past five decades.

I. R&D Credit Legislative History

The R&D credit was enacted in 1981 to provide an incentive for companies to increase their U.S. R&D activities. As originally passed, the R&D credit was to expire at the end of 1985. Recognizing the importance and effectiveness of the provisions, Congress decided to extend it. In fact, since 1981 the credit has been extended ten times. In addition, the credit's focus has been sharpened by limiting qualifying activities and eligible expenditures. With each extension, Congress indicated its strong bipartisan support for the R&D credit. Most recently, Congress approved a five-year extension of the credit, until June 30, 2004.

This year, the Senate voted 98 to 1 in favor of an amendment that would have added a permanent R&D tax credit to the estate tax bill. For reasons unrelated to the credit, all amendments were stripped from the bill. However, I believe this vote was a strong indication that members of Congress recognize the contribution of the credit to economic growth.

In 1996, the elective Alternative Incremental Research Credit ("AIRC") was added to the credit, increasing its flexibility and making the credit available to R&D intensive industries which could not qualify for the credit under the regular criteria. The AIRC adds flexibility to the credit to address changes in business models and R&D spending patterns which are a normal part of a company's life cycle.

According to the conference report of the Tax Reform Act of 1986, the R&D credit was originally limited to a five-year term in order "to enable the Congress to evaluate the operation of the credit." It is understandable that Congress in 1981 would want to adopt this new credit on a trial basis. The credit has long since proven to be an excellent, highly leveraged investment of government resources to provide an effective incentive for companies to increase their U.S.—based R&D.

The historical pattern of temporarily extending the credit reduces the incentive effect of the credit. The U.S. research community needs a stable, consistent R&D credit in order to maximize its incentive value and its contribution to the nation's economic growth.

II. Why do we Need an R&D Credit?

A. The credit offsets the tendency for under investment in R&D

The single biggest factor driving productivity growth is innovation. As stated by the Office of Technology Assessment in 1995: "Much of the growth in national productivity ultimately derives from research and development conducted in private industry." Sixty-six to 80 percent of productivity growth since the Great Depression is attributable to innovation. In an industrialized society, R&D is the primary means by which technological innovation is generated.

Companies cannot capture fully the rewards of their innovations because they cannot control the indirect benefits of their technology on the economy. As a result, the rate of return to society from innovation is twice that which accrues to the individual company. This situation is aggravated by the high risk associated with R&D expenditures. As many as 80 percent of such projects are believed to be economic failures.

Therefore, economists and technicians who have studied the issue are nearly unanimous that the government should intervene to increase R&D investment. A recent study, conducted by the Tax Policy Economics Group of Coopers & Lybrand, now part of PriceWaterhouseCoopers, concluded that ". . .absent the R&D credit, the marketplace, which normally dictates the correct allocation of resources among different economic activities, would fail to capture the extensive spillover benefits of R&D spending that raise productivity, lower prices, and improve international trade for all sectors of the economy." Stimulating private sector R&D is particularly critical in light of the decline in government funded R&D over the years. Direct government R&D funding has declined from 57 percent to 36 percent of total R&D

spending in the U.S. from 1970 to 1994. Over this same period, the private sector has become the dominant source of R&D funding, increasing from 40 percent to 60 percent.

B. The credit helps U.S. business remain competitive in a world marketplace

The R&D credit has played a significant role in placing American businesses ahead of their international competition in developing and marketing new products. It has assisted in the development of new and innovative products; providing technological advancement, more and better U.S. jobs, and increased domestic productivity and economic growth. This is increasingly true in our knowledge and information-driven world marketplace.

Research and development must meet the pace of competition. In many instances, the life cycle of new products is continually shrinking. As a result, the pressure of getting new products to market is intense. Without robust R&D incentives encouraging these efforts, the ability to compete in world markets is diminished.

Continued private sector R&D is critical to the technological innovation and productivity advances that will maintain U.S. leadership in the world marketplace. Since 1981, when the credit was first adopted, there have been dramatic gains in R&D spending. Unfortunately, our nation's private sector investment in R&D (as a percentage of GDP) lags far below many of our major foreign competitors. For example, U.S. firms spend (as a percentage of GDP) only one-third as much as their German counterparts on R&D, and only about two-thirds as much as Japanese firms. This trend must not be allowed to continue if our nation is to remain competitive in the world marketplace.

Moreover, we can no longer assume that American companies will automatically choose to site their R&D functions in the United States. Foreign governments are competing aggressively for U.S. research investments by offering substantial tax and other financial incentives. Even without these tax incentives, the cost of performing R&D in many foreign jurisdictions is lower than the cost to perform equivalent R&D in the U.S.

An OECD survey of 16 member countries found that 13 offer R&D tax incentives. Of the 16 OECD nations surveyed, 12 provide an R&D tax credit or allow a deduction for more than 100 percent of R&D expenses. Six OECD nations provide accelerated depreciation for R&D capital. According to the OECD survey, the U.S. R&D tax credit as a percentage of industry-funded R&D was *third lowest* among nine countries analyzed.

In July of this year, the UK government revised its R&D tax rules to provide increased incentives for small and medium size companies. Stephen Beyers, UK secretary of state for trade and industry, said of the change: "I want the UK to be the most attractive location for companies to conduct R&D."

Making the U.S. R&D tax credit permanent would markedly improve U.S. competitiveness in world markets. The 1998 Coopers & Lybrand study found that, with a permanent credit, annual exports of goods manufactured here would increase by more than $6 billion, and imports of good manufactured elsewhere would decrease by nearly $3 billion. Congress and the Administration must make a strong and permanent commitment to attracting and retaining R&D investment in the United States. The best way to do that is to permanently extend the R&D credit.

C. The credit provides a targeted incentive for additional R&D investment, increasing the amount of capital available for innovative and risky ventures

The R&D credit reduces the cost of capital for businesses that increase their R&D spending, thus increasing capital available for risky research ventures.

Products resulting from R&D must be evaluated for their financial viability. Market factors are providing increasing incentives for controlling the costs of business, including R&D. Based on the cost of R&D, the threshold for acceptable risk either rises or falls. When the cost of R&D is reduced, the private sector is likely to perform more of it. In most situations, the greater the scope of R&D activities, or risk, the greater the potential for return to investors, employees and society at large.

The R&D credit is a vital tool to keep U.S. industry competitive because it frees-up capital to invest in leading edge technology and innovation. It makes available additional financial resources to companies seeking to accelerate research efforts. It lowers the economic risk to companies seeking to initiate new research, which will potentially lead to enhanced productivity and overall economic growth.

D. Private industrial R&D spending is very responsive to the R&D credit, making the credit a cost effective tool to encourage economic growth

Economic studies of the credit, including the Coopers & Lybrand 1998 study, the KPMG Peat Marwick 1994 study, and the article by B. Hall entitled: "R&D Tax Pol-

icy in the 1980s: Success or Failure?'' *Tax Policy and the Economy* (1993), have found that a one-dollar reduction in the after-tax price of R&D stimulates approximately one dollar of additional private R&D spending in the short-run, and about two dollars of additional R&D in the long run. The Coopers & Lybrand study predicts that a permanent R&D credit would lead U.S. companies to spend $41 billion more (1998 dollars) on R&D for the period 1998–2010 than they would in the absence of the credit. This increase in private U.S. R&D spending, the 1998 study found, would produce substantial and tangible benefits to the U.S. economy.

Coopers & Lybrand estimated that this permanent extension would create nearly $58 billion of economic growth over the same 1998–2010 period, including $33 billion of additional domestic consumption and $12 billion of additional business investment. These benefits, the 1998 study found, stemmed from substantial productivity increases that could add more than $13 billion per year of increased productive capacity to the U.S. economy. Enacting a permanent R&D credit would lead U.S. companies to perform significantly more R&D, substantially increase U.S. workers' productivity, and dramatically grow the domestic economy.

E. Research and Development is About Jobs and People

Investment in R&D is ultimately an investment in people, their education, their jobs, their economic security, and their standard of living. Dollars spent on R&D are primarily spent on salaries for engineers, researchers and technicians.

When R&D results in new products and services, the incentives that support R&D translate into salaries of employees in manufacturing, administration and sales. Successful R&D also means salaries to people in the distribution channels who bring new products to customers, service providers and developers of complementary products. Finally, customers benefit from advances in technology that improve their productivity and ability to compete. By making other industries more competitive, research within one industry contributes to preserving and creating jobs across the entire economy.

At EDS more than 90 percent of expenses qualifying for the R&D credit go to salaries for employees directly involved in research. These are high-skill, high-wage jobs that employ U.S. workers. Investment in R&D, in people working to develop new ideas, is one of the most effective strategies for U.S. economic growth and competitive vitality. Indeed, the 1998 Coopers & Lybrand study shows improved worker productivity throughout the economy with the resulting wage gains going to hi-tech and low-tech workers alike. U.S. workers' personal income over the 1998–2010 period, the 1998 study predicts, would increase by more than $61 billion if the credit were permanently extended.

F. The R&D credit is a market driven incentive

The R&D credit is a meaningful, market-driven tool to encourage private sector investment in research and development expenditures. Any taxpayer that increases their R&D spending and meets the technical requirements provided in the law can qualify for the credit. Instead of relying on government-directed and controlled R&D spending, businesses of all sizes, and in all industries, can determine what types of products and technology to invest in so that they can ensure their competitiveness in the world marketplace.

III. The R&D Credit should be made Permanent to have Maximum Incentive Effect

As the Joint Committee on Taxation pointed out in the Description of Revenue Provisions in the President's Fiscal Year 2000 Budget Proposal (JCS–1–99), ''If a taxpayer considers an incremental research project, the lack of certainty regarding the availability of future credits increases the financial risk of the expenditure.'' Research projects cannot be turned off and on like a light switch. If corporate managers are going to take the benefits of the R&D credit into account in planning future research projects, they need to know that the credit will be available to their companies for the years in which the research is to be performed. Research projects have long horizons and extended gestation periods. Furthermore, firms generally face longer lags in adjusting their R&D investments compared, for example, to adjusting their investments in physical capital.

In order to increase their R&D efforts, businesses must search for, hire, and train scientists, engineers and support staff. They must often invest in new physical plants and equipment. There is little doubt that a portion of the incentive effect of the credit has been lost over the past 17 years as a result of the constant uncertainty over the continued availability of the credit.

If the credit is to provide its maximum potential for increased R&D activity, the practice of periodically extending the credit for short periods and then allowing it to lapse, must be eliminated, and the credit must be made permanent. Only then will the full potential of its incentive effect be felt across all the sectors of our economy. No one has said this more forcefully than Federal Reserve Chairman Alan Greenspan who testified at last year's high technology summit. Chairman Greenspan was emphatic in his conclusion that, if there is a credit, it should be permanent.

House Speaker Dennis Hastert, House Minority Leader Richard Gephard, Senate Majority Leader Trent Lott, Senate Minority Leader Tom Daschle, Vice President Al Gore, and Texas Governor George Bush have endorsed a permanent R&D credit.

IV. CONCLUSION

Making the R&D credit permanent promotes the long-term economic interests of the United States. It will eliminate the uncertainty over the credit's future and enable businesses to make better long-term decisions regarding investments in research. Private sector R&D leads to innovative products and processes that contribute to economic growth, increased productivity, new and better U.S. jobs, and higher standards of living for all Americans. By creating an environment favorable to private sector R&D investment, a permanent credit will make it easier for U.S. companies to compete effectively in the global economy and help to ensure the growth of high-skill jobs in the United States.

EDS strongly supports the permanent extension of the R&D credit. Last year's enactment of a five-year extension provided the business community with its first opportunity to consider the benefits of a long term extension when calculating the costs of long-term, high cost research projects. Unfortunately, the lack of permanence means that the uncertainty of making such calculations increases every year.

The U.S. economy is experiencing remarkable economic growth. Much of this growth reflects R&D investments that were made years ago. The time has come to invest in the future. I urge you to include a permanent R&D credit in the first available vehicle.

Chairman HOUGHTON. Thanks very much, Mr. Capps.

Ms. Evans, we are going to have to break pretty soon, but please go ahead with your testimony and we will suspend and then we will come right back.

STATEMENT OF LINDA EVANS, PROGRAM DIRECTOR, TAXES AND FINANCE, GOVERNMENTAL PROGRAMS, IBM

Ms. EVANS. Mr. Chairman, members of the subcommittee, on behalf of IBM, I thank you for the opportunity to share our views on the R&D credit. My name is Linda Evans, Program Director, Finance and Tax Policy, with IBM Governmental Programs. As a key player in the information technology industry, or IT, IBM strives to lead in the creation, development and manufacturing of the industry's most advanced information technologies, which includes computer systems, software, networking systems, storage devices and microelectronics.

We also have a worldwide network of services solution teams that translate these advanced technologies into value for private- and public-sector customers. Without question, the key to IBM's success is its record of innovation, which is made possible by R&D. The R&D credit and the alternative incremental research credit, or the AIRC, are useful tools to facilitate business research investment and I will speak more about that in a minute.

I would like to first say a few words about the power of the IT industry and how it brings value to the economy and society. I think it fair to say that the IT industry has had a significant im-

pact on the growth of the United States economy and, according to studies by the Department of Commerce, while IT growth accounts for a relatively small share of the economy's total output, about 8.3 percent in 2000, that growth has contributed nearly one-third of real U.S. economic growth between 1995 and 1999.

Productivity is a measure of economic health and as you know Federal Reserve Board Chairman Alan Greenspan has said on more than one occasion that information technologies have had a positive effect on productivity growth. Further, according to the Department of Commerce, IT and electronic commerce, which are part and parcel of the new economy, will drive economic growth for years to come. Now, how is this phenomenal growth sustained?

The relentless drive of IT, which fuels productivity and brings us societal benefits, relies heavily on R&D, which is the lifeblood of innovation. The IT industry must innovate to survive. What role does the credit play in all of this? With the R&D credit, the Government is supporting the view that R&D is essential for innovation and economic growth. Last year's five-year extension of the credit and the improvement of the AIRC provides some of the predictability that industry has sought over nine years of annual renewals.

A permanent credit, of course, will provide even greater certainty for companies that are planning long-term research investments and we thank you for last year's extension. A testament to the value of R&D and innovation for IBM is the fact that for the seventh year in a row, the company has earned more U.S. patents than any other company in the world. In fact, in 1999, IBM earned 2,756 patents, which was 900 more than the next company. IBM continues to seek ways to make computer technology work faster and more effectively.

This includes breakthrough chip-making processes to produce the next generation of computer chips, which are the brains of computers, and progress in storage density to make products for increasingly mobile workers in the new economy who will need the convenience, portability and greater computing power. The computing power, software developments and simulation capabilities of IBM's technology are bringing better understanding and faster solutions to the world's scientific, medical and environmental problems.

For example, a big challenge for IBM is to simulate the folding of a complex protein, and for that IBM will build a supercomputer called Blue Gene, whose power will be needed to unlock the code of some 3 billion chemical structures.

Chairman HOUGHTON. Could I interrupt a minute? Listen, I am terribly sorry, but since I am the only one here and I have got to go and vote, could we suspend the proceedings and I will rush over and I will come right back and I will wait for the finish of your testimony. And then we can move to Ms. Hutter; okay?

Ms. EVANS. Certainly.

Chairman HOUGHTON. Thanks very much.

[Recess.]

Chairman HOUGHTON. Well, again, thanks for bearing with us. Let's continue. Ms. Evans, right in mid-sentence?

Ms. EVANS. Thank you, Mr. Chairman. The computing power, software advancements and simulation capabilities of IBM's technology are bringing better understanding and faster solutions to

the world's scientific, medical and environmental problems. For example, a big challenge for IBM is to simulate the folding of a complex protein, and for that the company will build a supercomputer called Blue Gene, whose power will be needed to unlock the code of some three billion chemical structures.

And there is Deep Thunder, IBM's weather-modeling visualization system that will more accurately predict local weather patterns and violent weather phenomena such as thunderstorms and wind shear. IBM uses its IT to leverage the power of the Internet to help businesses of all sizes expand their reach in electronic commerce. In the area of education, improving K–12 and lifelong learning are important national concerns and IBM's strong historical commitment to improving schools leads us to develop technologies and expertise for teaching methods, including Internet-based methods that will facilitate and improve the way kids learn and the way teachers teach.

In conclusion, today you will have heard from my colleagues and myself about some of the ways our companies innovate. You will have learned that innovation is a central focus of the IT industry and that research and development fuels innovation. The research credit remains an important tool in creating a positive environment for this to continue.

Thank you very much.

[The prepared statement follows:]

Statement of Linda Evans, Program Director, Taxes and Finance, Governmental Programs, IBM

Mr. Chairman, Members of the committee, on behalf of IBM, I thank you for the opportunity to share our views on the importance of research and development in the context of the new economy and the role of the federal R&D credit. I am Linda Evans, Program Director Taxes & Finance for IBM Governmental Programs here in Washington D.C. Over the next few minutes, I will briefly touch on the impact of the Information Technology industry or (IT) in the emerging "new economy" and the critical role of R&D—the lifeblood for innovation and driver of the IT industry. I will then give some examples of IBM's technological and developmental innovations that benefit the lives of all Americans.

As a key player in the IT industry, IBM strives to lead in the creation, development and manufacture of the IT industry's most advanced information technologies, including computer systems, software, networking systems, storage devices and microelectronics. IBM also has a worldwide network of solutions and services teams that translate these advanced technologies into value for its private and public sector customers.

Key to IBM's success is its record of innovation which is made possible by investment in research and development. The federal R&D credit and its complement Alternative Incremental Research Credit or (AIRC), have proven to be a cost-effective means to increasing business research investment. I'll speak more about this in a minute.

The Power of the IT sector

I think it fair to say that the high-technology sector and in particular, the information technology industry, has had a significant impact on the growth of the U.S. economy. According to a 1998 Department of Commerce study on "The Emerging Digital Economy," the information technology (IT) industry has been growing at more than double the rate of the overall economy and it now constitutes 8.2% of GDP. The Commerce paper also found that IT has driven over one-quarter total real economic growth on average over each of the last five years.

According to the Department of Commerce, business spending on IT in 1996 rose to 45 percent of total business investment as compared to only 3 percent of total business investment in the 1960s. Companies in the U.S. are now looking more and more to IT to increase productivity. Federal Reserve Board Chairman Alan Greenspan has said more than once that information technologies have had a positive ef-

fect on productivity growth in the U.S. In the area of employment, the Department of Commerce found that in 1996, 7.4 million people worked in the IT sector and IT-related jobs throughout the United States.

The Department of Commerce study further concludes that IT and electronic commerce which are part and parcel of the emerging digital economy, will drive economic growth for years to come. According to one estimate, in the U.S., some $2.7 trillion of business will be conducted on-line by 2004. On a worldwide basis it is said that this figure could hit some $7.3 trillion in the same year. What is emerging is the rise of a new economy, and a new global medium, the Internet, that will perhaps be the single most important driver of business, economic and social change in the 21st century.

Research and Development: Lifeblood of Innovation

To fuel continuing economic growth, productivity and bring other societal benefits, the high-technology sector and IT rely heavily on research and development. The highly-competitive IT industry must innovate to survive, and it must innovate quickly. You may have heard of the legendary Moore's Law named for Intel co-founder Gordon Moore which holds that the price/performance of the integrated circuits etched onto silicon chips (microchips) processing capacity doubles every 18 months.

Federal R&D Credit

With the enactment of the federal R&D credit in 1981, the government is supporting the view that research and development is essential for innovation and continued economic growth. The credit is a recognition of the positive role of government in facilitating a cost-effective way to increase business research investment. In 1999 the "Taxpayer Refund Relief Act" extended the credit for five years providing some of the predictability that industry has sought over nine years of annual renewals. For high-tech and IT companies, this is important because they generally budget R&D over five-to-ten year planning cycles. Also last year, the credit was strengthened by improvement in the Alternative Incremental Research Credit or the AIRC. The AIRC was created in 1996 for use by companies that could not benefit from the regular credit. Last year's changes to the AIRC have made it available to a greater number and variety of companies. For IBM, last year's extension and modification of the R&D credit and the AIRC have created a more positive environment.

IBM Innovation

A testament to the value of R&D to IBM is the fact that for the seventh year in a row, the company earned more U.S. patents than any other company in the world. In 1999, IBM earned 2,756 patents—900 more than the second-place company. In fact, over the decade from 1990 to 1999, IBM was awarded more patents than any other company, leading to a host of new products and services. The heart of IT is indeed innovation and for IBM it embraces processing, speed, storage and connectivity.

IBM continues to seek ways to make computer technologies work faster and more effectively. This includes breakthrough chip-making processes that involve new materials to produce the next-generation of computer chips, the brains of computers. IBM has also led in the storage density area, by announcing in April of this year the densest drives ever for notebook computers. The drives have 15 times the capacity of the typical notebook drive and can hold the equivalent of a mile-high stack of documents or 49 music CDs. The drive spins at about 5,400 rotations per minute, faster than most notebook drives and more like a desktop PC drive. As workers become increasingly mobile in the new economy, they'll need the convenience of portability and the computing power of a desktop workstation.

Solving Problems with IBM products and services

"Deep computing" refers to the application of raw computing power, advanced software and sophisticated algorithms, and it is being used to analyze and solve increasingly complex environmental problems. For example IBM RS/6000 SP technology which also powers the supercomputers of the Lawrence Livermore facilities, is being used by the U.S. National Center for Atmospheric Research to calculate how thousands of variables interact. Such variables as ocean temperature, precipitation and ozone depletion can be analyzed and configured to better predict long-term climate change.

The products and services generated by innovations in the IT industry embrace many facets of every day life in this country and in the world. In the interest of time, I will describe just a few of the areas of IBM's involvement:

Life Sciences and Health Care

Many of you may recall Gary Kasparov playing chess against the powerful Deep Blue IBM computer. Today, IBM is participating in the next Grand Challenge, to simulate the folding of a complex protein. For this big initiative, IBM will build a supercomputer called "Blue Gene" whose power will be needed to unlock the code of some three billion chemical structures.

Electronic Commerce and E-business

Estimating the number of current Internet users is not at all exact as there are a multitude of surveys, but according to one estimate, there are over 350 million users today and with so many new users getting on line each day, there will soon be over 500 million users. The Internet bridges geographic boundaries and IBM directs its (IT) in ways that leverage the power of the Internet to help small, medium and large businesses expand their global reach. The prospect of connecting a multitude of information systems and reaching whole new sets of users including employees, customers, suppliers and business partners, has given rise to what IBM refers to as "e-business." This is a strategic priority for IBM and it refers to the broader, more powerful aspects of what is evolving: Now entities of all sizes in all industries, both private and public sector can redefine what they do and reinvent who they are. E-business applications and technology can transform internal operations including how products get developed, how work gets done and even how employees share ideas.

In the Area of Environmental Sciences

IBM researchers have developed a weather modeling and visualization system to improve local weather forecasts and to more accurately predict local patterns as well as violent weather phenomena such as thunderstorms and wind shear. IBM's system called Deep Thunder provides local scale information and precision that can also be important in potential applications such as aviation, travel, agriculture and construction, where weather is an important factor in making decisions. The computing power, software advancements and simulation capabilities of IBM's technology are bringing better understanding and faster solutions to the world's scientific, medical and environmental problems.

In the Area of Education

Improving K–12 and lifelong learning are important national concerns. Education is vital to a thriving economy and this is no less true for a new information-based economy. IBM has a strong history of, and commitment to, improving schools. The company works to provide technology and expertise to bring new teaching methods including IT and Internet-based methods that will facilitate and improve the way kids learn, and the way teachers teach. Through such technologies as data warehousing, knowledge management and distance learning, these programs extend and improve the availability and quality of education. Of course, a comprehensive discussion of education and its challenges goes well beyond computers in the classroom, and that discussion is outside the scope of our task here today.

CONCLUSION

Well today, you will have heard from my colleagues and me about some of the ways our companies strive to innovate. You will have learned that innovation is a central focus of the IT industry and that we must innovate to survive. Research and Development fuels innovation and the federal research credit is an important tool in creating a positive environment for innovation.

Chairman HOUGHTON. Thanks very much.
Ms. Hutter?

STATEMENT OF COLLIE LANGWORTHY HUTTER, CHIEF OPERATING OFFICER, CLICK BOND, INC., CARSON CITY, NEVADA, AND MEMBER, BOARD OF DIRECTORS, NATIONAL ASSOCIATION OF MANUFACTURERS

Ms. HUTTER. Thank you, Chairman Houghton and members of the subcommittee for the opportunity to testify regarding the tax

treatment of R&D. I am Collie Hutter, Chief Operating Officer and owner of a small 75-employee manufacturing company called Click Bond, Inc. We are located in Carson City, Nevada. As an owner of a company engaged both in performing R&D and applying the technological advances derived from R&D, I strongly advocate that the R&D tax credit be made permanent.

By way of background, my undergraduate degrees is in physics from Carnegie Mellon University and I earned an MBA at the Wharton School of the University of Pennsylvania. Currently I am on the board of directors of the National Association of Manufacturers. I will share with you how R&D, applied in my own business, has produced technological advances that have kept my company growing.

Since 1969, I have been a business owner of first a research and development company and now a manufacturing company that engages in considerable R&D. Click Bond designs and develops and manufactures fasteners, screws and nuts for the aerospace defense market. All of our fasteners are designed to be adhesively bonded for surface mounting. Click Bond's customers are primarily the aircraft manufacturers. We transformed from a pure R&D company to a manufacturing company in 1987 by default.

At that time, we were unable to license the Click Bond technology to another manufacturer as we had been able to do with the other products we had developed. Since we strongly believed in this particular product line, we went into the manufacturing business ourselves. I suppose it might be said that my company moved backwards from being a new economy company, one based on high-tech equipment, intensive research and development and a skilled workforce, to an old economy company that employs less-skilled people. That is not true.

Our skilled scientists and engineers are still doing their innovative work, but are more focused on one type of product. We like to think that we expanded our horizons by converging a traditional manufacturing company with technology to become a new manufacturer in the new economy. My company has benefited from the R&D tax credit in three ways: One, through direct use; number two, from the flow-down from our suppliers who utilize the tax credit; and indirectly through the high-tech products developed in use with the credit.

The direct benefit is that a number of years ago I was able to use the credit and it was a sufficient amount of money for our company to apply for an additional patent. The major benefit we have is the flow-down benefit. The Click Bond fastening systems are possible because chemical companies, many of which use the R&D credit, have developed the high-strength, fuel-resistant, high-temperature epoxy and acrylic-modified adhesives that are used to bond our fasteners to the aircraft and other surfaces. These same chemical companies also developed and brought to market the high-strength plastics from which we make our fixtures that hold our fasteners in place.

The credit encourages them to continue and to expand their research into new products. An indirect benefit we have of the research and development is that Click Bond uses the products developed and brought to the market by the new economy. These new-

economy products provide the tools to control my manufacturing process, design my parts and increase the efficiency of my operation. For example, we use electronic micrometers that feed information directly to computers for statistical process control. Parts that flow in and out of our stock rooms are controlled by bar-coded bins. A materials resource planning program that runs on a Windows platform controls the movement of work-in-process through our factory.

Many of our incoming orders are received via electronic data interchange. Our high-speed Internet access via T1 lines and Cisco routers was installed so we can efficiently purchase supplies over the Internet. Our lathes and mills have computer controls. You see, new-economy products support many aspects of my traditional manufacturing operation. High-tech and modern manufacturing are the same thing. Manufacturing today is, by definition, high-tech and the engine of the new economy.

Currently it is fashionable to say that there is a distinction between the old and new economy. This distinction is without a difference. It is a false dichotomy. My company is a good example of this. Today manufacturers have many things to think about in addition to just getting their product out the door: EPA, OSHA, State regulations, personnel regulations, health insurance, to name a few. Large companies have the resources to employ experts in these areas, while small companies typically rely on the owner, like myself, to be the expert.

A permanent R&D credit would reduce the number of variables we have to contend with in our long-range planning. Every R&D dollar spent is potentially at risk. The insurance that the R&D tax credit is there reduces the perceptible risk. It would be positive to know that the credit will be there when the R&D is complete. A permanent credit would be a powerful tool to fuel more R&D in our new economy. Not only my company, but also the many other companies large and small that are constantly juggling their limited supply of capital between intangible and tangible products would benefit from the permanent credit.

Again, thank you for your indulgence of time. I will be happy to answer any questions.

[The prepared statement follows:]

Statement of Collie Langworthy Hutter, Chief Operating Officer, Click Bond, Inc., Carson City, Nevada, and Member, Board of Directors, National Association of Manufacturers

Thank you Chairman Houghton and members of this subcommittee for the opportunity to testify regarding the tax treatment of research and development (R&D) expenses at this hearing on the federal tax code and the "new economy." I am Collie Hutter, Chief Operating Officer and owner of a small, 75-employee manufacturing company, Click Bond, Inc, in Carson City, Nevada.

As the owner of a company engaged both in performing R&D and applying the technological advances derived from R&D, I strongly advocate that the Research and Experimentation tax credit, commonly referred to as the R&D tax credit, be made permanent. Thank you in particular to those congressional tax-writing committee members here today—which is many of you—who have supported the R&D tax credit, including most recently a multi-year extension. Specifically, I will comment on how R&D applied in my own business have produced technological advances that have kept my company growing.

By way of background, my undergraduate degree is in Physics from Carnegie Mellon University and I earned an MBA at the Wharton School at the University of

Pennsylvania. Currently, I am on the Board of Directors of the National Association of Manufacturers.

Since 1969, I have been a business owner, along with my husband and brother-in-law, of first a research and development (R&D) company and now a manufacturing company that engages in considerable R&D. Click Bond designs, develops, manufactures and markets fasteners, screws and nuts for the aerospace/defense market and other producers of end products that are made of composite materials. All of our fasteners are designed to be adhesively bonded for surface mounting. Click Bond is a wholly owned subsidiary of our R&D company, Physical Systems, Inc.

Physical Systems holds approximately 20 U.S. patents on products that were successfully brought to the marketplace. The engineers and scientists at Physical Systems developed all the products covered by these patents. Ten of these patents cover the Click Bond product lines.

We transitioned from a pure R&D company to a manufacturing company in 1987 by default. At that time, we were unable to license the Click Bond technology to a manufacturer, as we had been able to do with our other products. Since we strongly believed in the product concept, we went into the marketing and manufacturing business ourselves.

I suppose it might be said that my company moved backwards from being a new economy company, one based on "high tech equipment, intensive research and development, and a skilled workforce," to an "old economy" company that employs less skilled people. That simply is not true. My company would not have grown without using the technology developed in just the past decade. Our skilled scientists and engineers still are doing their innovative work, but are more focused on one type of product. We like to think that we expanded our horizons by converging a traditional manufacturing company with technology to become a "new manufacturer" in the new economy. Further, our workforce grew from seven to 75.

Click Bond's customers are primarily aircraft manufacturers such as Boeing Commercial and Military, Lockheed Martin, Northrop Grumman, Airbus, British Aerospace, Bombardier and their suppliers. Twenty percent of our business is derived from exports and another 20 percent comes from domestic commercial customers such as boat builders, the automotive industry and the amusement park industry.

Over the years, my company has benefited from the R&D tax in the following three ways: 1) through direct use of the credit; 2) from the flow-down benefits from our suppliers who use the credit; and 3) indirectly, through the hi-tech products, developed because of the tax credit, that are used in our manufacturing process and product innovations.

1) The Direct Benefit:

My company took advantage of the R&D tax credit in initially developing the Click Bond product line. Although the credit was of a small monetary value, it was sufficient to allow us that one additional patent application. In one 12 month period, we applied for and received three U.S. patents on our Click Bond product line. For a small, new company to enter a highly competitive market such as fasteners, it was of immeasurable benefit for us to have good patent protection for our innovative products.

2) The Flow-Down Benefit:

Many large U.S.-based chemical companies take advantage of the R&D tax credit. The credit encourages them to continue and expand their research into new products. The Click Bond fastening systems are possible because these chemical companies developed the high strength, fuel resistant, high temperature epoxy and acrylic modified epoxy adhesives used to bond our fasteners to aircraft and other surfaces. These chemical companies also developed and brought to market the high strength plastics from which we make our fixtures that hold our fasteners in place while the adhesive sets. A small company such as Click Bond rarely performs primary materials research. Instead, we typically incorporate the materials and processes developed by the larger companies into our innovation programs. Also, we do intensive research into new materials being introduced to the market—especially those trends we see the primary research following. We will often develop products that need a material or process that has yet to be brought to the market, and we will have to wait to complete our development until the product is available on an economic scale.

3) Indirect Benefit:

Click Bond is an excellent example of the integration of traditional manufacturing with the technological innovations of the past decade that have transformed our economy into what is now commonly referred to as the new economy. Manufacturing

today by its very definition is high tech and the engine of the new economy. My company is a case in point.

Click Bond uses the products developed and brought to market by the new economy. These new economy products provide the tools to control my manufacturing process, design my parts, and increase the efficiency of my operation. We have more than 35 computers for 75 employees. Also, we have electronic micrometers that feed information directly to computers for statistical process control. Parts flow in-and-out of our stockrooms and are controlled by bar coded bins. A Material Resource Planning program that runs on a Windows platform controls the movement of work-in-process through our factory. Many of our incoming orders are received via Electronic Data Interchange. Our high speed Internet access via T1 lines and Cisco routers was installed so we can efficiently purchase supplies over the Internet. We are preparing to purchase materials for production over the Internet, too. Our lathes and mill are computer controlled.

As you can see, new economy products support every aspect of my traditional manufacturing operation. High tech and modern manufacturing are the same thing. Currently fashionable is a distinction between the old economy and the new economy. This distinction is without a difference; it is a false dichotomy.

Small companies are often the first to introduce a new material—or a new use for a material—because we can produce economically on the small scale required by a new product introduction. In the aircraft business, a product may be sold in small quantities for years before the market demands production on a scale that makes economic sense. An example of this is the all-composite screw that is essentially a screw made of reinforced plastic. These fasteners save weight, resist corrosion and do not conduct electricity. In short, they are excellent airplane parts.

A number of companies have been looking at making various types of composite fasteners. A large company, spurred on in part by the R&D credit, started research into a composite screw. The company was able to get very close to a finished product, but determined that it could not economically justify production on the relatively small scale that would be required during what was proving to be a very lengthy introductory period. Click Bond was able to buy the project for cash and future royalties. We are working hard to improve the product through additional R&D, but also we have put their original product in production in our plant, where we can more easily justify the small production quantities.

Based on my experience, I believe that the R&D tax credit is serving its intended purpose as an incentive to spur R&D that would not otherwise be performed. I applaud Congress for approving a multi-year extension of the credit last year, but I cannot overstate how the incentive value of the R&D credit would be enhanced exponentially if the credit were permanent. A permanent credit would be a powerful tool to fuel more R&D in our new economy.

Today, manufacturers have many things to think about, in addition to just getting their product out the door. EPA, OSHA, EEOC, state regulations and the many rules and regulations relating to personnel, health insurance costs, to name a few. Large companies have the resources to employ experts in these areas while small companies typically rely on the owner to be the expert. A permanent R&D credit would reduce the number of variables we have to contend with in our long-range planning. Every R&D dollar spent is potentially at risk. The assurance that the R&D tax credit is there reduces the perceptible risk. It would be a positive to know that the credit will be there when the research is done.

As a member of the small business community, it is a privilege to testify here today. If the R&D tax credit were permanent—which it should be—the credit's incentive value would be significantly enhanced for my company as well as many others. Not only my company, but also the many other companies, large and small, that are constantly juggling their limited supply of capital between intangible and tangible projects, would benefit from a permanent credit. My fellow NAM Board member Murray Gerber was quoted in Time last week (September 25), citing another spillover benefit from the R&D tax credit. While he did not use the R&D credit himself, he doubts he would have received R&D contracts from his primary customer if that company did not use the credit. This is just another example of the spillover benefits from the R&D credit.

In closing, I strongly urge you to make permanent the R&D tax credit. A permanent credit will encourage manufacturers, large and small, to continue performing the vital R&D that is necessary for creating the jobs of tomorrow and expanding upon our current economic prosperity. Again, thank you for the invitation to testify at this hearing. I will be happy to answer any questions you may have.

Chairman HOUGHTON. Well, thanks very much, Ms. Hutter. I have got a couple of questions, but the question I have got is a personal one. Why did you ever think of leaving the Northeast?

Ms. HUTTER. I married somebody from California.

Chairman HOUGHTON. But ended up in Nevada?

Ms. HUTTER. And ended up in Nevada.

[Laughter.]

Chairman HOUGHTON. And you went to Carnegie Mellon; is that right?

Ms. HUTTER. Yes, I went to Carnegie Mellon.

Chairman HOUGHTON. I see. Great. Wonderful. I don't know how Mr. Weller feels about this, but I know we have talked up here about the R&D tax credit and making it permanent. I think we all agree it is a good idea. The question is as we move into this new age of industrialization or information technology, what are those things which really should be covered by the R&D tax credit? It is a vast area. I mean, it goes from original research right down to quality control.

Do you think that is right? Have we got the formula right for you all?

Ms. HUTTER. It is not my total area of expertise. I think the broader we can define it, if it is pure R&D, it really is going to eliminate many of the smaller companies, would be my feeling, because my company does do pure R&D, but I think—

Chairman HOUGHTON. More product and process work?

Ms. HUTTER. Right.

Chairman HOUGHTON. I see. But that would not apply to IBM necessarily; would it, Ms. Evans, when you are talking about the number of patents which you have applied for and been accepted, that is far beyond just the process and product work?

Ms. EVANS. Right. If I had to decide how much of the R&D—about 15-to–20 percent of our R&D is basic and exploratory, and a lot of that is on the margin, sort of high-risk research and development. The others are project-driven, and the thing about the IT sector is that it is a highly-competitive one. You have to innovate and innovate quickly. You may have heard the expression of Moore's law, that the power of processing capability doubles every 18 months. Well, there are even new measures in the new economy referring to the "network effects," because now everything is connected with computers and communication devices, so the speed is rather quick.

So we have exploratory research, as well as project-developed research; and the bulk of the R&D goes towards project research. I would say, of that, 50 percent is hardware, and the other half is in software development.

Chairman HOUGHTON. Well, you know, as you look out at the United States and the world economy, clearly we have got assets and we have got liabilities. One liability we have is wages. I mean, we just cannot compete with Sri Lanka or Indonesia or things like that. So, we have got to have new products; we have got to have new science; we have got to have new things coming along. So, the question of the R&D tax credit is, is it geared toward those new

things rather than just sort of sustaining some sort of quasi-technical work which is done in firms? Maybe Mr. Capps or Mr. Sample would have comments about that.

Mr. CAPPS. Yes, I think it is. Again, it is intentionally designed broadly, but what it results in is improvements in products, processes and capabilities across all industries, which ends up translating into productivity increases. I know that in the information technology industry, what IBM does, what EDS does, what Microsoft does, is to create the ability to use information and leverage off information in ways that were not possible 10 years ago.

One person can do more than what one person could do back then; we are increasingly seeing that trend and have seen it help keep inflation down.

Chairman HOUGHTON. Can I just interrupt a minute? I agree with you, and you are expressing it much better than I, but I think the question I have is if you look over the next hill and see the science evolving as it is now, and you see the tremendous international competitive forces, is the Government and university and business community there—are we doing the right things for one another?

We cannot create jobs, obviously; but we can create an atmosphere where those jobs are stimulated. The question is if you look at the R&D tax credit, is it really pointed towards those things which would create the new rather than just sustain something which has already been developed?

Mr. SAMPLE. Mr. Chairman, I think the R&D credit does a great job of focusing companies on technical innovations and creating more high-skilled jobs to enable our workers to compete with some of the other economies you have mentioned that are more competitive on a basic wage rate. It does that in a couple of ways. First, the research has to be in the technology area in order to qualify for the credit.

Second, the research—

Chairman HOUGHTON. Research has to be in the technology area? Research has to be in the research area.

Mr. SAMPLE. But only in technology. It has got to be basically the physical sciences, and computer sciences. So, it has basically got to be physics, biology, chemistry or computer sciences. For example, social research, as important as that might be, does not qualify for the credit.

Chairman HOUGHTON. No, I understand.

Mr. SAMPLE. Second, in order to be eligible for the credit, the particular development project has to involve a process of experimentation, which means that companies have to try to do something with the research project that they currently do not know how to do. A significant element of the project has to involve trying to do things through a trial-and-error process that they do not know how to do. And, lastly, only a very narrow range of expenditures qualify for the credit. Primarily it is salaries and wages paid to people performing direct R&D activities.

So, the credit focuses companies on doing technology research to learn things that they currently do not know how to do, and the only way they can continue to qualify for the credit is to increase their qualifying expenditures, which are, I think as a general mat-

ter for the R&D Credit Coalition companies, over 75 percent of the expenditures are for additional salaries and wages, and in my company it is over 90 percent.

Chairman HOUGHTON. Good. Thanks very much.

Mr. Coyne?

Mr. COYNE. Thank you, Mr. Chairman. I would like to ask the panelists if the nature of your R&D at your companies is affected by the fact that you are on a four-year leash as it relates to R&D, as opposed to if it were permanent? Would the nature of your R&D change? Would it be different?

Mr. SAMPLE. Well, I do not think the nature of the R&D would change in that in order to have a successful R&D project, you are going to have to commit to making a long-term multi-year investment in product development. The impact of making the credit permanent would basically increase the incentive that is provided by the R&D credit for companies to do even more R&D than they are doing now.

Mr. COYNE. Does anyone else want to comment?

Mr. CAPPS. It affects your ability to model a benefit currently for more than four years, next year for more than three years. At EDS, most of our research projects are multi-year projects, so that becomes an issue. You cannot outlook the full benefits, so you are not getting the full bang for the buck.

Mr. COYNE. Did you want to comment?

[No response.]

Mr. COYNE. Okay. I wonder if you could comment on how real or unreal is the problem we hear so much about, businesses not being able to find and hire trained workers to do the necessary work that the corporations have to do?

Mr. CAPPS. Yes, I think it is a very real issue. I think we are already seeing that and experiencing it in the information technology industry. I don't know what the exact numbers are, but I have heard we have over one million unfilled positions as I am speaking to you. Those are good positions, high-skill, high-paid positions and there are not the people to fill them.

They are projecting that number is on the order of magnitude of four million unfilled positions by 2004. So, it is a real issue. It is an immediate issue. We are facing that today.

Mr. COYNE. How about IBM and Microsoft and Mrs. Hutter's company?

Ms. EVANS. We are experiencing the same thing; and clearly in the area of science and engineering, it has not been really as great a focus in this country, certainly at the K–12 level. We are finding a shortage of people in those skills in this country and we have had to use the H1B visa program to fill those jobs. I also don't know the numbers, but it is very real in the IT sector where the skills required are increasing exponentially as the technology changes. So, it is a problem.

Ms. HUTTER. I just want to follow-up that that is a problem, even though the level that we are working on obviously is much different. Even in our small company, we have three vacancies in our engineering department—and also the caliber of engineers—maybe an example of my getting old, but some of these young people coming out of the schools, they know an awful lot about computers, but

they don't know what they are looking at on the screen. They have never actually gone out and had to make something, and that is one problem that we are seeing.

Mr. SAMPLE. It is probably one of the most important issues facing our company as we look to how we are going to continue to succeed and grow. I think we ended our last fiscal year with over 4,000 unfilled permanent full-time positions, and I think we are going to plan to hire another 4,000-plus this year. I do not know where we will be able to find them. The increase in the high-tech economy in the Puget Sound area, as well as in the Nation as a whole, means we are competing now with RealNetworks, with Amazon, a lot of high-tech companies, and we just can't find the people to fill the jobs.

Mr. COYNE. Does this extend to the floor workers, people working on the floors of the factories, or is it just the engineers and high-tech and computer science engineers and technicians?

Mr. SAMPLE. Well, in our company, very few of our employees are involved in the operation side. Most are development, sales and marketing, technical jobs. It extends across the board, though.

Mr. CAPPS. Yes, I think the numbers I was throwing out are more for the skilled workers that have a higher level of education and training, but I think we are starting to see strains on even the lower end of the workforce. And so it is a broader issue, I think. It goes deeper.

Ms. EVANS. I would agree with my colleagues. The upper end is probably where the greatest shortage is, but it is starting to be apparent at the lower levels, too, of lower-skilled people in our industry.

Mr. COYNE. Thank you.

Chairman HOUGHTON. Ms. Dunn?

Ms. DUNN. Thank you, Mr. Chairman. It has been a fascinating panel. It is interesting as we reach out—I don't see what is wrong with moving to the West, Mr. Chairman. I think moving to the West is a good thing. There is a lot of appeal in beautiful States like Nevada and Washington.

Chairman HOUGHTON. Well, you are outvoted two-to-one.

[Laughter.]

Ms. DUNN. I will bring my support troops. I want to especially welcome Mr. Bill Sample of Microsoft, who, in my neck of the woods, certainly has done as much as any company in the Nation, I am sure in the world, to educate people on a variety of tax issues and tax-related issues, taxation on the Internet, this issue we are talking about today, R&D credits, which I have never found anybody who doesn't agree that we should have permanent R&D credits. This is just a monolithic movement over the last few years and a frustration when we couldn't get it made permanent last year. We could get it to at least cover the next five years.

So, it is something that I know is very important and you have a great support group here in the Congress, if we can make sure we find the money to fund it. I wanted to just ask a very practical question that would help me to imagine the practical effects of the unpredictability if the R&D credit is not made permanent. In the last few years, it has been for fewer than five years. In some cases, I think we have gone past the deadline and we have had to do a

catch-up R&D. What actions do your companies take in order to deal with this unpredictability and what kind of costs do you incur? What can we use in talking about this issue that is real-life, from the front lines, to help us bring on the folks who don't understand the value of the R&D tax credit?

Mr. SAMPLE. Thank you. Well, as I said, our R&D projects are planned years in advance and at a minimum we spend probably three-to-five years on a particular product. Windows 2000, which we released last fall, began development in the mid 1980s. So, every year, when we go through our budget cycle, we have to make commitments to projects which our level of effort we know is going to have to be maintained years into the future.

In the 1980s, I think the financial people in our industry were more willing to rely on extensions of the R&D credits when looking out over two, three, four-year time horizons. But, in 1995, the credit lapsed and it was not extended until the following year and there was a twelve-month gap where there was no credit. After that twelve-month gap, I don't know any tax professional that would recommend to their CFO to count on the credit beyond the extension period, 1995 to 1996—there was a twelve-month gap. And, so, I think it is more critical now after the 1995-to-1996 gap than it ever has been to make the credit permanent.

Ms. DUNN. Does anybody else wish to comment on the cost to your company or your business plan as you see that there is some unpredictability?

Mr. CAPPS. I think our experience at EDS has been similar to what Bill described at Microsoft. Before we had the gap, I was predicting with more confidence that the credit would be extended and recommending that our people recognize that and take that into account. But, since that, I would discount that a certain amount and it just hasn't carried the same weight that it would if it was permanent.

Ms. EVANS. In the case of IBM, certainly long-term planning is critical and we would experience the same thing. So, to the extent that you have a sufficient horizon for these projects, some of which I talked about earlier, tapping some major medical and environmental issues, it is difficult for you to be able to plan and predict when you have these long-term projects. So, it is a problem for us.

Ms. HUTTER. I think a pervasive argument, even in the small companies, is that R&D is inherently risky and you are now having an additional risk of a credit that you are counting on that is supposed to be your incentive is also a risk—in other words, it is just a multiplier. And I think for us it is just you can't count on it, and that makes another uncertainty, which tends to take money away from that type of work.

Ms. DUNN. Let me just ask one brief question, Mr. Chairman. The R&D can only be applied to research and development done in the United States. How extensive is that credit? Are you finding your companies are restricting R&D to the United States because the credit means enough to you or are you going overseas?

Mr. SAMPLE. Well, every year over the past several years, we have been increasing our R&D spending in the U.S. by probably three-quarters-to-a-billion dollars a year and probably adding several thousand R&D heads a year. So, every year the management

at Microsoft has to decide where to make that incremental investment and other jurisdictions compete for our R&D investment. And one of the ways they compete is by making it cost-attractive in a variety of ways, including offering tax incentives.

Our management is keenly aware that the R&D credit can reduce the cost of our doing research in the United States by about five-to-six-and-a-half percent on qualifying expenditures. I can tell you that is a big enough number to get the attention of our senior management all the way to the top. There is really only one tax issue I get e-mails from our chairman about, making sure it is still around, and that is the R&D credit.

Mr. CAPPS. At EDS, the majority of our research is done in the U.S. We have had some intense pockets of research outside the U.S. We acquired a company a number of years ago that had a research group in England, and we have continued that. We did some research through a joint venture up in Canada. Both those jurisdictions had incentives for research that were attractive.

As we go forward—we are in a very competitive global environment— all these things come into play and you look at the cost of a labor force, the tax regime. All those things work into the model as far as where are you going to put various operations and where are you going to grow. So far we have been fortunate in being able to maintain the bulk of our R&D here, but that is a growing issue. A lot of countries offer very attractive financial and tax incentives to locate research there.

I think the OECD recently did a study looking at nine countries, and saw the U.S. as third from the bottom as far as the relative incentives that it was providing.

Ms. EVANS. I wouldn't say we do R&D in this country because of the credit, because 85 percent of our research and development is done in the United States and that is the legacy of our starting off in New York with the Watson Laboratory, which is the main laboratory, and it cooperates with our laboratory in Almaden, California, and then there are other labs around the country.

But over 85 percent of our research and development is done in this country and the fact that the credit does benefit U.S. research is helpful, but it is not a reason that we do it here in this country.

Chairman HOUGHTON. Just one final question. IBM has a large research laboratory in Switzerland. Do you get tax credits in Switzerland for R&D?

Ms. EVANS. I do not know the answer to that. I can find that out.

Chairman HOUGHTON. It is not important. Well, look, thank you very much. I certainly appreciate it. The meeting is adjourned.

[Whereupon, at 11:44 a.m., the hearing was adjourned.]

[Submissions for the record follow:]

Statement of American Textile Manufacturers Institute

The American Textile Manufacturers Institute (ATMI) welcomes the opportunity to include the following comments in the record of the September 26, 2000 hearing held before the House Ways and Means Subcommittee on Oversight with respect to the tax code and the new economy. ATMI will focus its comments on the Treasury Department's analysis of cost recovery provisions in its recent Report to Congress on Depreciation Recovery Periods and Methods ("Report on Depreciation").

ATMI is the national trade association for the U.S. textile industry. The ATMI Tax Committee, which developed the information and proposals contained in these

comments, consists of several dozen tax executives from various ATMI member companies of all sizes.

Since the American textile industry is a capital intensive industry, ATMI has historically taken a great interest in tax depreciation policy. For example, ATMI worked closely with Treasury representatives in the early 1960's in the development of the Rev. Proc. 62–21, 1962–2 CB 418, which established the Class Life System, and then in the late 1960's and early 1970's with Congress and the Treasury in the enactment and implementation of the Asset Depreciation Range System (ADR) for assets placed in service after December 31, 1970. We also have taken an interest in the enactment and implementation of both the Accelerated Cost Recovery System (ACRS) and the Modified Accelerated Cost Recovery System (MACRS).

We are pleased that Congress is again studying the recovery periods and depreciation methods under Section 168 of the Internal Revenue Code. As you are undoubtedly aware, there has been no change in class lives since 1981, and further, there has been no significant change in depreciation policy by Congress since MACRS was established in 1986.

Upon review of the Treasury Department's Report on Depreciation, we cannot help but conclude that the time-consuming and expensive studies proposed by the Treasury Department may not be necessary at all in connection with your efforts to improve upon the nation's system of recovery periods and depreciation methods under section 168. ATMI submits that Congress could more efficiently promote the creation of capital in the United States by implementing some or all of the proposals detailed below without the necessity of engaging in the lengthy and expensive studies suggested by the Treasury Department.

The Importance of Tax Depreciation Policy to the Textile Industry

As noted above, the American textile industry is a capital intensive industry and as a consequence capital recovery depreciation policies are of paramount interest to it. We currently spend over $2 billion annually in capital investment in order to modernize our plant and equipment, which is absolutely essential for our companies to remain competitive in the global economy.

In addition, there are two other factors regarding the textile industry that we believe should be given consideration by Congress in connection with any modification of Section 168.

The first of these two factors is that special attention should be given to aiding struggling industries, particularly those industries such as steel and textiles (which are so critical to our national defense and to our overall economy) that must compete with surging imports from countries that provide a much more supportive environment to their industries.

The textile industry averaged only 2.28% profit on sales and 3.34% profit on assets over the period from 1987 through 1995. This compares to an average of 4.10% profit on sales and an average 4.52% profit on assets over the same period for all manufacturing companies (including textile companies). For the most recent years, the profitability of the American textile industry has fallen even further behind the average as shown by the following schedule:

	U.S. Textile Industry		**All U.S. Manufacturers**	
	Return on Sales	Return on Assets	Return on Sales	Return on Assets
1996	2.6%	3.8%	6.1%	6.5%
1997	2.8%	4.0%	6.3%	6.6%
1998	3.2%	4.3%	6.0%	6.0%
1999	1.3%	1.6%	6.2%	6.1%

Much of this poor performance of the American textile industry in even boom times is attributable to the rapid acceleration of imports. The following table tracks the growth in textile and apparel imports (measured in square meter equivalents —SME) to record levels for each year during the period of 1989 through 1998:

Growth of U.S. Textile and Apparel Imports, 1989–1998

Year	Imports (sme in billions)	Change from prior year
1989	12.144	+13.01%
1990	12.195	+0.42%

Growth of U.S. Textile and Apparel Imports, 1989–1998—Continued

Year	Imports (sme in billions)	Change from prior year
1991	12.800	+4.96%
1992	14.521	+13.45%
1993	15.846	+9.12%
1994	17.286	+9.09%
1995	18.308	+5.91%
1996	19.063	+4.12%
1997	22.895	+20.10%
1998	25.945	+13.32%
1999	28.615	+10.29%

The plight of the textile industry can be demonstrated by many other objective measurements. Textile employment has been declining for many years and declined at rates that exceeded productivity growth in each of the years 1993 through 1998. Plant closings are now a common occurrence in the American textile industry. Yet another objective measurement is the precipitous decline in the market value of shares of most publicly traded American textile companies in the face of a roaring bull market.

The second factor is the normal wear and strain placed on textile machinery by the long and continuous hours of operation of most textile machinery. When business conditions permit, textile machinery is operated continuously 24 hours a day, seven days a week (minus normal downtime for routine maintenance). This, of course, can shorten the life of this machinery.

We submit that these factors support one or more of the proposals outlined below as being particularly important for the textile industry. However, we understand that any legislation may not be industry specific and we submit these proposals for general consideration as well as for targeted relief for struggling industries such as the American textile industry.

Depreciation Proposals of ATMI

The goals of our proposals are to allow more rapid recovery of the costs of machinery, equipment and buildings, to further simplify tax depreciation procedures, and to aid struggling American industries so that they can better compete against imports that have become even more damaging, especially because of surges from Asian countries whose currencies have devalued over the past several years. To accomplish these goals, we propose the following modifications in MACRS (and to the extent relevant in ACRS):

1. Replace the 200 percent declining balance method with a 300 percent declining balance method as the general applicable depreciation method under Section 168(b). This proposal recognizes that depreciable lives have not been reconsidered in many years and that technological advances have greatly accelerated during this period, rendering much of the old technology obsolete. It permits this adjustment to be made without the delay, expense and complications that would result in undertaking an industry by industry, machine by machine study. If not adopted generally, we propose this change for capital intensive industries that are facing increasingly intense competition from foreign companies that enjoy more favorable tax regimes.

2. Allow a certain percentage of the cost of depreciable property to be expensed in the year in which such depreciable property is placed in service. The portion not expensed would then be depreciated in accordance with Section 168, or preferably depreciated under Sec. 168 as modified by our first proposal. This proposal is a simplified approach to account for the inflation factor in replacing depreciable property and to reflect accelerating obsolescence and increased use of such property. As in the case of other of our proposals, if not adopted generally, this proposal should be targeted to distressed industries. We proposed that the percentage expensed be at least 20%.

3. The establishment of a deductible repair allowance that would permit the taxpayer a deduction for actual repair expenditures not to exceed 20% of the unadjusted cost basis of property in each applicable recovery period category (see Sec. 168(c)). One of the most common items of controversy in the audit of tax returns of manufacturing companies is whether expenditures made with respect to machinery, equipment and buildings are ordinary repairs and maintenance expenses that are deductible under Sec. 162, or are capital improvements that must be capitalized under Sec. 263. Under the ADR system, an annual asset guideline repair allowance percentage was provided and, if the taxpayer elected, expenditures

that might otherwise be classified as Sec. 162 or Sec. 263 expenditures could be deducted to the extent of the applicable percentage. See Rev. Proc. 77–10, 1977–1 CB 548 (the repair allowance percentage for textile machinery was in four main categories: 22.2–16%, 22.3–15%, 22.4–7% and 22.5–15%). Unfortunately, this statutory repair allowance percentage was not continued under ACRS or MACRS and, consequentially, the old item by item audit disputes resumed and, if anything, has been accentuated by Indopco, Inc. v. Commissioner, 112 S. Ct. 1039 (1992). See Rev. Rul. 94–12, 1994 −1 CB 565.

In fact, the failure of ACRS and MACRS to provide a repair allowance procedure seems incongruous in view of the fact that these systems address all of the other items that had been sources of dispute and conflict under general depreciation methods (e.g., lives, rate of depreciation, method of depreciation, salvage and time of placement in service).

We recommend a 20% allowance because it is somewhat higher than the percentage allowance under ADR (see Rev. Proc. 77–10, supra), which proved to be inadequate in practical experience in our industry.

4. With respect to buildings, we propose that capital improvements to buildings be depreciable over a period of years that is no longer than the remaining depreciable life of the building. Under this proposal, in the typical situation when a capital improvement is made to a building (e.g., replacement of a roof) a taxpayer would have the option of adding such improvement costs to the adjusted basis of the building so that it would be depreciable over the remaining life of the building.

5. While we have no precise proposal, we recommend that Congress reconsider and shorten the lives of buildings used in manufacturing.

6. We recommend that consideration be given to providing shorter lives for used property.

7. Under all circumstances and in all events, we propose that the alternative minimum tax, if not entirely repealed, be modified to eliminate depreciation as an adjustment in computing AMT income (i.e., repeal Sec. 56(a)(1)) and also in calculating the adjustments for corporations based on adjusted current earnings under Sec. 56(g). These AMT provisions greatly complicate the preparation of corporate returns even where no AMT is due. They require that the taxpayer maintain an additional and separate depreciation system. Where these adjustments do cause AMT liability, the result is to undermine the policy of Sec. 168. We believe that allowing AMT to undermine Sec. 168 is bad tax policy. We urge Congress to eliminate (or modify) depreciation as an adjustment in computing AMT. (We recognize that these AMT proposals raise issues regarding adjustments under Sec. 481 and/or in modifying Sec. 53 credits.)

8. Finally, we recommend that Congress authorize the Treasury Department to enter into depreciation agreements with any industry. This could allow an industry to perform depreciation analysis using a reasonable method of estimation. If this study followed specific procedures and those procedures were reviewed by Treasury, then the assets' class lives could be changed administratively. This method could be implemented by an "Advance Depreciation Agreement," on a basis similar to advance pricing agreements under Sec. 482.

We look forward to working with you to address any technical points concerning any of our proposals.

Conclusion

We commend Congress for undertaking this needed comprehensive study of the recovery periods and depreciation methods under Sec. 168. We would welcome the opportunity to meet with Committee Members and staff, both to discuss our proposals and also to learn from you of other proposals being considered in order that we might have an opportunity to comment.

Statement of Henry George Foundation of America, Columbia, Maryland

A NATIONAL TAX CAN PROMOTE ECONOMIC GROWTH & JOBS

THE PROBLEM—The electorate is enamored of government programs despite the taxes needed to finance them. That can only be changed if the government can come up with a revenue tax that actually promotes economic growth and jobs.

THE SOLUTION -Fortunately, there is such a tax. We can start funding the government with a tax on land values. If that tax is increased, land values will not be decreased. A tax on land values would then replace national taxes on production.

THE MORAL ASPECT—Workers and businessmen are entitled to all they produce; if you produce something, it's yours. Then there's nothing left for the landowner to justifiably own. No human being ever produced the land. If landowners (or slaveowners) get something for not producing, then workers and businessmen get less than what they produced. Landowning can no more be justified than slaveowning. Tax the one, abolish the other.

ECONOMIC BENEFITS—When we tax production, we have less production. When we tax land values (or the annual imputed and actually-collected land rent) then land-sites must be more efficiently used (which by itself also means more production). So—tax land values, not things produced. If this is done, we'll have economic growth and more jobs, and yet the government can gets the revenue it needs. As a bonus, most voters would get tax reductions (since they own little valuable land).

EMPIRICAL SUPPORT—*All* 17 studies of the twenty jurisdictions which have already adopted the two-rate tax show that spurts in new construction and renovation follow two-rate adoption within three years, and these two-rate jurisdictions have always out-constructed and out-renovated their nearby comparable one-rate neighbors. *All* independent studies by university researchers fully corroborate these 17 studies.

IMPLEMENTATION—In the first year, each state should levy a surtax of 3% of its assessed land value and remit the revenue thus collected to the national government, who will then use the revenue to replace a particular tax on production which it is already levying, such as part of the income tax. The U.S. Congress used this type of revenue tax four times in the past—in 1798, 1813, 1815 and 1861; the Constitution allows it. It can also establish a Federal Equalization Board.

Tax Land Value Not Production Tax Land Value Not Production Tax Land Value Not Pro

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INTERNATIONAL FRANCHISE ASSOCIATION
WASHINGTON, DC
October 6, 2000

The Honorable Amo Houghton
Chairman, House Ways and Means Oversight Subcommittee
1136 Longworth House Office Building
Washington, DC 20515

Dear Chairman Houghton:

The House Ways and Means Oversight Subcommittee recently held a hearing to review the Treasury Department Report to Congress on Depreciation Recovery Periods and Methods. Although the International Franchise Association (IFA) was unable to provide testimony at the hearing, I would like to submit our comments for the record.

IFA believes that the Treasury Report substantiates our belief that depreciation schedules in general need to be modernized, and we are encouraged by some of the findings in the study including: . . . that "the current depreciation system is dated". . . that "the asset class lives that serve as the primary basis for the assignment of recovery periods have remained largely unchanged since 1981". . . and that "entirely new industries have developed in the interim." We believe that these points speak directly to the need to address depreciation schedules for franchised real property.

The International Franchise Association (IFA) serves as the voice of franchising both domestically and internationally. We represent both franchisors and franchisees and our membership includes more than 800 franchise concepts in 75 different industries—from quick service restaurants to lawn care, to maid service and photo development. Franchising, as a concept, ties the spirit and ingenuity of local small businessmen and women to the advantages of a national brand name, accessible investment capital and an established marketing platform.

When depreciation schedules were last updated about 20 years ago, franchising was certainly a viable business concept, however it was not the economic engine that it is today. Today, franchising accounts for $1 trillion in U.S. retail sales and more than 8 million jobs. Today's business climate now has more than 75 different industries that utilize the franchise business format. By shortening the depreciation schedules for franchises, Congress would not only allow the tax code to recognize

this leading segment of our economy, but also to better reflect the true economic life of franchise assets.

Current law requires franchisees to depreciate their real property over a 39-year period. However, the typical franchise agreement between a franchisor and franchisee specifies ownership for only a 15 or 20-year period. (In some cases, the contracts are renewed, but only under terms that are then current.) These contracts also frequently require franchisees to undergo expensive refurbishments every 5 to 7 years. Under current law, these very common redecorations and upgrades must also be depreciated over a 39-year period. Also, improvements to leaseholds, which typically have a length of 7 to 10 years, also must be depreciated over a 39-year period.

On behalf of our more than 30,000 member franchise outlets across the country, we urge Congress to take the necessary steps to modernize franchised real property depreciation schedules.

We urge Congress and we thank you for holding your Oversight Subcommittee hearing on this important issue.

Sincerely,

BRENDAN J. FLANAGAN
Director of Government Relations

STUDY ON THE EFFECTS OF DEPRECIATION ON THE PWB AND ELECTRONICS ASSEMBLY INDUSTRIES

Executive Summary

Printed wiring boards (PWBs) and printed wiring assemblies (PWAs) form the foundation for virtually all electronic systems in the world. They are the backbone of all computer and electronic products. Not only are they essential to all electronic products, they are vital to the changing technology in the automotive, communications, consumer products, computer, government and military, industrial and medical markets.

The United States is struggling to remain a global leader in the face of strong international competition. In 1984, the United States owned 40 percent of the world market. Since that time, however, U.S. share of the world market has eroded. By 1999 the United States held only a 26-percent share, with Japan in the lead at 29 percent. Other Asian producers, with Taiwan moving up very quickly, accounted for 23 percent of world production. Absent any policy or overall economic change, this downward trend is likely to continue.

Another area where the U.S. industry lags behind its foreign competitors is cost recovery. Most foreign competitors recover a greater percent of asset costs in the first year, thus placing U.S. companies at a competitive disadvantage. As electronic equipment becomes more technologically advanced and the pace of technological innovation quickens, additional investment becomes necessary. This new investment is relatively more costly to U.S. companies than to offshore competitors.

The Congress modified depreciable service lives many times since the early 1950s. The last modification, however, was nearly 15 years ago. In fact, many service lives have remained unchanged for more than 20 years. In the PWB and PWA industries, the past 20 years have been characterized by sweeping technological, organizational and competitive changes. Previous Congressional intent indicated a need to keep depreciation policies consistent with economic pressures. Clearly, depreciation policy has not kept pace with the technological change and economic pressures facing the PWB and PWA industries.

The current proposal to reduce from five to three years the service lives of equipment in the PWB and PWA industries would provide this necessary and overdue change.

Industry Overview

Electronic interconnects form the foundation for virtually all electronic systems in the world. They are the backbone of all computer and electronic products. Printed wiring boards (PWBs) and printed wiring assemblies (PWAs) connect and house other electronic components, integrating the entire circuitry of all electronic products. Without electronic interconnects, these products would not function.

PWBs and PWAs are essential to not only all electronic products, but are also vital to innovative technology in the automotive, communications, consumer products, computer, government and military, industrial, and medical markets.

To the average consumer, the words "electronics industry" conjure an image of large corporate businesses, such as Hewlett-Packard, AT&T, IBM and others. These large firms, known as original equipment manufacturers (OEMs), produce the finished electronic product. OEMs are, however, only one portion of the electronics industry. The electronic interconnect industry, comprised of both the PWB and PWA sectors, supplies products and services critical to OEMs. PWB and PWA growth depends, therefore, upon OEM growth.

As OEM firms experienced rapid growth in the 1980s, they began to rely more heavily on the PWB/PWA sectors for inputs to their manufacturing processes. Emerging product shortages from abroad and rising production costs domestically reinforced this trend. This drove OEMs to shift portions of their fixed and operating costs to other firms. PWB/PWA firms became cost-effective suppliers of quality interconnect products, helping to alleviate product shortages prevalent in the electronics food chain. Over time, PWB/PWA firms expanded their production processes to include product testing, design, and development, further elevating their importance to the electronics industry as a whole.

Today, the PWB/PWA sectors remain a vital part of the electronics industry. With advances in technology occurring rapidly in other industries, the demand for high-density electronic interconnects is ever increasing. Industries such as the automotive, computer, telecommuni-cations, consumer, medical, and aerospace industries have introduced more electronic equip-ment and components in their products and, consequently, have high demand for interconnect products. While news of brisk product demand is a favorable condition facing PWB/PWA manufacturers, they face significant economic pressures that hamper their ability to meet such demand.

International Markets

The U.S. printed wiring board industry remains a global leader, despite facing strong international competition. In 1984, U.S. industry owned 40 percent of the world's PWB market.[1] Since that time, however, the U.S. market has experienced a steady decline in world market share as a result of growing international competition.

In 1999 Japan was estimated to have 29 percent of the world market for rigid printed wiring boards, with the United States next at 26 percent. Other Asian producers came in at 23 percent, with Europe (14 percent) and all others (8 percent) accounting for the rest. Taiwan has greatly expanded its PWB/PWA capacity and is challenging U.S. industry for market leadership.

Japan's dominance is attributable to lower costs in labor, raw materials, environmental protection and safety compliance. In addition, the U.S. industry lags behind Japan in the use of automated process improvement techniques and in some technology areas including design-tool development, implementation, and usage.[2]

Another area where the U.S. industry lags behind its foreign competitors is in the tax treatment of capital goods. Foreign countries, Japan most noticeably, are able to recover a higher (up to 80) percent of capital costs in the first year of service.[3]

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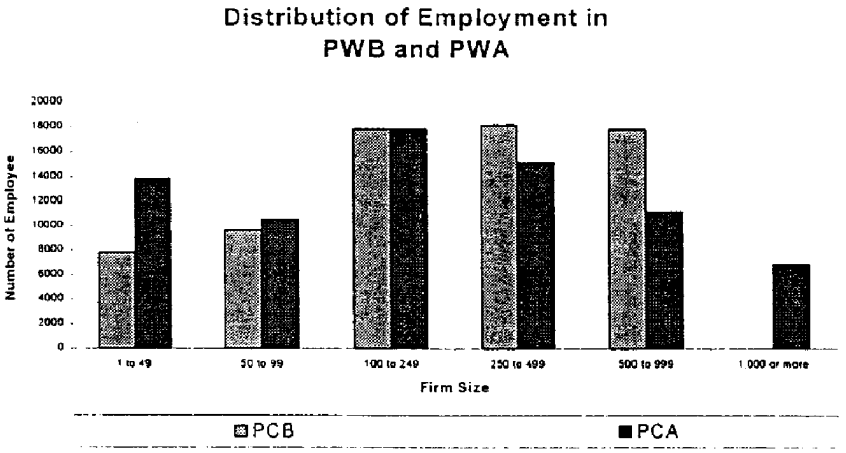
[1] Interconnection Technology Research Institute, Technology Issues facing the Industry, October 1999.

[2] USITC, *Advice Concerning the Proposed Modification of Duties on Certain Information Technology Products and Distilled Spirits,* Report to the President on Investigation No. 332–380, Publication 3031, April 1997.

[3] Data reflected in this graph do not account for differences in the overall tax regime of the country. However, for supporting evidence of international comparisons see "Report of the Technical Committee on Business Taxation," Ministry of Finance, Canada, 1998.



As the graph indicates, major foreign competitors recover a greater percent of asset acquisition costs in the first year, thus placing U.S. firms at a disadvantage relative to those competitors. Discrepancies in the cost structure of foreign business and the associated tax treatment raise issues of international competitiveness. To the extent that these differences arise from domestic policies that the federal government can modify to enhance U.S. competitiveness, businesses are concerned with these differences. In response to these concerns, legislative changes focused on leveling the playing field have been the subject of numerous domestic trade and tax proposals.

Domestic Markets

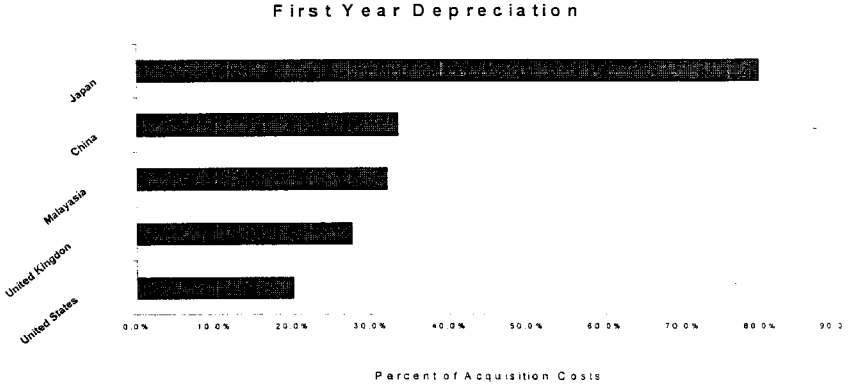
U.S. companies producing PWBs and PWAs had shipments of $9.6 billion and $25.6 billion, respectively, in 1997.[4] According to the 1997 Economic Census, employment in the PWB, PWA and supporting industries is approximately 250,000.[5]

The 1997 Economic Census Survey of Manufacturing reports 657 and 1,315 companies involved in the manufacture of PWBs and PWAs, respectively. These figures are consistent with Market Research division of the IPC (Association Connecting Electronics Industries). Based on extensive membership surveys and statistical analysis, the IPC reports that the industry is comprised of mostly small businesses, with approximately 90 percent having shipments of less than $10 million each in 1998.[6]

[4] Data from US Department of Commerce, Economic Survey, Manufacturing Industry Series, EC97M–3344G; EC97M–3344H(revised); and EC97M–3344B; 1997.

[5] Ibid., Includes the related interconnect industry (NAICS 334417; EC97M–3344G; 1997.

[6] *IPC Study of Financial Benchmarks for 1997* and IPC Assembly Market Research Council, *The 1998 Market for Electronics Manufacturing Services Providers/Contract Assembly Companies.*



The industry's preponderance of small firms is a result of a larger trend in the electronics industry. As larger corporations returned to their "core competencies," they began contracting out to smaller firms to produce inputs formerly produced in-house.[7] As large firms began downsizing and eliminating certain in-house production, small firms emerged to fill that production void. As a result, the importance of small firms to the economy has grown over time. In addition to supplying important inputs to the electronics production process, small firms became important to such issues as job creation and economic expansion.

Nationally, firms with fewer than 100 workers employ as many firms with 500 or more workers. Within the PWB and PWA industries, small firms make important contributions to employment, with heaviest concentration in small and mid-sized firms. The graph distributes employment by firm size for the PWB and PWA industries. As shown, the PWB and PWA industries reflect the national trend in employment and job creation.

Importance of Capital Cost Recovery

One area that affects the firm's ability to compete is the investment in new capital and the means of recovering capital costs. Since the markets for electronic interconnects are characterized by a high degree of competition both internationally as well as domestically, cost recovery becomes a very important variable in the firm's competitive equation.

For tax purposes, capital cost recovery typically means recovering the cost of capital over a useful service life. However, the present cost recovery system, the Modified Accelerated Cost Recovery System (MACRS), has very loose ties to a useful service life. In creating that system, the Congress intended to improve competitiveness through its tax legislative changes:

"An efficient capital cost recovery system is essential to maintaining U.S. economic growth. As the world economies become increasingly competitive, it is most important that investment in our capital stock be determined by market forces rather than by tax considerations...output attainable from our capital resources was reduced because too much investment occurred in tax-favored sectors and too little investment occurred in sectors that were more productive but which were tax-disadvantaged. The nation's output can be increased simply by a reallocation of investment, without requiring additional saving."[8]

Despite Congressional intent to help U.S. firms remain competitive, the MACRS has remained essentially unchanged since it became law in 1986. Unfortunately, the decades since the 1980's were periods of dramatic growth and change in international and domestic markets.

One such change is the rate of change in technological advances. Clearly, with such dynamic changes in technology, competitive firms may face limitations with an essentially static cost recovery system. One example of this technological change is that of electronic assembly equipment and devices. The following time line demonstrates the pace at which change occurred in this industry.

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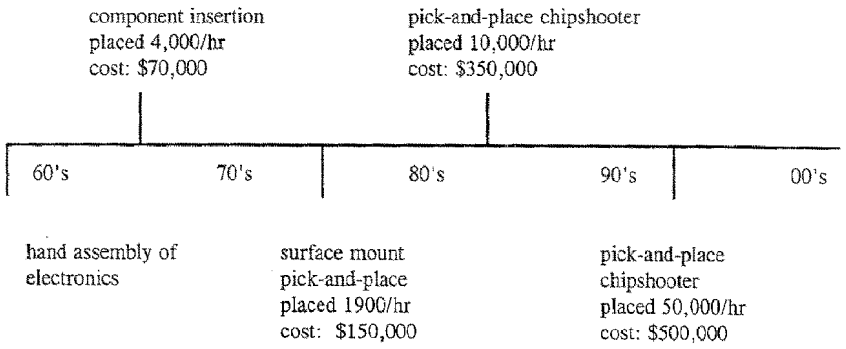
[7] Harrison, B., *Lean and Mean,* New York: Basic Books, 1994.

[8] Joint Committee on Taxation, General Explanation *of the Tax Reform Act of 1986,* May 4, 1987.

Progression of Electronics Assembly Equipment[9]

Technological advance has occurred at steady pace. These advances had their costs, however, as demonstrated by the price of new equipment. Since the early 1970s, the price of this equipment increased from $70,000 to $500,000. This price change represents a 700-percent increase.



While the price increase is quite dramatic, an even more dramatic trend occurred in the productivity of the machinery. "Pick-and-place" equipment began placing components at a rate of 1,900 per hour. Current technology can place components at a rate of 50,000 per hour. This change in technology represents a 2,600-percent increase.

Economic versus Tax Depreciation

Since the 1980s, tax legislation has attempted to conform tax depreciation with that of economic depreciation. The move toward shorter service lives and accelerated methods has, for the most part, created a correspondence between the two patterns. Because tax depreciation is a financial concept and economic depreciation is a physical value concept, however, the correspondence is not always consistent.

Numerous factors influence the correspondence between economic decline and tax depreciation. Such factors include inflation, interest rates, tax rates and other tax parameters, and technological change.

When inflation levels are sufficiently high, these levels erode the value of the depreciation deduction. High levels of inflation also increase the cost of borrowing by increasing interest rates. High interest rates slow investment by adding additional borrowing costs to the purchase price.

Tax rates, in particular, slow investment by reducing available funds. As tax rates increase, investment typically decreases. In other words, as payments to the federal government increase, fewer funds remain to invest in capital stock.[10]

Technological change lowers the economic value of assets. As technological change occurs more rapidly, existing capital is not as valuable as the newer, more advanced capital asset. Consequently, technological change, while offering advances for the production process, imposes the need for continued investment. The previous example of the pick-and-place equipment demonstrates this point. Since the early 1970s, technological change enables such equipment to place 2,600 percent more components per hour. Existing pick-and-place equipment is clearly less efficient and valuable than the newer, faster equipment.

The influence of the economic variables is easily quantified. Technological change, however, is not. As described above, economic depreciation is measured using prices in the used equipment market. Typically, used asset prices reflect the change in value associated with changes in innovation. Yet, there are several reasons why this measure of economic depreciation will not adequately measure the influence of technology on capital goods.

In some industries, technological change in new equipment embodies a greater degree of precision. The old and new equipment create products that are not substitutes for one another. In the case of printed wiring boards, the circuit board with

[9] Data provided by IPC.

[10] The effect of other tax parameters, such parameters as carry over rules, may affect the amount of available funds for investment as well. However, the direction and the magnitude of the effect depend upon the particular provision. Generally, such provisions as credits increase available funds and such provisions as limited deductions reduce available funds.

finer circuitry will have different capabilities (generally better) than those with wider circuits.

This type of technological change is not as easily quantified in the used-asset price, because the used-asset price reflects the value of producing different output. The market, in fact, may exist for the older machine. Consumers may still demand the product from the older asset. Consequently, there may still be a market for the older asset and the used-asset price reflects this value.

This is a common situation in many manufacturing industries. The actual production process may remain virtually unchanged. However, refinements in the finished output continue at a rapid pace, creating a need for new investment. If businesses are unable to keep pace with this level of change, they will be less competitive in both the domestic and international markets.

View of Tax Service Lives

From the outset in 1913, income tax legislation has recognized capital cost recovery as a cost of doing business. The Congress modified depreciable service lives many times since then (e.g., Bulletin F in 1933 and 1945, Revenue Procedure 62–21, and others), particularly from the 1950s to the 1970s. Unfortunately, the last modification was nearly 15 years ago with the appearance of the Modified Accelerated Cost Recovery System (MACRS). Even so, many service lives have remained unchanged for more than 20 years. In the PWB and PWA industries, the past 20 years represent the most dramatic technological change in their market. Previous Congressional intent indicated a need to keep depreciation policies consistent with economic pressures. Clearly, depreciation policy has not kept pace with the technological change and economic pressures facing the PWB and PWA industries. *The current proposal to reduce from five to three years the service lives of equipment in the PWB and PWA industries would provide this necessary and overdue change.*

Reducing Service Lives

Generally, reducing service lives of depreciable assets results in a revenue loss in federal tax receipts. The revenue loss results from the timing difference of the two patterns of depreciation deductions.

In a static world with a constant level of investment, the revenue loss is a result of shifting from later periods to earlier periods the depreciation deduction. This timing change often is referred to as a speed-up or an acceleration of the deduction. No additional deductions are provided with this change.

The benefits of this acceleration of deductions are similar to receiving payments over time. If promised payment of $100, and given the option of two payment periods, which payment period would prove more attractive, three or five years? In either case, the total payments remain the same. Most would agree that, given the time value of money, sooner is preferable to later. This is precisely the situation with depreciation deductions. The deduction represents a net payment to the business.[11] The greater the deduction in the early years, the more funds available to operate and expand business.

Summary

Electronic interconnects form the foundation for virtually all electronic systems in the world. They are the backbone of all computer and electronic products. Not only are they essential to all electronic products, they are vital to the changing technology in the automotive, communications, consumer products, computer, government and military, industrial and medical markets.

SPAN The United States remains a global leader despite facing strong international competition. In 1984, U.S. companies owned 40 percent of the world market. Since that time, however, the U.S. share of the world market has eroded. In 1996, Japan and the United States each were estimated to have 27 percent of the world market.

Another area where U.S. industry lags behind its foreign competitors is cost recovery. Many countries permit their domestic electronic interconnect companies to recover a greater percent of asset costs in the first year. This places U.S. firms at competitive disadvantage relative to their international competitors, given the rate of technological change in this industry. As electronic equipment becomes more technologically advanced, additional investment becomes necessary. This new investment is relatively more costly to U.S. firms.

The Congress modified depreciable service lives many times since the early 1950s. However, the last modification was nearly 15 years ago and many service lives have

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11 The increased deduction represents a decrease in tax liability, which suggests the owner pays himself rather than paying taxes.

remained unchanged for more than 20 years. In the PWB and PWA industries, the past two decades include the most dramatic technological change in their market. Previous Congressional intent indicated a need to keep depreciation policies consistent with economic pressures. Clearly, depreciation policy has not kept pact with the technological change and economic pressures facing the PWB and PWA industries.

The current proposal to reduce from five to three years the service lives of equipment in the PWB and PWA industries would provide this necessary and overdue change.

Statement of James R. Shanahan, Jr., Partner, PricewaterhouseCoopers LLP, on behalf of Tax Council Policy Institute

Mr. Chairman, Members of the committee, on behalf of the Tax Council Policy Institute, I thank you for the opportunity to share our views on the importance of research and development in the context of the new economy and the role of the federal R&D credit. I am Jim Shanahan, a partner with PricewaterhouseCoopers LLP. I respectfully submit this statement on behalf of the Tax Council Policy Institute (TCPI).

The TCPI is a 501(c)(3) research and educational organization affiliated with The Tax Council. Its primary purpose is to bring about a better understanding of significant federal tax policies that impact our national economy through careful study, thoughtful evaluation and open discussion. The TCPI thanks you for focusing on the tax treatment of research and development as part of your hearings on the tax code and the new economy.

Consistent with its mission, the TCPI this coming year will be focusing on the R&D tax credit. On February 15–16, 2001, the TCPI will be hosting a Symposium on the "R&D Tax Credit in the New Economy." I will serve as one of the program managers for this event. We believe that in choosing the R&D Tax Credit as next year's topic (following this year's very successful INDOPCO Symposium), the TCPI has underscored the importance of the R&D credit to the new economy.

As we formulate the program agenda, we foresee speakers from accounting and law firms, academia, Congressional staffs, Treasury, and the IRS sharing their knowledge, expertise, and experience. We hope that the Symposium will facilitate an open discussion forum, highlight the importance of an R&D credit incentive in today's economy, and supply a common ground from which the operation of the R&D tax credit can be analyzed. In general, we intend for the event to provoke thoughts on how the credit can operate and be administered in an efficient, fair, and effective way.