

[JOINT COMMITTEE PRINT]

**DESCRIPTION AND ANALYSIS OF  
CERTAIN TAX PROVISIONS EXPIRING  
IN 1994 AND 1995**

SCHEDULED FOR HEARINGS

BEFORE THE

**SUBCOMMITTEE ON OVERSIGHT**

OF THE

**HOUSE COMMITTEE ON WAYS AND MEANS**

ON MAY 9 AND 10, 1995

---

PREPARED BY THE STAFF

OF THE

**JOINT COMMITTEE ON TAXATION**



MAY 8, 1995

U.S. GOVERNMENT PRINTING OFFICE

WASHINGTON : 1995

90-419

JCS-8-95

JOINT COMMITTEE ON TAXATION

104TH CONGRESS, 1ST SESSION

*HOUSE*

BILL ARCHER, Texas, *Chairman*  
PHILIP M. CRANE, Illinois  
WILLIAM M. THOMAS, California  
SAM M. GIBBONS, Florida  
CHARLES B. RANGEL, New York

*SENATE*

BOB PACKWOOD, Oregon, *Vice Chairman*  
WILLIAM V. ROTH, Jr., Delaware  
ORRIN G. HATCH, Utah  
DANIEL PATRICK MOYNIHAN, New York  
MAX BAUCUS, Montana

KENNETH J. KIES, *Chief of Staff*

MARY M. SCHMITT, *Deputy Chief of Staff (Law)*

BERNARD A. SCHMITT, *Deputy Chief of Staff (Revenue Analysis)*

**[ERRATA]**  
**[JOINT COMMITTEE PRINT]**

**DESCRIPTION AND ANALYSIS OF  
CERTAIN TAX PROVISIONS EXPIRING  
IN 1994 AND 1995**

**SCHEDULED FOR HEARINGS**

**BEFORE THE**

**SUBCOMMITTEE ON OVERSIGHT**

**OF THE**

**HOUSE COMMITTEE ON WAYS AND MEANS**

**ON MAY 9 AND 10, 1995**

---

**PREPARED BY THE STAFF**

**OF THE**

**JOINT COMMITTEE ON TAXATION**



**MAY 8, 1995**

**U.S. GOVERNMENT PRINTING OFFICE**

**90-419**

**WASHINGTON : 1995**

**JCS-8-95**

## **ERRATA FOR JCS-8-95**

### **DESCRIPTION AND ANALYSIS OF CERTAIN TAX PROVISIONS EXPIRING IN 1994 AND 1995**

On page 19, in the sixth line, the two references to "1996" should be "1969." The sixth line should read as follows:

In the Tax Reform Act of 1969 ("1969 Act"), Congress adopted

# CONTENTS

---

	Page
INTRODUCTION .....	1
I. SUMMARY .....	2
II. DESCRIPTION AND ANALYSIS OF CERTAIN EXPIRING TAX PROVISIONS .....	3
A. Tax Provisions Scheduled for May 9 Hearing .....	3
1. Targeted jobs tax credit .....	3
2. Exclusion for employer-provided educational assistance .....	13
3. Orphan drug tax credit .....	16
4. Contributions of publicly traded stock to pri- vate foundations .....	18
5. FUTA exemption for temporary alien agricul- tural workers .....	21
6. Tax credit for producing fuel from a nonconventional source .....	23
7. Transportation fuels tax exemption for com- mercial aviation .....	31
B. Tax Provisions Scheduled for May 10 Hearing ....	35
1. Tax credit for research and experimental ex- penses .....	35
2. Allocation of research expenses to U.S. and foreign income .....	45



## INTRODUCTION

This pamphlet,<sup>1</sup> prepared by the staff of the Joint Committee on Taxation, provides a description and analysis of certain tax provisions that expired in 1994 and of certain tax provisions scheduled to expire in 1995. The Subcommittee on Oversight of the House Committee on Ways and Means has scheduled public hearings on certain expiring tax provisions on May 9-10, 1995.

Part I of the pamphlet is a summary listing of the tax provisions for the May 9-10 Subcommittee on Oversight hearings. Part II is a description and analysis of the tax provisions for the Subcommittee hearings. The May 9 Subcommittee hearing will focus on seven expired and expiring tax provisions: (1) targeted jobs tax credit (sec. 51); (2) exclusion for employer-provided educational assistance (sec. 127); (3) orphan drug tax credit (sec. 28); (4) contributions of publicly-traded stock to private foundation (sec. 170(e)(5)); (5) FUTA exemption for temporary alien agricultural workers (sec. 3306(c)(1)); (6) nonconventional fuels tax credit (sec. 29); and (7) transportation fuels tax exemption for commercial aviation (sec. 4092(b)(2)). The May 10 Subcommittee hearing will focus on: (1) tax credit for research and experimental expenses (sec. 41); and (2) allocation and apportionment of research expenses to U.S. and foreign income (sec. 864(f)).

---

<sup>1</sup> This pamphlet may be cited as follows: Joint Committee on Taxation, *Description and Analysis of Certain Tax Provisions Expiring in 1994 and 1995* (JCS-8-95), May 8, 1995.

## I. SUMMARY

The following is a summary listing of certain tax provisions expiring in 1994 and 1995 that are the subject of the Oversight Subcommittee hearings on May 9-10, 1995.

### *Tax provisions scheduled for May 9 hearing*

The following tax provisions are scheduled for the May 9 Subcommittee hearing (with expiration date and section of the Internal Revenue Code of 1986):

- (1) Targeted jobs tax credit (December 31, 1994, sec. 51);
- (2) Exclusion for employer-provided educational assistance (December 31, 1994, sec. 127);
- (3) Orphan drug tax credit (December 31, 1994, sec. 28);
- (4) Contributions of publicly traded stock to private foundations (December 31, 1994, sec. 170(e)(5));
- (5) FUTA exemption for temporary alien agricultural workers (December 31, 1994, sec. 3306(c)(1));
- (6) Tax credit for producing fuels from a nonconventional source (for binding contracts in effect on or before December 31, 1995, sec. 29); and
- (7) Transportation fuels tax exemption (4.3-cents-per-gallon General Fund tax rate) for fuels used in commercial aviation (September 30, 1995, sec. 4092(b)(2)).

### *Tax provisions scheduled for May 10 hearing*

Two tax provisions relating to research expenses are scheduled for the May 10 Subcommittee hearing:

- (1) Tax credit for research and experimental expenses (June 30, 1995, sec. 41); and
- (2) Allocation and apportionment of research expenses to U.S. and foreign income (taxable years beginning after August 1, 1994, sec. 864(f)).



## **II. DESCRIPTION AND ANALYSIS OF CERTAIN EXPIRING TAX PROVISIONS**

### **A. Tax Provisions Scheduled for May 9 Hearing**

#### **1. Targeted jobs tax credit (sec. 51 of the Code)**

##### ***Prior Law***

##### ***General rules***

Prior to January 1, 1995, the targeted jobs tax credit was available on an elective basis for employers hiring individuals from one or more of nine targeted groups. The credit generally was equal to 40 percent of qualified first-year wages. Qualified first-year wages consisted of wages attributable to service rendered by a member of a targeted group during the one-year period beginning with the day the individual began work for the employer. For a vocational rehabilitation referral, however, the period began the day the individual began work for the employer on or after the beginning of the individual's vocational rehabilitation plan.

No more than \$6,000 of wages during the first year of employment were permitted to be taken into account with respect to any individual. Thus, the maximum credit per individual was \$2,400 in the first year of employment.

With respect to economically disadvantaged summer youth employees, the credit was equal to 40 percent of up to \$3,000 of qualified first-year wages, for a maximum credit of \$1,200.

The deduction for wages was reduced by the amount of the credit.

##### ***Certification of members of targeted groups***

In general, an individual was not treated as a member of a targeted group unless certification that the individual was a member of such a group was received or requested in writing by the employer from the designated local agency on or before the day on which the individual began work for the employer. In the case of a certification of an economically disadvantaged youth participating in a cooperative education program, this requirement was satisfied if the certification was requested or received from the participating school on or before the day on which the individual began work for the employer. The "designated local agency" was the State employment security agency.

If a certification was incorrect because it was based on false information provided as to the employee's membership in a targeted group, the certification was revoked. Wages paid after the revocation notice was received by the employer were not treated as qualified wages.

The U.S. Employment Service, in consultation with the Internal Revenue Service, was directed to take whatever steps necessary to keep employers informed of the availability of the credit.

***Targeted groups eligible for the credit***

The nine groups eligible for the credit were either recipients of payments under means-tested transfer programs, economically disadvantaged (as measured by family income), or disabled individuals.

*(1) Vocational rehabilitation referrals*

Vocational rehabilitation referrals were those individuals who had a physical or mental disability that constituted a substantial handicap to employment and who had been referred to the employer while receiving, or after completing, vocational rehabilitation services under an individualized, written rehabilitation plan under a state plan approved under the Rehabilitation Act of 1973, or under a rehabilitation plan for veterans carried out under Chapter 31 of Title 38, U.S. Code. Certification was provided by the designated local employment agency upon assurances from the vocational rehabilitation agency that the employee had met the above conditions.

*(2) Economically disadvantaged youths*

Economically disadvantaged youths were individuals certified by the designated local employment agency as (1) members of economically disadvantaged families and (2) at least age 18 but not age 23 on the date they were hired by the employer. An individual was determined to be a member of an economically disadvantaged family if, during the six months immediately preceding the earlier of the month in which the determination occurred or the month in which the hiring date occurred, the individual's family income was, on an annual basis, not more than 70 percent of the Bureau of Labor Statistics' lower living standard. A determination that an individual was a member of an economically disadvantaged family was valid for 45 days from the date on which the determination was made.

Except as otherwise noted below, a determination of whether an individual was a member of an economically disadvantaged family was made on the same basis and was subject to the same 45-day limitation, where required in connection with the four other targeted groups that excluded individuals who were not economically disadvantaged.

*(3) Economically disadvantaged Vietnam-era veterans*

The third targeted group was Vietnam-era veterans certified by the designated local employment agency as members of economically disadvantaged families. For these purposes, a Vietnam-era veteran was an individual who had served on active duty (other than for training) in the Armed Forces for more than 180 days, or who had been discharged or released from active duty in the Armed Forces for a service-connected disability, but in either case, the active duty must have taken place after August 4, 1964, and before May 8, 1975. However, any individual who had served for

a period of more than 90 days during which the individual was on active duty (other than for training) was not an eligible employee, if any of this active duty occurred during the 60-day period ending on the date the individual was hired by the employer. This latter rule was intended to prevent employers that hire current members of the armed services (or those departed from service within the last 60-days) from receiving the credit.

*(4) SSI recipients*

The fourth targeted group was individuals receiving either Supplemental Security Income ("SSI") under Title XVI of the Social Security Act or State supplements described in section 1616 of that Act or section 212 of P.L. 93-66. To be an eligible employee, the individual must have received SSI payments during at least a one-month period ending during the 60-day period that ended on the date the individual was hired by the employer. The designated local agency was to issue the certification after a determination by the agency making the payments that these conditions had been fulfilled.

*(5) General assistance recipients*

General assistance recipients were individuals who received general assistance for a period of not less than 30 days if that period ends within the 60-day period ending on the date the individual was hired by the employer. General assistance programs were State and local programs that provided individuals with money payments, vouchers, or scrip based on need. These programs were referred to by a wide variety of names, including home relief, poor relief, temporary relief, and direct relief. Because of the wide variety of such programs, Congress provided that a recipient was an eligible employee only after the program had been designated by the Secretary of the Treasury as a program that provided money payments, vouchers, or scrip to needy individuals. Certification was performed by the designated local agency.

*(6) Economically disadvantaged former convicts*

The sixth targeted group included any individual who was certified by the designated local employment agency as (1) having at some time been convicted of a felony under State or Federal law, (2) being a member of an economically disadvantaged family, and (3) having been hired within five years of the later of release from prison or date of conviction.

*(7) Economically disadvantaged cooperative education students*

The seventh targeted group was youths who (1) actively participated in qualified cooperative education programs, (2) had attained age 16 but had not attained age 20, (3) had not graduated from high school or vocational school, and (4) were members of economically disadvantaged families. The definitions of a qualified cooperative education program and a qualified school were similar to those used in the Vocational Education Act of 1963. Thus, a qualified cooperative education program meant a program of vocational education for individuals who, through written cooperative arrange-

ments between a qualified school and one or more employers, received instruction, including required academic instruction, by alternation of study in school with a job in any occupational field, but only if these two experiences were planned and supervised by the school and the employer so that each experience contributed to the student's education and employability.

For this purpose, a qualified school was (a) a specialized high school used exclusively or principally for the provision of vocational education to individuals who were available for study in preparation for entering the labor market, (b) the department of a high school used exclusively or principally for providing vocational education to individuals who were available for study in preparation for entering the labor market, or (c) a technical or vocational school used exclusively or principally for the provision of vocational education to individuals who had completed or left high school and who were available for study in preparation for entering the labor market. In order for a nonpublic school to be a qualified school, it must have been exempt from income tax under section 501(a) of the Code.

The certification was performed by the school participating in the cooperative education program. After initial certification, an individual remained a member of the targeted group only while meeting the program participation, age, and degree status requirements of (a), (b), and (c), above.

*(8) AFDC recipients*

The eighth targeted group included any individual who was certified by the designated local employment agency as being eligible for Aid to Families with Dependent Children ("AFDC") and as having continually received such aid during the 90 days before being hired by the employer.

*(9) Economically disadvantaged summer youth employees*

The ninth targeted group included youths who performed services during any 90-day period between May 1 and September 15 and who were certified by the designated local agency as (1) being 16 or 17 years of age on the hiring date, and (2) a member of an economically disadvantaged family. A youth must not have been an employee of the employer prior to that 90-day period. With respect to any particular employer, an employee could qualify only one time for this summer youth credit. If, after the end of the 90-day period, the employer continued to employ a youth who was certified during the 90-day period as a member of another targeted group, the limit on qualified first-year wages took into account wages paid to the youth while a qualified summer youth employee.

**Definition of wages**

In general, wages eligible for the credit were defined by reference to the definition of wages under the Federal Unemployment Tax Act (FUTA) in section 3306(b) of the Code, except that the dollar limits did not apply. Because wages paid to economically disadvantaged cooperative education students and to certain agricultural and railroad employees were not FUTA wages, special rules were provided for these wages.

Wages were taken into account for purposes of the credit only if more than one-half of the wages paid during the taxable year to an employee were for services in the employer's trade or business. The test as to whether more than one-half of an employee's wages were for services in a trade or business was applied to each separate employer without treating related employers as a single employer.

### ***Other rules***

In order to prevent taxpayers from eliminating all tax liability by reason of the credit, the amount of the credit could not exceed 90 percent of the taxpayer's income tax liability. Furthermore, the credit was allowed only after certain other nonrefundable credits had been taken. If, after applying these other credits, 90 percent of an employer's remaining tax liability for the year was less than the targeted jobs tax credit, the excess credit could be carried back three years and carried forward 15 years.

All employees of all corporations that were members of a controlled group of corporations were to be treated as if they were employees of the same corporation for purposes of determining the years of employment of any employee and wages for any employee up to \$6,000. Generally, under the controlled group rules, the credit allowed the group was the same as if the group were a single company. A comparable rule was provided in the case of partnerships, sole proprietorships, and other trades or businesses (whether or not incorporated) that were under common control, so that all employees of such organizations generally were to be treated as if they were employed by a single person. The amount of targeted jobs tax credit allowable to each member of the controlled group was its proportionate share of the wages giving rise to the credit.

No credit was available for the hiring of certain related individuals (primarily dependents or owners of the taxpayer). The credit was also not available for wages paid to an individual who was employed by the employer at any time during which the individual was not a certified member of a targeted group.

No credit was allowed for wages paid unless the eligible individual was either (1) employed by the employer for at least 90 days (14 days in the case of economically disadvantaged summer youth employees) or (2) had completed at least 120 hours (20 hours for summer youth) of services performed for the employer.

### ***Legislative Background***

The targeted jobs tax credit was enacted in the Revenue Act of 1978 as a substitute for the new jobs credit.<sup>2</sup> The targeted jobs tax credit, as initially enacted, provided a credit to employers of seven targeted groups. These groups were: (1) vocational rehabilitation referrals; (2) economically disadvantaged youths aged 18 to 25; (3) economically disadvantaged Vietnam-era veterans under the age of 35; (4) SSI recipients (individuals receiving Supplemental Security Income under Title XVI of the Social Security Act, including certain State supplements); (5) general assistance recipients; (6) economically disadvantaged former convicts hired within five years of the later of release from prison or date of conviction; and (7) coopera-

<sup>2</sup>The new jobs credit was available in 1977 and 1978.

tive education students aged 16 to 19 who had not graduated from high school or vocational school. The maximum credit equaled 50 percent of the first \$6,000 of qualified first-year wages and 25 percent of the first \$6,000 qualified second-year wages paid to a targeted group individual. The employer's deduction for wages was reduced by the amount of the credit. The credit was effective for wages paid or incurred before January 1, 1982.

The Economic Recovery Tax Act of 1981 ("ERTA") extended the credit to individuals who began work for the employer before January 1, 1983. Because of the two-year nature of the credit, it applied to wages paid in 1983 and 1984. ERTA also added new categories of individuals whose employment qualified for the credit: (1) involuntarily terminated Comprehensive Employment and Training Act ("CETA") workers, (2) WIN registrants, and (3) AFDC recipients. Other major changes made in ERTA were limiting the credit to economically disadvantaged cooperative education students rather than all such students meeting the age requirements and the repeal of the age limit for Vietnam-era veterans.

The Tax Equity and Fiscal Responsibility Act of 1982 ("TEFRA") extended the credit to individuals who began work for the employer before January 1, 1985, and applied to wages paid through 1986. TEFRA also deleted CETA workers as a targeted group and added a new targeted group of economically disadvantaged summer youths aged 16 or 17. Employers of economically disadvantaged summer youths were eligible for a maximum credit of 85 percent of the first \$3,000 of qualified wages. The Deficit Reduction Act of 1984 ("DEFRA") extended the credit to individuals who began work for the employer before January 1, 1986.

The Tax Reform Act of 1986 ("1986 Act") extended the credit to wages paid to targeted group individuals who began work for an employer after December 31, 1985 and before January 1, 1989. Major changes enacted in the 1986 Act included the elimination of the credit for second-year wages and a reduction in the first-year credit to 40 percent of the first \$6,000 of qualified wages.

The Technical and Miscellaneous Revenue Act of 1988 ("1988 Act") extended the credit to eligible individuals who began work for an employer between January 1, 1989, and December 31, 1989. Major changes enacted in the 1988 Act were: (1) a reduction in the age limit for economically disadvantaged youth to ages 18-22 rather than 18-25 and (2) a reduction in the maximum amount of the credit for economically disadvantaged summer youth from 85 percent to 40 percent of the first \$3,000 of qualified wages.

The Omnibus Budget Reconciliation Act of 1989, the Omnibus Budget Reconciliation Act of 1990, and the Tax Extension Act of 1991 extended the credit to eligible individuals who began work for the employer before October 1, 1990, January 1, 1992 and June 30, 1992, respectively. Most recently, the Omnibus Budget Reconciliation Act of 1993 extended the credit to eligible individuals who began work for the employer before January 1, 1995.

## Analysis

### Overview

The targeted jobs tax credit ("TJTC") was intended to increase the employment and earnings of target group members. The credit was made available to employers as an incentive to hire members of the target groups. To the extent the value of the credit was passed on from employers to employees, the wages of target group employees were higher than they would have been in the absence of the credit.<sup>3</sup>

The basic rationale for the TJTC was that employers do not hire certain individuals without a subsidy, because either the individuals are stigmatized (e.g., convicted felons) or the current productivity of the individuals is below the prevailing wage rate. Where particular groups of individuals suffer reduced evaluations of work potential because of membership in one of the targeted groups, the credit may have provided employers with a monetary offset for the lower perceived work potential. In these cases, employers may have been encouraged to hire individuals from the targeted groups and then make an evaluation of the individual's work potential in the context of the work environment, rather than from the job application. Where the current productivity of individuals was below the prevailing wage rate, on-the-job-training may have provided individuals with skills that enhanced their productivity. In these situations, the TJTC provided employers with a monetary incentive to bear the costs of training members of targeted groups and providing them with job-related skills that may have increased the chances of these individuals later being hired in unsubsidized jobs. Both situations encouraged employment of members of the targeted groups, and may have acted to increase wages for those hired as a result of the credit.

As discussed below, the evidence is mixed on whether the rationales for the credit were supported by economic data. The information presented is intended to provide a structured way to determine if employers and employees responded to the existence of the credit in the desired manner.

### Efficiency of the credit

The credit provided employers with a substantial subsidy for hiring members of targeted groups. For example, assume that a worker eligible for the credit was paid an hourly wage of  $w$  and worked 2,000 hours during the year. Ignoring payroll taxes (Social Security, Medicare, unemployment) and fringe benefits, the pre-tax cost to the employer for hiring this individual was  $(2,000)(w)$  dollars. Since the worker was eligible for the full credit (40 percent of the first \$6,000 of wages), the firm would have reduced its deduction for wages paid by \$2,400 and received the full \$2,400 credit against its income taxes. Assuming the firm faced a marginal corporate income tax rate of 35 percent, the after-tax cost of hiring this worker was  $((2,000)(w) - 2,400)(1 - .35)$  dollars. This amount was lower than

<sup>3</sup>For individuals with productivity to employers lower than the minimum wage, the credit may have resulted in these individuals being hired and paid the minimum wage. For these cases, it was clear that the credit resulted in the worker receiving a higher wage from that employee than in the absence of the credit (e.g., zero).

the cost of hiring a credit-eligible worker for 2,000 hours at the same hourly wage  $w$  by  $2,400(1 - .35) = \$1,560$  dollars. This \$1,560 figure was constant for all workers unless the wage ( $w$ ) changed in response to whether or not the individual was a member of a targeted group. If the wage rate did not change in response to credit eligibility, the TJTC subsidy was larger in percentage terms for lower-wage workers. If  $w$  rose in response to the credit, it is uncertain how much of the subsidy remained with the employer, and therefore the size of the TJTC subsidy to employers was uncertain.

To the extent the TJTC subsidy flowed through to the workers eligible for the credit in the form of higher wages, the incentive for eligible individuals to enter the paid labor market may have increased. Since many members of the targeted groups receive governmental assistance (AFDC or Medicaid), and these benefits were phased out as income increased, these individuals potentially faced a very high marginal tax rate on additional earnings.<sup>4</sup> Increased wages resulting from the TJTC may have been viewed as a partial offset to these high marginal tax rates. In addition, it may be the case that even if the credit had little effect on observed wages, credit-eligible individuals may have had increased earnings due to increased employment.<sup>5</sup>

The structure of the TJTC (the 40-percent credit rate for the first \$6,000 of qualified wages) appeared to encourage employers to churn employees who are eligible for the credit. This could be accomplished by firing employees after they earn \$6,000 in wages and replacing them with other TJTC-eligible employees. If training costs were high relative to the size of the credit, it may not have been in the interest of an employer to churn such employees in order to maximize the amount of credit claimed. Empirical research in this area has not found an explicit connection between employee turnover and utilization of the TJTC.<sup>6</sup>

### *Data on TJTC certifications and vouchers*

Table 1 presents data on the number of TJTC certifications and vouchers for the years 1980–1990. Both certifications and vouchers are indications that individuals are members of targeted groups and that wages paid to these people may have qualified for the credit. The table indicates that the number of certified individuals fluctuated over time, with a slight downward trend. It is possible that this decline reflected less intensive use of the TJTC by employers. Since certification took place after the hiring decision had been made, the observed decline could have reflected an increased emphasis on determining eligibility for the TJTC prior to employment through the use of vouchers.

The data also indicate a decline in the use of vouchers by TJTC-eligible individuals. Vouchers were used to indicate to an employer that an individual was eligible for the TJTC. In particular, vouch-

<sup>4</sup>From this vantage point, the phaseout of benefits was analogous to unchanged benefits coupled with an increase in the tax rate faced by the individual on their earnings. Examples of how large marginal tax rates can be for persons receiving transfer payments are contained in Gordon Lewis and Richard Morrison, *Income Transfer Analysis*, Urban Institute Press, Washington, DC, 1989.

<sup>5</sup>This argument is made in Edward Lorenz, *The Targeted Jobs Tax Credit in Maryland and Missouri: 1982–1987*, National Commission for Employment Policy, Washington, DC, 1988.

<sup>6</sup>See, for example, Macro Systems, Inc., *Final Report of the Effect of the Targeted Jobs Tax Credit Program on Employers*, U.S. Department of Labor, 1986.



ers may have increased the efficiency of the TJTC by permitting employers to base the employment decision on whether or not the TJTC subsidy would be available for a specific worker. Some analysts argued, however, that the vouchers may have reduced the efficiency of the TJTC by stigmatizing the workers of the targeted group.<sup>7</sup> In the absence of the credit, the employer might not have become aware that the prospective employee was a member of a disadvantaged group. The credit would thus have advertised the individual's status and would have helped reinforce the disadvantage rather than combat it.<sup>8</sup>

**Table 1.—Number of Targeted Jobs Tax Credit Certifications and Vouchers, 1982–1990**

[In thousands]

Year <sup>1</sup>	Number of vouchers	Number of certifications
1982 .....	625	202
1983 .....	1,287	431
1984 .....	1,338	563
1985 .....	1,343	622
1986 .....	190	87
1987 .....	1,157	598
1988 .....	842	497
1989 .....	755	452
1990 .....	710	445

<sup>1</sup>Figures for 1980–1985 are for fiscal years; those for 1986–1990 are for calendar years. The TJTC program lapsed between January and October 1986, accounting for the decline in certification in 1986.

Source: U.S. Department of Labor tabulations for various years.

Certain empirical regularities exhibit themselves in the data on certifications. Generally, about half of the certifications were made for economically disadvantaged youth. The next largest group, AFDC recipients, represented nearly one-quarter of the total certifications. The third largest group, approximately one-tenth of the total, was made up of handicapped individuals. The three States that issue the largest number of certifications (California, New York, and Texas) generally accounted for nearly one-quarter of the total certifications.

### **Job creation**

The number of jobs created by the TJTC was certainly less than the number of certifications. The first reason was that some of the workers receiving the TJTC certification would have been hired even in the absence of the program. In these cases, the credit re-

<sup>7</sup>Gary Burtless, "Are Targeted Wage Subsidies Harmful? Evidence from a Wage Voucher Experiment," *Industrial and Labor Relations Review*, vol. 39, no. 1, October 1985, pp. 105–114.

<sup>8</sup>One empirical study found some evidence that TJTC-eligible individuals were stigmatized by the credit. Employers who knew of an individual's eligibility for the TJTC prior to hiring either (1) offered lower wages, on average, to the TJTC-eligible individuals or (2) ended up with workers of better than average productivity. The latter was taken as evidence of a stigma effect in that the employers appeared to be more selective in hiring TJTC-eligible individuals. John H. Bishop, "Toward More Valid Evaluations of Training Programs Serving the Disadvantaged," *Journal of Policy Analysis and Management*, vol. 8, no.2, 1989, pp. 209–228.

sulted in a windfall gain either to the employee or the employer. The second reason was that employers may have substituted TJTC-eligible individuals for other potential workers. This could be viewed as merely a shift in employment opportunities from one group to another, with no net increase in jobs created. Such substitution of credit-eligible workers for others may not have been socially undesirable. For example, it might be considered an acceptable trade-off for a targeted group member to displace a secondary earner from a well-to-do family (e.g., a spouse or student working part-time).

Empirical research on the employment gains from the TJTC indicated that only a small portion of the TJTC-eligible population found employment because of the program. Studies found that net new job creation was between 5 and 30 percent of the total certifications. This finding is consistent with some additional employment as a result of the TJTC program, but with considerable uncertainty as to the exact magnitude.<sup>9</sup>

A necessary condition for the credit to be an effective employment incentive is that firms incorporate TJTC eligibility into their hiring decisions. This could be done by determining credit eligibility for each potential employee or by making a concerted effort to hire individuals from segments of the population likely to include members of targeted groups. Studies examining this issue found that some employers made such efforts, while other employers did little to determine eligibility for the TJTC prior to the decision to hire an individual.<sup>10</sup> Firms with larger numbers of employees were more likely to be aware of the program and to participate in hiring TJTC-eligible individuals.<sup>11</sup> In these latter cases, the TJTC provided a cash benefit to the firm, without affecting the decision to hire a particular worker. To be fully effective as a long-term employment incentive, employers need to retain eligible employees in their work force after the expiration of the TJTC eligibility period.<sup>12</sup>

---

<sup>9</sup>Macro Systems, Inc., *Impact Study of the Implementation and Use of the Targeted Jobs Tax Credit: Overview and Summary*, U.S. Department of Labor, 1986; John H. Bishop and Mark Montgomery, "Does the Targeted Jobs Tax Credit Create Jobs at Subsidized Firms?", *Industrial Relations*, vol. 32, no. 3, Fall 1993, pp. 289-306; "Targeted Jobs Tax Credit Program: Employment Inducement or Employer Windfall?", U.S. Department of Labor, Office of Inspector General, Report No. 04-94-021-03-320, August 18, 1994.

<sup>10</sup>For example, see U.S. General Accounting Office, *Targeted Jobs Tax Credit: Employer Actions to Recruit, Hire, and Retain Eligible Workers Vary* (GAO HRD 91-33), February 1991.

<sup>11</sup>John H. Bishop and Mark Montgomery, "Evidence on Firm Participation in Employment Subsidy Programs," *Industrial Relations*, vol. 25, no. 1, Winter 1986, pp. 56-64.

<sup>12</sup>The Department of Labor Office of Inspector General's report found some evidence that TJTC participants stayed with their employer for a longer time than did a population of individuals with similar earnings, although the turnover rates for both groups was high. Less than a quarter of the TJTC participants were with the same employer five quarters after being hired. Only about one-sixth of the members of the comparison group were with the same employer after that time. "Targeted Jobs Tax Credit Program: Employment Inducement or Employer Windfall?", U.S. Department of Labor, Office of Inspector General, Report No. 04-94-021-03-320, August 18, 1994, p. 30.

## 2. Exclusion for employer-provided educational assistance (sec. 127 of the Code)

### *Present and Prior Law*

Under present law, taxpayers generally may not deduct education and training expenses. However, a deduction for education expenses is allowed under section 162 if the education or training (1) maintains or improves a skill required in a trade or business currently engaged in by the taxpayer, or (2) meets the express requirements of the taxpayer's employer or requirements of applicable law or regulations imposed as a condition of continued employment.<sup>13</sup> Education expenses are not deductible if they relate to minimum educational requirements or to education or training that enables a taxpayer to begin working in a new trade or business.

In the case of an employee, education expenses (if not reimbursed by the employer) may be claimed as an itemized deduction only if such expenses are job related and only to the extent that the expenses, along with other miscellaneous deductions, exceed two percent of the taxpayer's adjusted gross income. Education expenses that are reimbursed by the employer are excludable from the employee's gross income (and wages for employment tax purposes) as a working condition fringe benefit (sec. 132(d)) if the education qualifies as job related under section 162.

Under prior law, an employee's gross income and wages for income and employment tax purposes did not include amounts paid or incurred by the employer for educational assistance provided to the employee (whether or not job related) if such amounts were paid or incurred pursuant to an educational assistance program meeting certain requirements (sec. 127). This exclusion, which expired after December 31, 1994, was limited to \$5,250 of educational assistance with respect to an individual during a calendar year.

### *Legislative Background*

The section 127 exclusion was first established on a temporary basis by the Revenue Act of 1978 (through 1983). It subsequently was extended, again on a temporary basis, by Public Law 98-611 (through 1985), by the Tax Reform Act of 1986 (through 1987), by the Technical and Miscellaneous Revenue Act of 1988 (through 1988), by the Omnibus Budget Reconciliation Act of 1989 (through September 30, 1990), by the Omnibus Budget Reconciliation Act of 1990 (through 1991), by the Tax Extension Act of 1991 (through June 30, 1992), and by the Omnibus Budget Reconciliation Act of 1993 (through December 31, 1994). Public Law 98-611 adopted a \$5,000 annual limit on the exclusion; this limit was subsequently raised to \$5,250 in the Tax Reform Act of 1986. The Technical and Miscellaneous Revenue Act of 1988 made the exclusion inapplicable to graduate-level courses. The restriction on graduate-level courses was repealed by the Omnibus Budget Reconciliation Act of 1990, effective for taxable years beginning after December 31, 1990.

In the 104th Congress, H.R. 127 (introduced on January 4, 1995, by Messrs. Levin, Shaw, Camp, and Rangel) would permanently ex-

<sup>13</sup>Treas. Reg. sec. 1.162-5.

tend the section 127 exclusion. H.R. 746 (introduced on January 30, 1995, by Mr. Pickett) also would permanently extend the exclusion.

### *Analysis*

The exclusion for employer-provided educational assistance programs is aimed at increasing the levels of education and training in the workforce. Employer-provided educational assistance benefits may serve as a substitute for cash wages (or other types of fringe benefits) in the overall employment compensation package. Because of their favorable tax treatment, benefits received in this form are less costly than cash wages in terms of the after-tax cost of compensation to the employer-employee pair.

The tax treatment serves to subsidize the provision of education and could lead to larger expenditures on education for workers than would otherwise occur. This extra incentive for education may be desirable if some of the benefits of an individual's education accrue to society at large (through the creation of a better-educated populace or workforce). In that case, absent the subsidy, individuals would underinvest in education (relative to the socially desirable level) because they would not take into account those benefits that others receive. To the extent that expenditures on education represent a purely personal consumption benefit, a subsidy would lead to overconsumption of education.

Because the provision allows an exclusion from gross income, the value in terms of tax savings is greater for those taxpayers with higher marginal tax rates. Thus, higher-paid individuals, individuals with working spouses, or individuals with other sources of income may be able to receive larger tax benefits than their fellow workers.

In general, in the absence of section 127, the value of employer-provided education is excludable from income only if the education relates directly to the taxpayer's current job. If the education would qualify the taxpayer for a new trade or business, however, then the value of the benefit generally would not be excludable from income. Under this rule, higher-income, higher-skilled individuals may be more able to justify education as related to their current job because of the breadth of their current training and responsibilities. For example, an accountant may find more courses of study directly related to his or her current job and not qualifying him or her for a new trade than would a clerk.

The exclusion for employer-provided educational assistance is meant to counteract this effect by making the exclusion widely available. Proponents argue that the exclusion is used by the nonhighly compensated employees to improve their competitive position in the work force. In practice, however, the scant evidence available seems to indicate that those individuals receiving employer-provided educational assistance are somewhat more likely to be higher-paid workers.<sup>14</sup> The size of the benefits paid also appear to be positively correlated with the income of the recipient. Such evidence is consistent with the observation that the exclusion is

<sup>14</sup>See, for example, Coopers & Lybrand, "Section 127 Employee Educational Assistance: Who Benefits? At What Cost?", June 1989, p. 15, and Steven R. Aleman, "Employer Education Assistance: A Profile of Recipients, Their Educational Pursuits, and Employers," CRS Report, 89-33 EPW, January 10, 1989, p. 9.

more valuable to those individuals in higher marginal tax brackets. A reformulation of the incentive as inclusion of the value of benefits into income in conjunction with a tax credit could make the value of the benefit more even across marginal tax brackets.<sup>15</sup>

Another rationale for the exclusion is that it makes the tax laws easier to administer because it reduces the need to determine whether or not education is job related.<sup>16</sup> In the absence of the exclusion, distinguishing between job related and other education expenses may impose significant administrative costs on the Internal Revenue Service ("IRS") and taxpayers. It may also result in numerous disputes between the IRS and taxpayers.

Proponents of a permanent extension argue that temporary extensions create unnecessary uncertainty and administrative burdens for taxpayers.

---

<sup>15</sup> If the credit were nonrefundable, then to the extent that a taxpayer may reduce his or her tax liability to zero, he or she may not be able to receive the full value of the credit.

<sup>16</sup> The need to determine whether or not expenses are job related still arises if employer-provided education expenses exceed the \$5,250 annual limit.

### 3. Orphan drug tax credit (sec. 28 of the Code)

#### *Present Law*

Prior to January 1, 1995, a 50-percent nonrefundable tax credit was allowed for a taxpayer's qualified clinical testing expenses paid or incurred in the testing of certain drugs for rare diseases or conditions, generally referred to as "orphan drugs." Qualified testing expenses are costs incurred to test an orphan drug after the drug has been approved for human testing by the Food and Drug Administration (FDA) but before the drug has been approved for sale by the FDA. A rare disease or condition is defined as one that (1) affects less than 200,000 persons in the United States or (2) affects more than 200,000 persons, but for which there is no reasonable expectation that businesses could recoup the costs of developing a drug for it from U.S. sales of the drug. These rare diseases and conditions include Huntington's disease, myoclonus, ALS (Lou Gehrig's disease), Tourette's syndrome, and Duchenne's dystrophy (a form of muscular dystrophy).

The orphan drug tax credit expired after December 31, 1994.

#### *Legislative Background*

This provision originally was enacted in the Orphan Drug Act of 1983, and was scheduled to expire after 1987. The Tax Reform Act of 1986 extended the credit for three years, through December 31, 1990. The Omnibus Budget Reconciliation Act of 1990 further extended the orphan drug tax credit for one year, through December 31, 1991.

The Tax Extension Act of 1991 extended the orphan drug tax credit for six months, through June 30, 1992. The Omnibus Budget Reconciliation Act of 1993 extended the orphan drug tax credit for 30 months (i.e., for qualified clinical testing expenses incurred through December 31, 1994).

In the 104th Congress, H.R. 1566 (introduced on May 3, 1995 by Mrs. Johnson of Connecticut and Mr. Matsui) would permanently extend the orphan drug tax credit and provide for carryovers and carrybacks of unused credits.

#### *Analysis*

##### *Overview*

The orphan drug tax credit was created to encourage the development of drugs to treat rare diseases by providing a tax subsidy for drug companies to undertake clinical testing for such drugs. Because the potential U.S. market for such drugs is small, and because testing of these drugs may be quite expensive, the private market might not develop and test some of these drugs without a government subsidy. The revenues of producers may be smaller than the total amount of consumer benefit (because producers cannot discriminate among consumers and charge each consumer as much as he or she would be willing to pay), making it possible that the private market produces fewer orphan drugs than is socially optimal. This potential undersupply is not limited to orphan drugs, or to drugs in general. However, if society values orphan drugs

more than other products, perhaps because they prevent deaths or help people with severe disabilities, then the supply of such drugs provided by the private market might be much smaller than the optional amount, and a case for a subsidy could be made.

The credit equals 50 percent of qualified clinical testing expenses, and provides a subsidy for one aspect of the process of bringing a drug to market. By reducing the cost of making the drug available, the expected profitability of the drug is increased, making it more likely that a firm will undertake the necessary investment in research and development of these drugs, despite the small potential market.

### *Efficiency issues*

The efficiency of the orphan drug program can be evaluated on at least two levels. First, one could determine the cost, both government and private, of developing the drugs per life saved or per life improved. Then one could compare this figure to the maximum that society would pay to save or improve a life.<sup>17</sup> This comparison would provide an indication of the cost effectiveness of the credit. A second analysis could address whether the credit is itself too generous, providing a larger subsidy to firms or individuals (if the subsidy is reflected in the price) than would be necessary to encourage the development of the orphan drugs. This second analysis would compare the amount of orphan drug development that occurs with the present-law credit to the amounts that would occur with various credit levels (including zero). The appropriate credit would provide just enough of a subsidy so that the socially optimal number of orphan drugs is produced.

In general, drug companies can be expected to develop those drugs that yield the highest expected after-tax profits. These are not necessarily the drugs with the highest social value. A tax credit available for all qualifying expenses permits the firm developing the drug to determine which research projects to pursue, based on the available subsidy for qualified testing expenses. In contrast, a program that directly subsidizes the cost of testing specific orphan drugs may better target benefits to those drugs that have the highest social value.

Some commentators have called for a recapture of the tax subsidies provided under the orphan drug tax credit when the recipient firm develops a drug that is unusually profitable. This recapture would treat a company's orphan drug activity much like a regulated utility, where an upper bound is put on the allowable rate of return for certain investments. Reducing the potential profits of firms that successfully market orphan drugs would reduce the incentive of firms to develop and test these drugs. However, this reduced incentive could be offset by an increase in the value of the credit. It is possible that the combination of a higher credit and certain recapture rules would be better able to target the development of drugs that would not be developed in the private market.

<sup>17</sup> While some people may hesitate to address the issue of the value of a life, there is some amount of resources that society would not be willing to pay in order to save lives, although that amount may be hard to determine with precision.

#### 4. Contributions of publicly traded stock to private foundations (sec. 170(e)(5) of the Code)

##### *Present Law*

In computing taxable income, a taxpayer who itemizes deductions generally is allowed to deduct the fair market value of property contributed to a charitable organization.<sup>18</sup> However, in the case of a charitable contribution of short-term gain, inventory, or other ordinary income property, the amount of the deduction is limited to the taxpayer's basis in the property. In the case of a charitable contribution of tangible personal property, a taxpayer's deduction is limited to the adjusted basis in such property if the use by the recipient charitable organization is unrelated to the organization's tax-exempt purpose (Code sec. 170(e)(1)(B)(i)).<sup>19</sup>

In cases involving contributions to a private foundation (other than certain private operating foundations), the amount of the deduction is limited to taxpayer's basis in the property (sec. 170(e)(1)(B)(ii)). However, under a special rule contained in section 170(e)(5), taxpayers were allowed a deduction equal to the fair market value of "qualified appreciated stock" contributed to a private foundation prior to January 1, 1995. Qualified appreciated stock was defined as any stock of a corporation for which (as of the date of contribution) market quotations are readily available on an established securities market and which is capital gain property. The fair-market-value deduction for qualified appreciated stock donated to a private foundation applied only to the extent that the cumulative aggregate amount of donations made by the donor to one or more private foundations of stock in a particular corporation did not exceed 10 percent in value of the outstanding stock of that corporation. For this purpose, an individual was treated as making all contributions that were made by any member of the individual's family (as defined in Code sec. 267(c)(4)).

##### *Legislative Background*

The special rule for gifts of publicly traded stock to private foundation (i.e., sec. 170(e)(5)) was enacted as part of the Deficit Reduction Act of 1984, effective for donations made after July 18, 1984, and prior to January 1, 1995.

##### *Analysis*

Under present law, gifts of stock to public charities entitle the donor to a deduction in the amount of the fair market value of the stock. Therefore, the expiration of section 170(e)(5) raises the ques-

<sup>18</sup>The amount of the deduction allowable for a taxable year with respect to a charitable contribution may be reduced depending on the type of property contributed, the type of charitable organization to which the property is contributed, and the income of the taxpayer (Code secs. 170(b) and 170(e)).

<sup>19</sup>As part of the Omnibus Budget Reconciliation Act of 1993, Congress eliminated the treatment of contributions of appreciated property (real, personal, and intangible) as a tax preference for alternative minimum tax (AMT) purposes. Thus, if a taxpayer makes a gift to charity of property (other than short-term gain, inventory, or other ordinary income property, or gifts to private foundations) that is real property, intangible property or tangible personal property the use of which is related to the donee's tax-exempt purpose, the taxpayer is allowed to claim the same fair-market-value deduction for both regular tax and AMT purposes (subject to present-law percentage limitations).



tion whether it is appropriate to distinguish for tax purposes gifts of stock to private foundations from gifts of stock to public charities. If section 170(e)(5) is not reinstated, then taxpayers with appreciated stock will have an added incentive to make gifts of such stock to a public charity rather than making gifts to a private foundation.

In the Tax Reform Act of 1996, ("1996 Act") Congress adopted the section 170(e) rules to limit the deduction to the amount of a taxpayer's basis in donated property in cases of certain gifts of property to public charities (e.g., property the use of which is unrelated to the charity's function), and all gifts of property to private foundations. Gifts of appreciated property were a concern, because such gifts produced potential tax benefits significantly greater than those available with respect to cash contributions. At the same time, private foundations were viewed as presenting potential tax compliance problems compared to public charities, because the former are often controlled by a small group of individuals (sometimes the same individuals who control a corporation the stock of which is donated to the foundation). The limitation imposed regarding all gifts of property to private foundations paralleled the rules adopted for some gifts of property to public charities, but was also part of a number of special rules enacted to govern private foundations in particular. As part of the 1969 Act, Congress also adopted provisions to impose excise tax penalties on private foundations that fail to make a required amount of grants or other distributions for charitable purposes, or that engage in certain prohibited self-dealing transactions with insiders. Since 1969, compliance with tax laws by private foundations generally is considered to have improved. In 1984, therefore, Congress liberalized the charitable contribution rules governing private foundations by adopting section 170(e)(5), which applied to only donations of publicly traded stock and included other limitations designed to minimize the potential for abuse, including overvaluations. If, as most observers believe, private foundations generally now are at least as compliant with tax laws as are public charities, and assuming that the minimum distribution requirements for private foundations are adequate to ensure that donations received enter the charitable stream, there may be little reason to treat gifts to private foundations less favorably than gifts to public charities, particularly in cases involving assets (such as publicly traded stock) that generally do not present valuation problems.

With respect to charitable gifts of appreciated property in general, any tax deduction or credit reduces the price of an activity that receives the tax incentive. For example, for a taxpayer in the 36-percent tax bracket, a \$100 cash gift to charity reduces the taxpayer's taxable income by \$100 and thereby reduces tax liability by \$36. As a consequence, the \$100 cash gift to charity reduces the taxpayer's after-tax income by only \$64. In such a case, economists would say that the "price of giving" \$100 cash to charity is \$64, because by making the gift the taxpayer gives up only \$64 of other possible consumption. With contributions to charity of appreciated property, the cost of giving may be even lower. Because capital gains that are unrealized generally go untaxed (and because a gift to charity is not considered a realization event), if a fair market

value deduction is allowed for a donation of capital gain property, the price of giving \$100 worth of appreciated property may be as low as \$36.<sup>20</sup>

In principle, a lower price of giving should result in more charitable giving. The amount of charitable giving that results from lowering the price of giving determines the efficiency of the tax deductions. If taxpayers do not increase their charitable giving significantly in response to a charitable contribution deduction, the revenue lost to the government because of the tax incentive may exceed the benefits of additional contributions that flow to charitable organizations as a result of the deduction. Economists have not reached a consensus as to whether the deduction for charitable donations is efficient in the sense that the cost to the government in lost revenue is more than offset by additional funds flowing to charitable organizations.<sup>21</sup>

The aggregate data on charitable donations also present a mixed picture of the effect of tax deductions on gifts of appreciated property. Although gifts of appreciated property substantially declined after enactment of the Tax Reform Act of 1986, the total value of gifts to charity has continued to grow since that time, despite the fact that the reduction in marginal tax rates should have reduced the incentive to give. Thus, to the extent that gifts of appreciated property have declined, the decline has been largely offset by increases in cash gifts.

---

<sup>20</sup>This example assumes that the property has a basis of zero and is computed as follows: \$100 minus \$28 (tax avoided from non-recognition of built-in capital gain) minus \$36 (tax saved from deduction for fair market value) equals \$36. This "price of giving" figure assumes that the taxpayer would sell the appreciated property (and pay tax on the built-in gain) in the same year of the donation if the property were not given to charity. However, a higher "price of giving" would be derived if it is assumed that, had the taxpayer not donated the property, he would have retained the asset until death (and obtained a step-up in basis) or obtained benefits of deferral of tax by selling the asset in a later year. This example does not take into account the benefit to the taxpayer of being allowed a deduction for charitable contributions for State income tax purposes, which would further reduce the effective price of giving.

<sup>21</sup>See Charles T. Clotfelter, *Federal Tax and Charitable Giving*, (Chicago: University of Chicago Press) 1985, for a comprehensive review of this literature. A review of more recent empirical investigations is found in Kevin S. Barrett, "Panel-Data Estimates of Charitable Giving: A Synthesis of Techniques," 44 *National Tax Journal*, Sept. 1991, at 365-381. A recent empirical investigation of individual giving concludes that average contributions increased during the 1980s despite tax changes that generally made it less favorable to give to charity. The study found that corporate giving appeared lower than might have been predicted. See Gerald E. Auten, James M. Cilke, William C. Randolph, "The Effects of Tax Reform on Charitable Contributions," 45 *National Tax Journal*, Sept. 1992, at 267-290.

## 5. FUTA exemption for temporary alien agricultural workers (sec. 3306(c)(1) of the Code)

### *Prior Law*

Generally, Federal Unemployment Tax ("FUTA") is imposed on farm operators who (1) employ 10 or more agricultural workers for some portion of each of 20 different days, each day being in a different calendar week or (2) have a quarterly payroll for agricultural services of at least \$20,000. An exclusion from FUTA was provided, however, for labor performed by an alien admitted to the United States to perform agricultural labor under sections 214(c) and 101(a)(15)(H) of the Immigration and Nationality Act. This exclusion was effective for labor performed before January 1, 1995. For these purposes, the term agricultural labor generally has the same meaning (except for certain cooperative organizations) as used for FICA tax purposes.

### *Legislative Background*

The Unemployment Compensation Amendments of 1976 provided the exclusion for certain agricultural labor performed before January 1, 1980. The Unemployment Compensation Amendments of 1978 extended the exclusion to labor performed before January 1, 1982. The Tax Equity and Fiscal Responsibility Act of 1982 extended the exclusion to labor performed before January 1, 1984. The Federal Supplemental Compensation Amendments of 1983 extended the exclusion to labor performed before January 1, 1986. The Omnibus Budget Reconciliation Act of 1985 extended the exclusion to labor performed before January 1, 1988. The Alien Farmworkers Tax Exclusion Act of 1986 extended the exclusion to labor performed before January 1, 1993. Most recently, the Unemployment Compensation Amendments of 1992 extended the exclusion to labor performed before January 1, 1995.

### *Analysis*

Under prior law, the wages of alien agricultural workers were not subject to FUTA taxes, and the individuals received no benefits under the Federal Unemployment Tax Act should they become unemployed. While FUTA taxes are imposed on employers, it has been long understood that the individuals who are liable for making tax payments to the Government (in this instance, the employer) may not be the ones burdened by a tax. Instead, the incidence of the tax will depend upon the conditions of supply and demand in the market.

Economists conclude that the burden of payroll taxes, even if nominally paid by employers, generally is borne by employees in the form of lower wages. This conclusion is based on the fact that payroll taxes are broad based, and on the evidence indicating that aggregate labor supply is not very responsive (i.e., has a low supply elasticity) to changes in net wage rates. This might suggest that eliminating FUTA taxes with respect to aliens working in the agricultural sector would lead to an increase in cash wages for such aliens, with the total labor costs of employers (wage and payroll tax payments) remaining unchanged. However, the supply of labor to

any one sector of the economy is generally much more elastic (responsive to price) than is the economy-wide supply of labor. In particular, there might be large numbers of aliens willing to work in the agricultural sector such that an increase in the cash wages would increase the number of potential workers so that the wage would be bid back down. In such a case, because employers cannot easily substitute capital for labor in the harvest of many crops, the demand for labor may be much less responsive to price than is the supply of labor; thus, the employers would bear the burden of the tax and receive the benefit of exemption from the tax. If exemption from the tax reduces labor costs, as this analysis suggests, the ultimate beneficiaries of the exemption from FUTA tax could be consumers of agricultural products as the cost of bringing goods to market is reduced.

On the other hand, the exemption pertains only to farm workers admitted under certification by the Secretary of Labor that the existing domestic labor supply is inadequate. If the admission of foreign workers is limited in response to the Secretary of Labor's finding, the supply of labor to agriculture may not be as responsive to price as suggested above, and the benefit of the tax exemption may accrue, in part, to the workers in the form of higher wages.

Regardless of the incidence of the tax, some argue that it is unfair to impose FUTA taxes on the labor of workers who generally are not likely to collect unemployment benefits. Proponents of extending the exclusion also argue that temporary agricultural workers generally are not subject to FICA taxes, and therefore should not be subject to FUTA taxes. Opponents of extending the exclusion respond that conformity between FICA taxes and FUTA taxes is not a determinative factor in the imposition of either tax, because they are structured differently and serve different purposes.

## **6. Tax credit for producing fuel from a nonconventional source (sec. 29 of the Code)**

### *Present Law*

Certain fuels produced from "nonconventional sources" and sold to unrelated parties are eligible for an income tax credit equal to \$3 (generally adjusted for inflation) per barrel or BTU oil barrel equivalent (sec. 29) (referred to as the "section 29 credit"). Qualified fuels must be produced within the United States. Qualified fuels include:

- (1) oil produced from shale and tar sands;
- (2) gas produced from geopressured brine, Devonian shale, coal seams, tight formations ("tight sands"), or biomass; and
- (3) liquid, gaseous, or solid synthetic fuels produced from coal (including lignite).

In general, the credit is available only with respect to fuels produced from wells drilled or facilities placed in service after December 31, 1979, and before January 1, 1993. An exception extends the January 1, 1993, expiration date for facilities producing gas from biomass and synthetic fuel from coal if the facility producing the fuel is placed in service before January 1, 1997, pursuant to a binding written contract in effect before January 1, 1996.

The credit may be claimed for qualified fuels produced and sold before January 1, 2003 (in the case of nonconventional sources subject to the January 1, 1993 expiration date) or January 1, 2008 (in the case of biomass gas and synthetic fuel facilities eligible for the extension period).

### *Legislative Background*

The nonconventional fuels production credit was originally enacted in the Windfall Profit Tax Act of 1980, with a requirement that the property generally be placed in service before January 1, 1990.

In the Technical and Miscellaneous Revenue Act of 1988, the placed-in-service date was extended for one year, from January 1, 1990, to January 1, 1991. The Omnibus Budget Reconciliation Act of 1990 ("1990 Act") extended the placed-in-service date for two years, to January 1, 1993. Additionally, the 1990 Act extended the credit sunset date so that sales of qualifying fuels occurring before January 1, 2003, would be eligible for the credit.

The 1990 Act also reinstated gas produced from certain tight formations as qualifying for the credit, and repealed the requirement that the price of such gas be regulated.

The expiration date for placing in service facilities producing gas from biomass and synthetic fuels from coal (and for receiving credits for fuels produced at such facilities) was further extended by the Energy Policy Act of 1992 to January 1, 1997, for binding contracts in effect before January 1, 1996.

## Analysis

### Overview

Subsidizing the development and production of nonconventional fuel sources through the tax code may be justified if the subsidies provide a more socially desirable allocation of economic resources. These desirable outcomes could include a more efficient utilization of natural resources or a more equitable treatment of owners of different, but competing, energy sources. In any case, the revenues foregone through the operation of the tax subsidy are analogous to direct expenditures made to accomplish the same social goals. In general, a comparison of the costs and benefits of a subsidy such as the nonconventional fuels production credit is necessary to determine if the revenue loss caused by the operation of the tax provision is offset by the benefits generated by the credit. In addition, the size of the subsidy provided should be examined to determine if a similar level of social benefits could be generated in a less costly manner.

One justification for the section 29 credit is that the social value of certain domestic oil and gas production exceeds the market value of the recovered fuels. Because this high-social-value energy production competes directly with fuels produced using conventional methods, some suggest that too little of the high-social-value production will take place without a subsidy.<sup>22</sup> For instance, national security concerns may dictate that relatively small volume or relatively high-cost domestic reserves of oil and gas be tapped instead of relying on imports of similar fuels from abroad.<sup>23</sup> In this way, production subsidized by the nonconventional fuels production credit would supplement domestic reserves of oil and gas that could be recovered using conventional techniques.<sup>24</sup>

Alternatively, environmental goals such as concerns with venting methane (a greenhouse gas) from coal deposits or landfills into the atmosphere may dictate that these sources of methane be captured and utilized as a fuel (natural gas).<sup>25</sup> In this case, the market price of the fuel does not take into account the environmental damage the methane may have caused if released into the atmosphere. A subsidy to producers may be warranted to reflect this social benefit in the firm's total receipts for production of the gas.

An original justification for the nonconventional fuels production credit was to subsidize the development of new alternative technologies to recover oil and gas.<sup>26</sup> Because of the ease with which

---

<sup>22</sup>It should be noted that, in addition to the tax credit, nonconventional fuels production receives the same tax incentives (e.g., percentage depletion, the expensing of intangible drilling costs, etc.) as conventional methods of recovering oil and gas as well as the benefit of various direct Federal spending subsidy programs.

<sup>23</sup>Under the "national security" argument, the social cost of a fuel such as oil is greater than the market price due to considerations such as the cost of maintaining a strategic petroleum reserve designed to limit the economic dislocation that might be caused by disruptions in markets for these fuels.

<sup>24</sup>Note that the nonconventional fuels production credit was enacted in the wake of two substantial rises in the world price for oil. In this context, fuels produced from nonconventional sources reduce the need for imported fuels perhaps leading to a reduced trade deficit or less price variability, and could have been viewed as having social value in excess of their price.

<sup>25</sup>While burning methane as a fuel source releases carbon dioxide into the atmosphere, to the extent the methane displaces other fossil fuels, the total amount of carbon dioxide generated remains approximately constant. The net reduction in greenhouse gases results from less methane being released into the atmosphere.

<sup>26</sup>Senate Report No. 96-394, 96th Congress, 1st Session, p. 87.

certain recovery technologies can be copied by others in the field, the originator of the technological advance might be unable to capture all the economic benefit from the advance. Viewed in this light, the credit is intended as a spur to technology. By increasing the expected profitability of these projects, the section 29 credit encourages investors to undertake projects that might have been rejected in the absence of the tax subsidy. To the extent that technological advance is spurred by the credit, the benefits of the newly advanced technology should be included with other benefits (and detriments) and this total compared to the revenue cost of the credit to determine if the revenues forgone have been efficiently spent.

The relevant legislative history indicates that Congress believed some subsidy was necessary to encourage industries attempting to produce alternative energy sources to permit them to develop to the stage where they could be competitive with conventional fuels.<sup>27</sup> It was believed that the information gained from the *initial efforts* at producing these sources of energy would be of benefit to the entire economy. Apparently, it was not Congress' intent that the credit would become a permanent fixture in the tax law. The credit was designed to apply only for a limited period of time, after which Congress expected "no special incentive will be needed" since over the life of the credit the affected industries should have matured and become competitive even absent a governmental subsidy.<sup>28</sup>

If it is determined that the subsidized activities have not yet developed into self-sustaining, competitive industries, a decision as to the continuation of the credit as it applies to these fuels may be based on whether or not these producers will ever reach that status. If the production of particular nonconventional fuels will not become competitive in the foreseeable future absent a subsidy, then extending the credit with respect to these fuels would be contrary to the original goals of Congress. On the other hand, if it is anticipated that these fuels will reach a mature and competitive state in the near future, then extension of the credit may be warranted up to the point in time when competitive status is achieved. Continuation of the credit beyond such a point would not comport with the original legislative intent and would provide a competitive advantage for those fuels vis-a-vis competing fuels not qualifying for the credit. With respect to qualifying fuels that have already achieved a competitive posture, a similar analysis should lead to the determination that such fuels should no longer receive the tax credit.

### *Efficiency of the tax credit*

As noted above, the amount of the section 29 credit is adjusted for inflation (except for natural gas produced from a tight formation). The credit amount (in 1979 dollars) is \$3 per barrel of oil or oil equivalent—defined as the amount of fuel that has a heat content of 5.8 million BTUs. In 1994 dollars, the credit had a value of \$5.76 per barrel of oil (or oil equivalent). For natural gas, the 1994 credit figure is \$1.04 per thousand cubic feet (mcf).

Tables 2 and 3 present data on the size of the section 29 credit relative to the market prices for oil and natural gas, respectively.

<sup>27</sup> Ibid.

<sup>28</sup> Ibid.

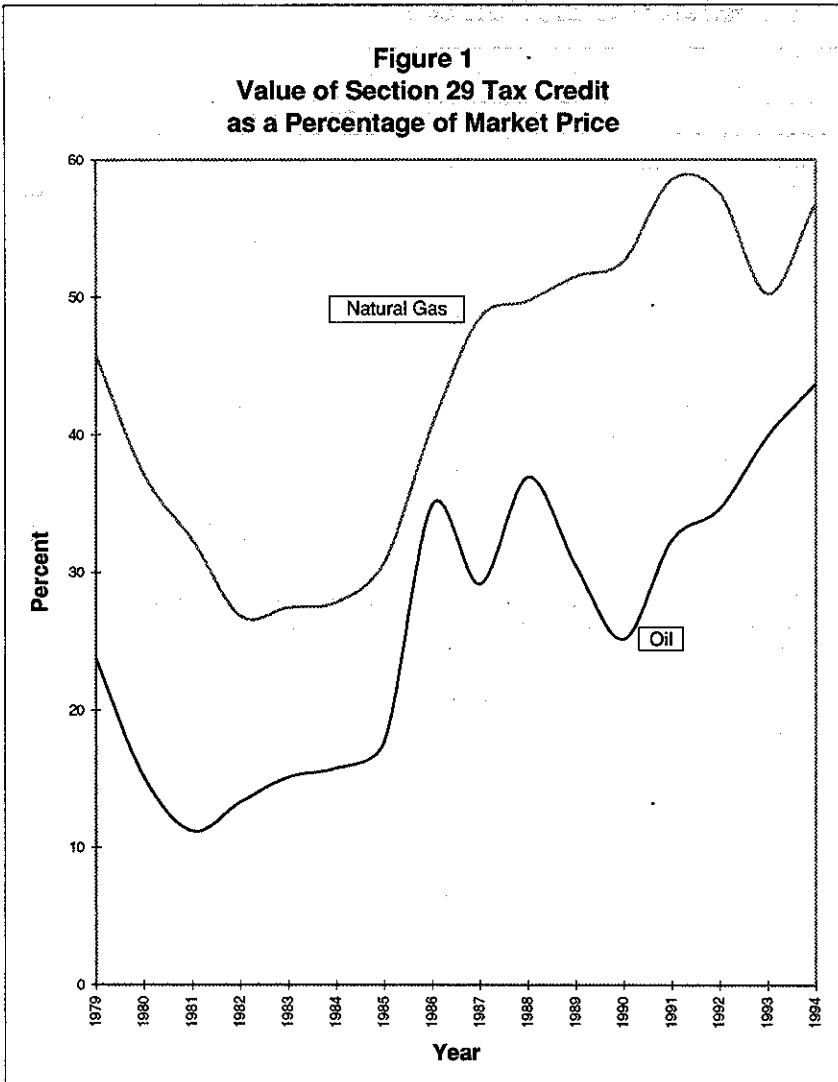
In constructing these tables, the size of the credit was computed for each year from 1979 to 1994, and then divided by a representative annual average market price for the relevant fuel.<sup>29</sup> Tables 2 and 3 indicate the relative size of the incentive to production provided through the credit. While there are substantial year-to-year fluctuations in the relative size of the production incentive, there has been a clear upward trend over the life of the credit. In particular, in 1994, the section 29 credit provided producers with a tax subsidy approximately equal to 44 percent of the average domestic price of oil at the wellhead, and 57 percent of the average market price of natural gas at the wellhead. The increase over time in the relative size of the credit results from the credit being indexed to changes in the overall price level combined with a downward trend in the real (inflation-adjusted) price of oil and natural gas. The data contained in Tables 2 and 3 are summarized in Figure 1.

---

<sup>29</sup> For oil, the average domestic first purchase price was used, and for natural gas the average wellhead price was used as the representative market price. Actual sales price of oil and gas at the wellhead will deviate somewhat from these average figures. In particular, lower quality oil will sell for a lower sales price, meaning the credit will be a greater percentage of price for lower grades of oil qualifying for the credit.



**Figure 1**  
**Value of Section 29 Tax Credit**  
**as a Percentage of Market Price**



**Table 2.—Nonconventional Fuels Production Tax Credit  
Relative to the Market Price of Oil, 1979–1994**

Year	Tax credit per barrel (dollars)	Avg. domestic first purchase price (dollars)	Relative size of tax credit (percent)
1979 .....	3.00	12.64	23.7
1980 .....	3.27	21.59	15.1
1981 .....	3.57	31.77	11.2
1982 .....	3.80	28.52	13.3
1983 .....	3.96	26.19	15.1
1984 .....	4.10	25.88	15.8
1985 .....	4.26	24.09	17.7
1986 .....	4.37	12.51	34.9
1987 .....	4.48	15.40	29.1
1988 .....	4.64	12.58	36.9
1989 .....	4.82	15.85	30.4
1990 .....	5.02	20.03	25.1
1991 .....	5.35	16.54	32.3
1992 .....	5.53	15.99	34.6
1993 .....	5.68	14.25	39.9
1994 .....	5.76	13.19	43.7

Source: Credit amount is from Internal Revenue Service announcements; price data is from *Monthly Energy Review*, various issues, Energy Information Administration, U.S. Department of Energy.

**Table 3.—Nonconventional Fuels Production Tax Credit  
Relative to the Market Price of Natural Gas, 1979–1994**

Year	Tax credit per mcf (dollars)	Avg. wellhead price (dollars)	Relative size of tax credit (per- cent)
1979 .....	0.54	1.18	45.8
1980 .....	.59	1.59	37.1
1981 .....	.64	1.98	32.3
1982 .....	.66	2.46	26.8
1983 .....	.71	2.59	27.4
1984 .....	.74	2.66	27.8
1985 .....	.77	2.51	30.7
1986 .....	.79	1.94	40.7
1987 .....	.81	1.67	48.5
1988 .....	.84	1.69	49.7
1989 .....	.87	1.69	51.5
1990 .....	.90	1.71	52.6
1991 .....	.96	1.64	58.5
1992 .....	1.00	1.74	57.5
1993 .....	1.02	2.03	50.2
1994 .....	1.04	1.83	56.8

Source: Credit amount is from Internal Revenue Service announcements; price data is from *Monthly Energy Review*, various issues, Energy Information Administration, U.S. Department of Energy.

If the section 29 credit were re-characterized as an increase in the sales price of the fuel, the dollar figure to provide the same incentive would be larger. For example, for natural gas in 1994, the \$1.04 tax credit provides approximately the same after-tax benefit to a producer as a \$1.60 increase in the sales price (which would almost double the wellhead price received by the producer of qualified gas).<sup>30</sup> (See Table 3.) It should be noted that the price figures presented are averages, and may mask substantial regional price differences. However, they are suggestive that the production spur from the section 29 credit potentially is large. These figures do not, however, directly address the issue of whether the credit is larger than necessary to encourage the desired amount of production of nonconventional fuels.

### *Equity of credit*

Concern has been raised about possible inequity in the treatment of different fuels under the nonconventional fuels production credit. Because certain fuels that qualify for the credit directly compete in local and national markets with fuels that do not qualify for the credit, producers who do not receive the subsidy may claim that they are subject to unfair competition from credit recipients.<sup>31</sup> To the extent this claim is true, it may be the case that there is less justification for the tax subsidy provided to this class of nonconventional fuels.

---

<sup>30</sup>This computation assumes a producer facing a 35-percent marginal tax rate on income from production.

<sup>31</sup>Some natural gas producers have asserted that the nonconventional fuels production credit has led to excess natural gas in certain local markets, driving down the price received for all gas sold in those markets. In these cases, unsubsidized producers claim they cannot profitably explore for gas in these areas, while producers receiving the credit may be able to earn a competitive return.

## 7. Transportation fuels tax exemption for fuels used in commercial aviation (sec. 4092(b)(2) of the Code)

### *Present Law*

A 4.3-cents-per-gallon excise tax is imposed on fuels used in most transportation modes. Fuels subject to the tax include gasoline (including gasoline blended with alcohol, "gasohol"), diesel fuel, special motor fuels, propane, compressed natural gas, aviation fuels (jet fuel and gasoline), and any other motor fuel used in shipping in the inland waterway system. The transportation modes subject to tax include highway, rail, air, inland waterway, and motorboats and other recreational boats. Fuel consumed before October 1, 1995, in commercial aviation, defined as the transportation of persons or property for hire, is exempt from this tax.

Revenues from this transportation fuels tax are deposited in the General Fund of the Treasury. This tax is separate from, and in addition to, any user-based excise taxes imposed on the same fuels to fund the Highway Trust Fund, the Airport and Airway Trust Fund, the Leaking Underground Storage Tank Trust Fund, the Inland Waterways Trust Fund, or the Aquatic Resources Trust Fund.

### *Legislative Background*

The transportation fuels tax was enacted as part of the Omnibus Budget Reconciliation Act of 1993, as a deficit reduction measure. The exemption for fuel consumed in commercial aviation expires with respect to fuel consumed on or after October 1, 1995.

In the 104th Congress, H.R. 752 (introduced on January 31, 1995 by Messrs. Collins of Georgia, Bunning, Cardin, and English, Ms. Dunn, and others) would permanently extend the exemption from the 4.3-cents-per-gallon fuels tax on commercial aviation by repealing the scheduled application of the tax to commercial aviation fuels.

### *Analysis*

With the exception of commercial aviation, all major transportation modes are subject to the 4.3-cents-per-gallon fuels tax: auto, trucking, rail, and inland shipping. One rationale stated in 1993 for the commercial aviation exemption was the economic condition of the commercial aviation industry.<sup>31a</sup> In evaluating whether to extend the exemption, three main issues should be considered. First, has the economic condition of the commercial aviation industry changed since 1993? Second, is the ultimate burden of the tax (if it is imposed) likely to be borne by the aviation industry or by consumers and, hence, to what extent is an exemption from tax beneficial to the industry? Third, what is the potential for the exemption to create inefficiencies in the transportation sector?

To evaluate the economic condition of the commercial aviation industry, the staff of the Joint Committee on Taxation has drawn a

<sup>31a</sup> See statement by Senator Gorton regarding the "desperate nature of the domestic airline industry. . . ." 139 Cong. Rec. S7885 (daily ed., June 24, 1993).

sample of 21 firms from the Compustat data base.<sup>32</sup> Tables 4a and 4b below detail the gross receipts and net income of these firms for the period 1990–1993. Information for 1994 generally was not available. The assignment of firm financial data to a specific industry may create a more encompassing definition than one might wish to employ. The commercial aviation industry includes passenger and freight services provided by fixed-wing aircraft as well as helicopter services. To draw a distinction between these different subsets of the industry, Tables 4a and 4b report data from a subset of 12 firms that are primarily engaged in passenger service, as well as industry totals.<sup>33</sup>

**Table 4a.—Sales as Reported on Financial Statements of 12 Air Transport Firms 1990–1993**

[Millions of dollars]

Air transport industry	1990	1991	1992	1993
Air transport (total) .....	59,820	61,008	66,357	71,691
Air passenger transport ..	58,764	59,831	64,822	70,049

Source: Joint Committee on Taxation staff tabulations from Compustat data base.

**Table 4b.—Net Income as Reported on Financial Statements of 12 Air Transport Firms 1990–1993**

[Millions of dollars]

Air transport industry	1990	1991	1992	1993
Air transport (total) .....	-3,122	-1,916	-4,913	1,917
Air passenger transport ..	-3,036	-1,879	-5,032	1,869

Source: Joint Committee on Taxation staff tabulations from Compustat data base.

No firm conclusions can be drawn from the data in Tables 4a and 4b because of the small and incomplete sample of firms.<sup>34</sup> Never-

<sup>32</sup> Compustat is a financial data service of Standard and Poors. It maintains publicly available financial information on most public companies and private companies that have publicly traded securities. The Compustat data are from corporate financial reports (i.e., the information the firms report to stock and bond holders) and, consequently, the information may not match information reported on tax returns. Financial information for 1994 was not generally available.

The 21 firms are: Airtran Corporation; Alaska Air Group Incorporated; America West Airlines Incorporated; American Airlines Incorporated; Atlantic Southeast Airlines; Big Sky Transportation; CCAir Incorporated; Comair Holdings Incorporated; Conquest Airlines; Continental Airlines Incorporated; Delta Air Lines Incorporated; HAL Incorporated; Mesa Airlines Incorporated; Metro Airlines Incorporated; Northwest Airlines Corporation; Reno Air Incorporated; Skywest Incorporated; Southwest Airlines; Trans World Airlines; US Air Incorporated; and United Air Lines Incorporated.

The sample is non-random. These firms were chosen because data on sales and income generally were available for the period 1990–1993. The staff of the Joint Committee on Taxation does not necessarily consider these firms as representative of the commercial aviation industry.

<sup>33</sup> The 12 firms are: Alaska Airgroup Incorporated; America West Airlines Incorporated; American Airlines Incorporated; Continental Airlines Incorporated; Delta Air Lines Incorporated; Metro Airlines Incorporated; Northwest Airlines Corporation; Reno Air Incorporated; Southwest Airlines; Trans World Airlines; U.S. Air Incorporated; and United Air Lines Incorporated.

<sup>34</sup> For example, the apparent return to reported profitability of the air passenger sector in 1993 is due to one firm reporting unusually large profits in 1993 after reporting unusually large losses in 1990.

theless, these tables do document the relatively stagnate sales and substantial losses that preceded the congressional debate over the fuels tax exemption. The data also suggest that since that debate sales revenue has grown and a number of firms have generated positive profits. In fact, independent financial analysts estimate that the industry might currently be profitable. The Value Line Investment Survey writes that "[a]irline traffic rose just over 5 percent in 1994, and the upward trend looks like it will continue this year [1995]. Business was up more than 7 percent in January... By our estimates, the Air Transport group came very close to being in the black in 1994.... For this year [1995],... we think substantial profits are likely."<sup>35</sup>

These observations may suggest that the conditions that led the Congress to enact an exemption from the transportation fuels tax may no longer exist. On the other hand, a return to profitability does not necessarily imply that the commercial aviation industry is in robust financial health. If the industry were profitable in 1994, it would be the first such year since the late 1980s. Moreover, current levels of profitability may not be particularly attractive to investors. Many observers continue to believe that airlines will need substantial investment funds to make necessary equipment acquisitions to modernize their fleets.

With regard to the issue of ultimate tax burden, it has been long understood that individuals who are liable for making payments of tax to the government may not be the ones burdened by a tax. Instead, the incidence of a tax will depend upon the conditions of supply and demand in the affected markets. Market forces often shift the burden of a tax from the individual assigned the liability for payment to another party through price changes. Those parties who have the smallest change in behavior in response to a tax change generally will bear the largest part of the burden of that change.

The transportation fuels tax is imposed on the vendor to the transportation industry, not directly on the industry. Depending on relative market conditions for all of the fuels and other products sold by the direct taxpayers, the tax may not be fully passed on to purchasers of any given fuel. Similarly, even if some or all of the tax is found to be passed on to transportation providers, relative market conditions within the commercial aviation industry and with competing transportation modes will determine whether the tax burden remains with the airlines or is passed on to the consuming public. Because fuel market conditions change frequently, even seasonally, predicting with assurance the ultimate burden of this tax is problematic.

The present exclusion for commercial aviation might induce some consumers of transportation services to substitute air transportation for the other modes of transportation.<sup>36</sup> As a result, the exemption from the transportation fuels tax should increase the demand for commercial aviation services. Whether any increase in demand for commercial aviation services increases the profits of existing service providers depends upon the competitive conditions in

<sup>35</sup> "Air Transport Industry," *The Value Line Investment Survey*, March 24, 1995, p. 251.

<sup>36</sup> Public transportation also is exempt from the transportation fuels tax. Hence, consumers might also substitute public transportation for the taxed modes of transportation.

the industry. Where there is competition among service providers, any increase in demand generally would be met by increased load factors on scheduled flights or the addition of more scheduled flights. Price increases that are unrelated to the cost of providing air transportation services would not be expected, because competitors would always have the incentive to undercut their rivals.

Increased load factors could increase profits of existing service providers in competitive markets. Such an increase in profits might induce expansion of service in such markets by either existing service providers or new service providers. Similarly, in air transportation service markets without substantial competition, an increase in demand could enable a service provider to increase its profitability by increasing prices. In the longer run, an increase in profitability might induce another service provider to enter the market and cause prices to drop through increased competition. Whether such increases in profits induce new entrants or expanded service by existing providers depends upon the potential profits that can be earned by providing air transportation services relative to other opportunities in the economy.

The third issue, potential for inefficiencies in the transportation sector, depends on relative market competition among transportation modes. In certain cases, commercial aviation competes with highway, rail, and waterborne movements. Because the tax exemption lowers relative aviation costs, it could increase demand for commercial aviation services. More generally, any such increase due to a tax exemption for one mode of transportation distorts consumer choice and creates inefficiencies in the transportation system. Such distortions may, however, be motivated by other public policy goals, such as a perceived need to ensure an economically viable air transportation system.

Some have suggested that the transportation fuels tax exemption for commercial aviation might be justified by the fact that commercial aviation is subject to other excise taxes on transportation of persons and property and the international departure tax. They argue that exemption from the transportation fuels tax keeps the total burden on the aviation sector from being markedly higher than that on competing modes of transport. Critics of this view note that these other excise taxes generally finance programs of dedicated trust funds that provide benefits to air transportation service providers and customers. For example, these taxes provide dedicated funds for airport modernization and air safety. Further, trucks, autos, buses, and certain shipping are also subject to dedicated excise taxes that finance trust fund expenditure programs.



## **B. Tax Provisions Scheduled for May 10 Hearing**

### **1. Tax credit for research and experimental expenditures (sec. 41 of the Code)**

#### *Present Law*

##### *General rule*

Section 41 of the Internal Revenue Code provides for a research tax credit equal to 20 percent of the amount by which a taxpayer's qualified research expenditures for a taxable year exceed its base amount for that year. The research tax credit is scheduled to expire such that it will not apply to amounts paid or incurred after June 30, 1995.

A 20-percent research tax credit also applies to the excess of (1) 100 percent of corporate cash expenditures (including grants or contributions) paid for basic research conducted by universities (and certain nonprofit scientific research organizations) over (2) the sum of (a) the greater of two minimum basic research floors plus (b) an amount reflecting any decrease in nonresearch giving to universities by the corporation as compared to such giving during a fixed-base period, as adjusted for inflation. This separate credit computation is commonly referred to as the "university basic research credit" (see sec. 41(e)).

##### *Computation of allowable credit*

Except for certain university basic research payments made by corporations, the research tax credit applies only to the extent that the taxpayer's qualified research expenditures for the current taxable year exceed its base amount. The base amount for the current year generally is computed by multiplying the taxpayer's "fixed-base percentage" by the average amount of the taxpayer's gross receipts for the four preceding years. If a taxpayer both incurred qualified research expenditures and had gross receipts during each of at least three years from 1984 through 1988, then its "fixed-base percentage" is the ratio that its total qualified research expenditures for the 1984-1988 period bears to its total gross receipts for that period (subject to a maximum ratio of .16). All other taxpayers (so-called "start-up firms") are assigned a fixed-base percentage of .03.<sup>37</sup>

<sup>37</sup>The Omnibus Budget Reconciliation Act of 1993 included a special rule designed to gradually recompute a start-up firm's fixed-base percentage based on its actual research experience. Under this special rule, a start-up firm (i.e., any taxpayer that did not have gross receipts in at least three years during the 1984-1988 period) will be assigned a fixed base percentage of .03 for each of its first five taxable years after 1993 in which it incurs qualified research expenditures. In the event that the research credit is extended beyond the scheduled June 30, 1995 expiration date, a start-up firm's fixed-base percentage for its sixth through tenth taxable years after 1993 in which it incurs qualified research expenditures will be a phased-in ratio based on its actual research experience. For all subsequent taxable years, the taxpayer's fixed-base per-

Continued

In computing the credit, a taxpayer's base amount may not be less than 50 percent of its current-year qualified research expenditures.

To prevent artificial increases in research expenditures by shifting expenditures among commonly controlled or otherwise related entities, research expenditures and gross receipts of the taxpayer are aggregated with research expenditures and gross receipts of certain related persons for purposes of computing any allowable credit (sec. 41(f)(1)). Special rules apply for computing the credit when a major portion of a business changes hands, under which qualified research expenditures and gross receipts for periods prior to the change or ownership of a trade or business are treated as transferred with the trade or business that gave rise to those expenditures and receipts for purposes of recomputing a taxpayer's fixed-base percentage (sec. 41(f)(3)).

### ***Eligible expenditures***

Qualified research expenditures eligible for the research tax credit consist of: (1) "in-house" expenses of the taxpayer for wages and supplies attributable to qualified research; (2) certain time-sharing costs for computer use in qualified research; and (3) 65 percent of amounts paid by the taxpayer for qualified research conducted on the taxpayer's behalf (so-called "contract research expenses").

To be eligible for the credit, the research must not only satisfy the requirements of present-law section 174 but must be undertaken for the purpose of discovering information that is technological in nature, the application of which is intended to be useful in the development of a new or improved business component of the taxpayer, and must pertain to functional aspects, performance, reliability, or quality of a business component. Research does not qualify for the credit if substantially all of the activities relate to style, taste, cosmetic, or seasonal design factors (sec. 41(d)(3)). In addition, research does not qualify for the credit if conducted after the beginning of commercial production of the business component, if related to the adaptation of an existing business component to a particular customer's requirements, if related to the duplication of an existing business component from a physical examination of the component itself or certain other information, or if related to certain efficiency surveys, market research or development, or routine quality control (sec. 41(d)(4)).

Expenditures attributable to research that is conducted outside the United States do not enter into the credit computation. In addition, the credit is not available for research in the social sciences, arts, or humanities, nor is it available for research to the extent funded by any grant, contract, or otherwise by another person (or governmental entity).

### ***Relation to deduction***

Deductions for expenditures allowed to a taxpayer under section 174 (or any other section) are reduced by an amount equal to 100 percent of the taxpayer's research tax credit determined for the

---

centage will be its actual ratio of qualified research expenditures to gross receipts for any five years selected by the taxpayer from its fifth through tenth taxable years (sec. 41(c)(3)(B)).

taxable year. Taxpayers may alternatively elect to claim a reduced research tax credit amount under section 41 in lieu of reducing deductions otherwise allowed (sec. 280C(c)(3)).

### ***Legislative Background***

The research tax credit initially was enacted in the Economic Recovery Tax Act of 1981 as a credit equal to 25 percent of the excess of qualified research expenses incurred in the current taxable year over the average of qualified research expenses incurred in the prior three taxable years. The research tax credit was modified in the Tax Reform Act of 1986, which (1) extended the credit through December 31, 1988, (2) reduced the credit rate to 20 percent, (3) tightened the definition of qualified research expenses eligible for the credit, and (4) enacted the separate, university basic research credit.

The Technical and Miscellaneous Revenue Act of 1988 ("1988 Act") extended the research tax credit for one additional year, through December 31, 1989. The 1988 Act also reduced the deduction allowed under section 174 (or any other section) for qualified research expenses by an amount equal to 50 percent of the research tax credit determined for the year.

The Omnibus Budget Reconciliation Act of 1989 ("1989 Act") effectively extended the research credit for nine months (by prorating qualified expenses incurred before January 1, 1991). The 1989 Act also modified the method for calculating a taxpayer's base amount (i.e., by substituting the present-law method which uses a fixed-base percentage for the prior-law moving base which was calculated by reference to the taxpayer's average research expenses incurred in the preceding three taxable years). The 1989 Act further reduced the deduction allowed under section 174 (or any other section) for qualified research expenses by an amount equal to 100 percent of the research tax credit determined for the year.

The Omnibus Budget Reconciliation Act of 1990 extended the research tax credit through December 31, 1991 (and repealed the special rule to prorate qualified expenses incurred before January 1, 1991).

The Tax Extension Act of 1991 extended the research tax credit for six months (i.e., for qualified expenses incurred through June 30, 1992).

The Omnibus Budget Reconciliation Act of 1993 ("1993 Act") extended the research tax credit for three years—i.e., retroactively from July 1, 1992 through June 30, 1995. The 1993 Act also provided a special rule for start-up firms, so that the fixed-base ratio of such firms eventually will be computed by reference to their actual research experience (see footnote 37, *supra*).

In the 104th Congress, H.R. 803 (introduced on February 2, 1995, by Mrs. Johnson of Connecticut and Messrs. Matsui, Herger, and Neal) would permanently extend the research tax credit.

### ***Analysis***

#### ***Overview***

Technological development is an important component of economic growth. However, businesses may not find it profitable to in-

vest in research because it is difficult to capture the full benefits from the research and prevent such benefits from being used by competitors. In general, businesses acting in their own self-interest will not necessarily invest in research to the extent that would be consistent with the best interests of the overall economy. This is because costly scientific and technological advances made by one firm are cheaply copied by its competitors. A tax subsidy is one method of offsetting this bias against research, so that research projects undertaken approach the optimal level. (Other methods by which the Federal Government provides benefits for research are through direct spending and grants, through favorable anti-trust rules, and through patent protection.) Research is one of the areas where there is a consensus that government intervention in the marketplace can improve overall economic efficiency. However, this does not mean that increased tax benefits or more government spending for research always will improve economic efficiency. It is possible to decrease economic efficiency by spending too much on research. It is difficult to determine whether, at the present levels of government subsidies for research, further government spending on research or additional tax benefits for research would increase or decrease overall economic efficiency.

Much of what has been written about the research credit is in reference to the credit before it was restructured by the Omnibus Budget Reconciliation Act of 1989. This literature—generally critical of the pre-1989 Act version of the credit—was instrumental in the decision to restructure the credit from an incremental credit with a base amount equal to a moving average of previous years' qualified expenditures to one with a so-called "fixed base." These studies are of limited usefulness, however, in evaluating a restructured research credit.

Scant evidence is available about the effectiveness of the restructured research credit, although it is expected to be substantially more effective than the prior-law credit. The revised research credit structure may be quite effective in increasing research expenditures, but its effect is largely uncertain because there is little evidence about the responsiveness of research to changes in taxes and other factors affecting its price. In addition, there apparently have been no specific studies of the effectiveness of the university basic research tax credit.

#### *a. The research tax credit*

##### *Incremental tax credits*

For a tax credit to be effective in increasing a taxpayer's research expenditures it is not necessary to provide that credit for all the taxpayer's research expenditures. By limiting the credit to expenditures above a base amount, incremental tax credits attempt to target the tax incentives where they will have the most effect on taxpayer behavior.

Suppose, for example, a taxpayer is considering two potential research projects: Project A will generate cash flow with a present value of \$105 and Project B will generate cash flow with present value of \$95. Suppose that the cost of investing in each of these

projects is \$100. Without any tax incentives, the taxpayer will find it profitable to invest in Project A and will not invest in Project B.

Consider now the situation where a 10-percent "flat credit" applies to all research expenditures incurred. In the case of Project A, the credit effectively reduces the cost to \$90. This increases profitability, but does not change behavior with respect to that project, since it would have been undertaken in any event. However, because the cost of Project B also is reduced to \$90, this previously neglected project (with a present value of \$95) would now be profitable. Thus, the tax credit would affect behavior only with respect to this marginal project.

Incremental credits attempt not to reward projects which would have been undertaken in any event and to target incentives to marginal projects. To the extent this is possible, incremental credits have the potential to be far more effective per dollar of revenue cost than flat credits in inducing taxpayers to increase qualified expenditures.<sup>38</sup> Unfortunately, it is nearly impossible as a practical matter to determine which particular projects would be undertaken without a credit and to provide credits only to other projects. In practice, almost all incremental credit proposals rely on some measure of the taxpayer's previous experience as a proxy for a taxpayer's total qualified expenditures in the absence of a credit. This is referred to as the credit's "base amount." Tax credits are provided only for amounts above this base amount.

Since a taxpayer's calculated base amount is only an approximation of what would have been spent in the absence of a credit, in practice, the credit may be less effective per dollar of revenue cost than it otherwise might be in increasing expenditures. If the calculated base amount is too low, the credit is awarded to projects that would have been undertaken even in the absence of a credit. If, on the other hand, the calculated base amount is too high, then there is no incentive for projects that actually are on the margin.

Nevertheless, the incentive effects of incremental credits per dollar of revenue loss can be many times larger than those of a flat credit.<sup>39</sup> However, in comparing a flat credit to an incremental credit, there are other factors that also deserve consideration. A flat credit generally has lower administrative and compliance costs than does an incremental credit. Probably more important, however, is the potential misallocation of resources and unfair competition that could result as firms with qualified expenditures determined to be above their base amount receive credit dollars, while other firms with qualified expenditures considered below their base amount receive no credit.

### *The responsiveness of research expenditures to tax incentives*

Like any other commodity, the amount of research expenditures that a firm wishes to incur generally is expected to respond positively to a reduction in the price paid by the firm. Economists often refer to this responsiveness in terms of "price elasticity," which is

<sup>38</sup>In the example above, if an incremental credit were properly targeted, the Government could spend the same \$20 in credit dollars and induce the taxpayer to undertake a marginal project so long as its expected cash flow exceeded \$80.

<sup>39</sup>As discussed below, this is much less likely in the case of incremental credits with a moving-average base.

measured as the ratio of the percentage change in quantity to a percentage change in price. For example, if demand for a product increases by 5 percent as a result of a 10-percent decline in price paid by the purchaser, that commodity is said to have a price elasticity of demand of 0.5.<sup>40</sup>

One way of reducing the price paid by a buyer for a commodity is to grant a tax credit upon purchase. A tax credit of 10 percent (if it is refundable or immediately usable by the taxpayer against current tax liability) is equivalent to a 10-percent price reduction. If the commodity granted a 10-percent tax credit has an elasticity of 0.5, the amount consumed will increase by 5 percent. Thus, if a flat research tax credit were provided at a 10-percent rate, and research expenditures had a price elasticity of 0.5, the credit would increase research spending by 5 percent.<sup>41</sup> It is important to note, especially in anticipation of the discussion of incremental credits, that not all research expenditures need be subject to a price reduction to have this effect. Only the expenditures which would not have been undertaken otherwise—so called marginal research expenditures—need be subject to the credit to have a positive incentive effect.

Despite the central role of the measurement of price elasticity, there is little empirical evidence on this subject. What evidence exists generally indicates that the price elasticity for research is substantially less than one. For example, one survey of the literature reached the following conclusion:<sup>42</sup>

In summary, most of the models have estimated long-run price elasticities of demand for R&D on the order of -0.2 and -0.5....However, all of the measurements are prone to aggregation problems and measurement errors in explanatory variables.

Although most analysts agree that there is substantial uncertainty in these estimates, the general consensus when assumptions are made with respect to research expenditures is that the price elasticity of research is less than 0.5.<sup>43</sup>

<sup>40</sup>For simplicity, this analysis assumes that the product in question can be supplied at the same cost despite any increase in demand (i.e., the supply is perfectly elastic). This assumption may not be valid, particularly over short periods of time, and particularly when the commodity—such as research scientists and engineers—is in short supply.

<sup>41</sup>It is useful to note that for flat credits, the price elasticity can be quickly translated into a measure of the effectiveness of the credit. For example, suppose research expenditures qualified for the credit are equal to \$40 billion (disregarding the second-order effects of behavioral responses on revenue). If research price elasticity is 0.5, a 10-percent flat credit would increase research expenditures by \$2 billion and have an approximate revenue cost of \$4 billion. If the research price elasticity is 1.0, a 10-percent flat credit will increase research expenditures by \$4 billion and have an approximate revenue cost of \$4 billion. The ratio of increased expenditures to revenue cost is sometimes referred to as the "bang-for-the-buck." Thus, for a flat research credit, the research price elasticity equals the "bang-for-the-buck" of the credit.

<sup>42</sup>Charles River Associates, *An Assessment of Options for Restructuring the R&D Tax Credit to Reduce Dilution of its Marginal Incentive* (final report prepared for the National Science Foundation), February, 1985, p. G-14.

<sup>43</sup>In a 1983 study, the Treasury Department used an elasticity of .92 as its upper range estimate of the price elasticity of R&D, but noted that the author of the unpublished study from which this estimate was taken conceded that the estimate might be biased upward. See, Department of the Treasury, *The Impact of Section 861-8 Regulation on Research and Development*, p. 23. As stated in the text, although there is uncertainty, most analysts believe the elasticity is considerable smaller. For example, the General Accounting Office summarizes: "These studies, the best available evidence, indicate that spending on R&E is not very responsive to price reductions. Most of the elasticity estimates fall in the range of -0.2 and -0.5 . . . . Since it is commonly recognized that all of the estimates are subject to error, we used a range of elasticity estimates to compute a range of estimates of the credit's impact." See, *The Research Tax Credit Has Stim-*

If this working assumption were assumed to be correct, it would be impossible for a flat credit to increase research spending by more than one half of the revenue cost of the credit. As discussed above, certain incremental credits have the potential to reduce the revenue cost of a credit with no diminution of incentive effects, at least for those firms that have qualified expenditures above the base amount.

### *The effective rate of credit*

If a firm is able to use fully the credit in the year in which it is earned (or if the credit is refundable), and the credit is not subject to any limitations, the effective rate of credit generally could be equal to the statutory rate. However, there are many factors which may drive an effective rate of credit below the statutory rate. These factors are discussed below.

### *Moving-base credit*

In general, an incremental tax credit with a base amount equal to a moving average of previous years' qualified expenditures is considered to have an effective marginal rate of credit substantially below its statutory rate. This is because an increase in qualified research expenditures in the current year will not only increase tax credits in the current year, but will also reduce tax credits in subsequent years. For example, under the research credit in effect prior to the 1989 Act (which computed a taxpayer's base amount as a moving average of its research expenditures for the previous three years), a \$1 increase in research expenditures in the current year would increase the firm's tax credit by 20 cents in the current year but would also increase the firm's base amount by 33 cents in each of the following three years. Consequently, the \$1 expenditure in the current year would reduce the credit by 6 and two-thirds cents in each of the following three years. On the margin, the incentive for a \$1 dollar increase in research was 20 cents in the current year, with a pay back of that 20 cents ratably over the following three years.<sup>44</sup>

Under the present-law research credit as redesigned by the 1989 Act, current expenditures have no direct impact on the calculation of the base, so that \$1 of increased research spending can increase

*ulated Some Additional Research Spending* (GAO/GGD-89-114), September 1989, p. 23. Similarly, Edwin Mansfield concludes: "While our knowledge of the price elasticity of demand for R&D is far from adequate, the best available estimates suggest that it is rather low, perhaps about 0.3." See, "The R&D Tax Credit and Other Technology Policy Issues," *American Economic Review*, Vol. 76, no. 2, May 1986, p. 191. More recent empirical analyses have estimated higher elasticity estimates. One recent empirical analysis of the research credit has estimated a short-run price elasticity of 0.8 and a long-run price elasticity of 2.0. The author of this study notes that the long-run estimate should be viewed with caution for several technical reasons. In addition, the data utilized for the study cover the period 1980 through 1991, containing only two years under the revised credit structure. This makes it empirically difficult to distinguish short-run and long-run effects, particularly as it may take firms some time to fully appreciate the incentive structure of the revised credit. See, Brownwyn H. Hall, "R&D Tax Policy During the 1980s: Success or Failure?" in James M. Poterba (ed.), *Tax Policy and the Economy*, 7, at 1-35 (Cambridge: The MIT Press 1993). Another recent study examined the post-1986 growth of research expenditures by 40 U.S.-based multinationals and found price elasticities between 1.2 and 1.8. However, including an additional 76 firms, that had initially been excluded because they had been involved in merger activity, the estimated elasticities fell by half. See, James R. Hines, Jr., "On the Sensitivity of R&D to Delicate Tax Changes: The Behavior of U.S. Multinationals in the 1980s" in Alberto Giovannini, R. Glenn Hubbard, and Joel Slemrod (eds.), *Studies in International Taxation*, (Chicago: University of Chicago Press 1993).

<sup>44</sup>The benefit, in essence, was the time value of money.

a firm's tax credit by 20 cents in the current year, with no effect on its base calculation in subsequent years. Thus, the present-law incremental research credit has the potential (as does a flat credit) to have a marginal effective rate of credit equal to the statutory rate of credit.

*Firms with qualified expenditures less than the base amount*

Unlike a flat credit, however, an incremental credit does not provide an incentive for all firms undertaking qualified research expenditures. Many firms have current-year qualified expenditures below the base amount. These firms receive no tax credit and have an effective rate of credit of zero. Although there is no revenue cost associated with firms with qualified expenditures below base, there may be a distortion in the allocation of resources as a result of these uneven incentives.

*Inadequate tax liability and other limitations*

If a firm has no current tax liability, or if the firm is subject to the alternative minimum tax (AMT) or the general business credit limitation, the research credit must be carried forward for use against future-year tax liabilities. The inability to use a tax credit immediately reduces its value according to the length of time between when it actually is earned and the time it actually is used to reduce tax liability.<sup>45</sup>

*Base limitation*

Under present law, firms with research expenditures substantially in excess of their base amount may be subject to the 50-percent limitation. In general, although these firms receive the largest amount of credit when measured as a percentage of their *total* qualified research expenditures, their marginal effective rate of credit is exactly one half of the statutory credit rate of 20 percent (i.e., firms on the base limitation effectively are governed by a 10-percent credit rate).

*Average effective rate of the credit*

Although the statutory rate of the research credit is currently 20 percent, it is likely that the average marginal effective rate may be substantially below 20 percent, even though the restructured research credit does not have a moving base. Reasonable assumptions about the frequency that firms are subject to various limitations discussed above yields estimates of an average effective rate of credit between 25 and 40 percent below the statutory rate i.e., between 12 and 15 percent. Table 5 summarizes the expected increase in qualified research expenditures for a variety of assumptions about price elasticities and average marginal effective rates of credit, assuming \$30 billion<sup>46</sup> in aggregate qualified research expenditures.

<sup>45</sup> As with any tax credit that is carried forward, its full incentive effect could be restored, absent other limitations, by allowing the credit to accumulate interest that is paid by the Treasury to the taxpayer when the credit ultimately is utilized.

<sup>46</sup> In 1988, qualified research expenditures for Subchapter C corporations were approximately \$22 billion.



**Table 5.—Projected Increase in Qualified Research Expenditures, Given \$30 Billion of Qualified Research Expenditures, Under Various Assumptions about the Price Elasticity of R&D and the Effective Rate of Credit**

[In billions of dollars]

Effective rate of credit (percent)	Price elasticity					
	0.0	0.1	0.2	0.3	0.4	0.5
12 .....	0	0.4	0.7	1.0	1.4	1.8
13 .....	0	.4	.8	1.2	1.6	2.0
14 .....	0	.4	.8	1.3	1.7	2.1
15 .....	0	.5	.9	1.4	1.8	2.3

### *Stability of the research credit over time*

Although the moving-base incremental research tax credit under prior law had many undesirable features, one advantage it had over the current fixed-base credit concerns the evolution of each firm's base over time. A moving-average base can never substantially vary from a firm's actual experience for a sustained period of time. (In other words, a moving-average base design can be viewed as inherently "self-correcting.") For example, under prior law, if a firm decided to double its research expenditures (either permanently or at least for several years), the firm's calculated research base amount also would double after three years. In contrast, under the present-law research credit, if a firm doubles its research budget, the firm's base amount will not double unless, eventually, its gross receipts increase commensurately. Since sales growth over a long time frame will rarely track research growth as well as the previous three year's research growth, it can be expected that over time each firm's base will "drift" from the firm's actual current qualified research expenditures. Therefore, increasingly over time there will be a larger number of firms either substantially above or below their calculated base. This could gradually create an undesirable situation where many firms receive no credit and have no reasonable prospect of ever receiving a credit, while other firms receive large credits (despite the 50-percent base limitation). Thus, over time, it can be expected that, for those firms eligible for the credit, the average marginal effective rate of credit will decline while the revenue cost to the Government increases.

### *Cycling of research expenditures*

As under the prior-law research credit structure, many firms currently have a substantial tax incentive to cycle or bunch their qualified research expenditures. For example, suppose a firm before enactment of the research credit had planned to spend \$100 on qualified research expenditures in each of two succeeding years. Suppose also that the firm had a base of \$90 in both of those years. If the firm maintained expenditures at \$100, it would earn \$2 of credit in each of the two years. However, if the firm reduced its expenditures to \$70 in the first year and increased its qualified research expenditures to \$130 in the following year (thereby still con-

ducting \$200 of research over the 2-year period), the taxpayer would earn \$8 of tax credit.<sup>47</sup> Although the tax advantages of cycling can be large, many observers believe it will not take place to a significant degree, because it is difficult to shift (either by delay or acceleration) from one year to another qualified research expenditures, which consist in large part of salaries of scientists and other highly skilled labor.<sup>48</sup>

### ***Administration of the credit***

The GAO recently has testified that the revised credit remains difficult for the IRS to administer. The GAO reports that the IRS view is that it is "required to make difficult technical judgments in audits concerning whether research was directed to produce truly innovative products or processes." While the IRS employs engineers in such audits, the companies engaged in the research typically have technical personnel with greater expertise and, as would be expected, personnel with greater expertise regarding the specific research conducted by the company under audit. Such audits create a burden for both the IRS and taxpayers. The credit generally requires taxpayers to maintain records more detailed than those necessary to support the deduction of research expenses under section 174.<sup>49</sup>

### ***b. The university basic research credit***

The university basic research credit is a fixed-base credit with many of the same economic properties as the more generally available research tax credit. The university basic research credit is targeted to basic research performed by educational institutions and certain other non-profit scientific organizations, which may result in more economic benefits since the spillover benefits of basic research to society as a whole often are larger than benefits derived from applied research.<sup>50</sup> Apparently, there has been no empirical research assessing the effectiveness of the university basic research credit.

<sup>47</sup> This is derived as follows: \$8 is 20 percent of the difference between \$130 and \$90.

<sup>48</sup> Although supplies used in research also generally are eligible for the credit, this does not include real property or depreciable property (such as a computer).

<sup>49</sup> Natwar M. Gandhi, Associate Director Tax Policy and Administration Issues, General Government Division, U.S. General Accounting Office, "Testimony before the Subcommittee on Taxation and Internal Revenue Service Oversight, Committee on Finance, United States Senate," April 3, 1995.

<sup>50</sup> Some observers have noted, however, that many of the results of basic research provide benefits not only to the United States but to the economies of other countries.

## 2. Allocation of research expenses to U.S. and foreign income (sec. 864(f) of the Code)

### *Overview*

This item of the pamphlet reviews the rules for allocating and apportioning deductions for research expenses between U.S. and foreign source income. A temporary statutory research allocation rule remains in effect for some fiscal year taxpayers, but expired generally for taxable years beginning after August 1, 1994. Extending the statutory research allocation rule would tend to increase taxpayers' foreign tax credit limitations.

If no extension of the statutory allocation rule is enacted, the effect of research expenses on the foreign tax credit limitation will be determined by reference to regulations in effect since 1977, as they may be amended by the Treasury from time to time in the future. The 1977 regulation generally permits taxpayers to automatically allocate at least 30 percent of U.S.-performed research expense against U.S. source income.

If the statutory rule is extended, the effect of research expenses on the foreign tax credit limitation will be determined by reference to Code section 864(f). This Code section contains a modification of allocation rules originally enacted in 1988 on a temporary basis and extended, also on a temporary basis, in 1989, 1990, and 1991 by statute, and in 1992 by Revenue Procedure. As explained below, this Code section would permit taxpayers to allocate at least 50 percent of U.S.-performed research expense against U.S. source income. The allocation rules of section 864(f) are, in general, more generous to taxpayers than the allocation rules of the 1977 regulation.

The practical tax effect of any particular research allocation rule on any particular taxpayer depends on the level of its excess foreign tax credits. Businesses find themselves in an excess credit or excess limitation position based on a myriad of other aspects of the U.S. and foreign tax laws, any of which can change: for example, rates of income tax imposed by foreign governments, U.S. rules for sourcing items of gross income, and U.S. rules for allocating deductions other than research expenses. An increase in the foreign tax credit limitation of a U.S.-based multinational company with excess foreign tax credits tend to reduce its U.S. tax liability.

As explained further below, a great deal of consideration has been given in the past 20 or more years to various alternative research allocation rules and the policies supporting each alternative. Perhaps the least generous such alternative, from the taxpayer's viewpoint, was embodied in 1973 proposed regulations. The most generous alternative, permitting 100 percent of U.S.-performed research expense to be allocated to U.S. source income, was enacted in 1981 and extended on a temporary basis in 1984 and 1985. A third alternative, permitting 50 percent of U.S.-performed research expense to be allocated to U.S. source income, was enacted on a temporary basis in 1986. A fourth alternative, permitting 67 percent of U.S.-performed research expense to be allocated to U.S. source income, was tentatively agreed to by the Administration and industry in 1987, was passed by the House of Representatives and

favorably reported by the Senate Committee on Finance, but was not included in final legislation.

The following sections of this pamphlet discuss the history of all of the above research allocation alternatives, their practical impacts on taxpayers (see Tables 6–8 below), and the various tax policy arguments raised on their behalf. Of course, the alternatives described do not exhaust the possibilities for future enactments; the Congress and the President could in the future enact statutory research allocation rules that differ in some way from all of the above-mentioned alternatives.

### *Present Law*

#### *Foreign income and the foreign tax credit*

##### *Introduction*

U.S. persons<sup>51</sup> are taxable on their worldwide income, including their foreign income.<sup>52</sup> That is, the taxable income reported on the U.S. tax return of a U.S. person includes both U.S. and foreign income. A U.S. person who earns foreign income may incur foreign income tax. The United States allows U.S. persons subject to the regular income tax to take full, dollar-for-dollar credit for foreign income taxes. This credit directly reduces U.S. tax.

The purpose of the foreign tax credit is to prevent U.S. taxpayers from paying tax twice on their foreign income—once to the foreign country where the income arises and again to the United States as part of the taxpayer's worldwide income. This foreign tax credit system embodies the principle that the country where a taxpayer conducts a business activity (or earns any income), known as the source country, has the first right to tax any or all of that income even if it is not the taxpayer's home country. Under this principle, the taxpayer's country of residence has a residual right to tax that income; that is, the residence country taxes foreign income only to the extent that the residence country income tax rate exceeds the source country rate. As a practical matter, the residence country tax on foreign income often is wholly eliminated.

Some countries avoid double taxation by exempting foreign source income from tax altogether. Most developed countries, however, including the United States, minimize double taxation through a foreign tax credit system, providing a dollar-for-dollar credit against home country tax liability for income taxes paid to a foreign country. Both the exemption system and the foreign tax credit system require a determination of what income is domestic and what income is foreign.

##### *Foreign tax credit limitation*

*Purpose.*—A fundamental premise of the U.S. foreign tax credit system is that foreign taxes should not offset the U.S. tax on U.S. source income. Accordingly, a statutory formula limits the foreign tax credit so that the credit will offset only the U.S. tax on the taxpayer's foreign income. As a result of the limitation, the U.S. tax

<sup>51</sup> U.S. persons are U.S. citizens, resident aliens, domestic partnerships, domestic corporations, and, generally, domestic trusts and estates (sec. 7701(a)(30)).

<sup>52</sup> Foreign earned income of a qualified U.S. individual may be exempt from U.S. income tax under section 911.

system generally departs from capital-export neutrality where firms operate in foreign countries that levy an income tax greater than the U.S. tax on foreign source income.

Without the foreign tax credit limitation, foreign countries could effectively levy a tax on U.S. source income by raising their tax rates above the U.S. rate. Because of the credit, the U.S. Treasury would absorb the additional foreign tax burden. That is, post-credit U.S. taxes owed on U.S. source income would be reduced.

*Computing the foreign tax credit.*—The limitation generally operates by separating the taxpayer's U.S. tax liability on worldwide income, computed before foreign tax credits ("pre-credit U.S. tax"), into two categories: tax on U.S. source taxable income and tax on foreign source taxable income.<sup>53</sup> Computing the limitation involves computing the ratio of foreign source taxable income to worldwide taxable income. This fraction is multiplied by the pre-credit U.S. tax. The product of this multiplication represents the amount of pre-credit U.S. taxes associated with foreign income. This amount is the upper limit on the foreign tax credit. Note that this upper limit rises proportionately with any rise in the portion of the taxpayer's worldwide taxable income that is treated as foreign source taxable income.

In a typical case, a corporate taxpayer might take a foreign tax credit for either foreign income taxes paid or the U.S. corporate tax rate times foreign taxable income, whichever is less. Generally speaking, as U.S. tax rates go down (relative to foreign rates), the more likely it becomes that pre-credit U.S. tax on foreign source income will be less than foreign taxes actually paid.

*Examples.*—The following example illustrates the computation of the foreign tax credit limitation:

Assume that the U.S. taxpayer has foreign source taxable income of \$300 and U.S. source taxable income of \$200, for total taxable income of \$500. Assume further that the pre-credit U.S. tax on the \$500 is \$175 (i.e., 35 percent of \$500).

Since 60 percent ( $\$300/\$500$ ) of the taxpayer's total worldwide taxable income is from foreign sources, the foreign tax credit is limited to \$105, or 60 percent of the \$175 pre-credit U.S. tax. Thus, if foreign taxes paid exceed \$105, only \$105 of foreign tax credit will be allowed (the excess taxes paid may be carried to other years). If the taxpayer has paid less than \$105 in foreign taxes, the taxpayer will have a foreign tax credit equal to the amount of the taxes paid.

The manner in which the foreign tax credit limitation prevents foreign countries from effectively levying a tax on U.S. source income and protects the U.S. Treasury's right to tax U.S. source income may be illustrated as follows:

Assume that each of two U.S. corporations earns \$100 of U.S. income and faces an average U.S. income tax rate of 35 percent. One of them earns no foreign income. The other earns \$100 of foreign income and pays \$50 of foreign tax on that income.

The taxpayer with no foreign income owes \$35 of U.S. tax. The taxpayer with foreign income has pre-credit U.S. tax of \$70 (on

<sup>53</sup>A series of separate limitations further subdivides the tax on different types of foreign source income.

\$200 of worldwide income). That taxpayer would owe \$20 of U.S. tax if there were no foreign tax credit limitation—the \$70 pre-credit U.S. tax less the \$50 credit. High foreign taxes imposed by a foreign government would reduce the U.S. tax paid on U.S. income from \$35 to \$20. The limitation prevents such reduction of the U.S. tax base.

#### *Excess foreign tax credits*

Excess foreign tax credits exist when the amount of creditable foreign income taxes paid or accrued in a given year exceeds the taxpayer's foreign tax credit limitation. Excess credits can be expected to arise where the effective income tax rate imposed (or deemed to be imposed) by a foreign country on income of a U.S. taxpayer is higher than the U.S. income tax rate.

Excess credits can arise, for example, from differences in the deduction allocation rules of the United States and those of other countries. For example, in those cases where a foreign country does not allocate a deduction for U.S.-performed research to income taxed within that country, and the United States does, the foreign taxes will be higher than if the foreign country allowed the research deduction, and may exceed the foreign tax credit limitation.

Excess credits can arise for a variety of other reasons. Differences between the income-sourcing rules of the United States and those of other countries may result in U.S. treatment of income taxed by another country as domestic income for purposes of the foreign tax credit. Timing differences in the reporting of income and deductions under U.S. and foreign tax laws may result in a taxpayer's being unable to utilize some foreign tax credits in a year in which income is reported in a foreign country but not in the United States. Domestic losses may reduce worldwide taxable income and pre-credit U.S. tax and, hence, the amount of foreign tax credits that can be used currently.

One way taxpayers may reduce excess credits is to shift foreign operations to a foreign country with an effective income tax rate equal to or lower than the U.S. income tax rate. Another method is to use self-help to reduce the taxpayer's effective foreign income tax rates in the foreign countries where it currently operates. A third alternative is to bring the foreign operations located in a high-tax foreign country back to the United States.

#### *Source rules for income and deductions—in general*

As explained above, taxable income from foreign sources times pre-credit U.S. tax constitutes the numerator of the fraction that determines the foreign tax credit limitation. Thus the foreign tax credit limitation increases proportionately when foreign source taxable income increases. Taxable income from foreign sources is computed by (1) determining the items of gross income that are from foreign sources, and then (2) subtracting from that amount of gross income that portion of the taxpayer's deductions that are allocable to foreign source gross income. The following discussion addresses first the sourcing of items of gross income, and then the allocation of items of expense.

*Sourcing items of income.*—The greater the portion of a taxpayer's gross income that the taxpayer derives from foreign sources

(or the lesser the portion it derives from U.S. sources), the greater will be the foreign tax credit limitation. Sections 861 and 862 list items of gross income that arise from sources within the United States ("U.S. source gross income" or "U.S. gross income") and from sources outside the United States ("foreign source gross income" or "foreign gross income"), respectively. Under section 861, U.S. gross income includes, generally, income from sales of inventory property manufactured in the United States and sold in the United States, wages and salaries for work done in the United States, rent paid for property located in the United States, dividends paid by U.S. corporations, and interest paid by U.S. persons. Under section 862, foreign gross income includes income from the sale outside the United States of inventory property manufactured outside the United States, royalties from the use outside the United States of patents, secret processes, and similar properties, and dividends paid by certain foreign corporations. Sections 865 and 988 provide rules for determining the source of income from sales and other dispositions of certain types of personal property.

*Allocating and apportioning items of expense; Code rules in general.*—After determining the amount of gross foreign source and U.S. source income, taxpayers must determine *net* (or taxable) foreign source and U.S. source income. This determination brings deductible expenses into play. The smaller the portion of any particular deduction of a taxpayer that is allocated to foreign source gross income (or the greater the portion allocated to domestic source gross income), the greater will be the taxpayer's foreign tax credit limitation.

Generally, under sections 861 and 862, taxable income from U.S. or foreign sources is determined by deducting from the items of gross income treated as arising from U.S. or foreign sources, as the case may be, (1) those expenses, losses, and other deductions properly apportioned or allocated to those particular items and (2) a ratable part of any expenses, losses, or other deductions which cannot definitely be allocated to some item or class of gross income (secs. 861(b), 862(b)).<sup>54</sup>

Under these principles, for example, a taxpayer with \$100 of U.S. source gross income, \$80 of expense properly allocated to U.S. source gross income, \$100 of foreign source gross income, \$70 of expense properly allocated to foreign source gross income, and \$10 of expense that cannot definitely be allocated to U.S. or foreign source gross income, will split that \$10 proportionately (in this case, evenly) between U.S. and foreign gross income. The taxpayer will thus have \$15 of U.S. source taxable income (\$100-\$80-\$5) and \$25 of foreign source taxable income (\$100-\$70-\$5).

The Code generally articulates only the broad principles of how expenses reduce U.S. and foreign income, leaving it up to the Treasury to provide detailed rules for the allocation and apportionment of expenses.

<sup>54</sup>Section 863 specifies that items of gross income, expenses, losses, and deductions other than those specified in sections 861 and 862 are to be allocated or apportioned to sources within or outside of the United States under regulations prescribed by the Secretary of the Treasury. Section 863 also contains general rules for computing taxable income when gross income derives from sources partly within and partly outside of the United States, as well as source rules for transportation income, space and ocean income, and international communications income.

*Regulatory rules for expense allocation—in general.*—Treasury Regulation sections 1.861–8 and 1.861–8T through 1.861–14T (“the Regulations”) apply in determining foreign source taxable income for calculation of the foreign tax credit limitation.<sup>55</sup> They provide specific rules for the treatment of expenses, losses, and certain other deductions. Generally, as the first step in calculating foreign source income, the Regulations require a taxpayer to allocate his deductions to individual “classes” of gross income.<sup>56</sup>

When a particular expense relates to a class of gross income including both U.S. and foreign source income, the Regulations generally prescribe no single method for apportioning deductions between the two. The Regulations state that the method used in apportioning a deduction must reflect the factual relationship between the deduction and the gross income. The Regulations contain a nonexclusive list of bases and factors to consider. Some of these relevant bases and factors are: a comparison of units sold (between sales yielding foreign source and sales yielding U.S. source gross income), a comparison of profit contributions, a comparison of gross sales or receipts, and a comparison of amounts of gross income. The Regulations’ list contemplates that the higher the proportion of foreign sales or foreign gross income (for example), the greater, logically, the proportion of expenses attributable to foreign source income.

Several types of deductions are considered not definitely related to any gross income under the Regulations. These include, for example, the deductions for medical expenses and (unless currently proposed regulations become final) charitable contributions. These deductions reduce foreign and U.S. gross income pro rata.

The Regulations set forth detailed allocation and apportionment rules for certain types of deductions, including those for interest, research and development expenditures, stewardship expenses, and legal and accounting fees and expenses. (A detailed discussion of the rules for research deductions appears in “Allocation and apportionment rules for research deduction,” below.)<sup>57</sup>

Insofar as the Regulations apply specifically to research expenses, they were promulgated in their present form in 1977.<sup>58</sup>

<sup>55</sup>They also apply in determining the taxable income of a taxpayer from specific sources and activities for purposes of a number of other “operative” Code sections. The operative section for the foreign tax credit limitation is section 904(a).

<sup>56</sup>These classes include royalties, dividends, compensation for services, and gross income derived from business. A taxpayer must allocate his deductions on the basis of the factual relationships that exist between his deductions and his classes of gross income. The Regulations express this factual relationship concept this way: a deduction generally reduces a class of gross income if the deduction is incurred as a result of, or incident to, an activity, or in connection with property, from which the class of gross income has been, is, or could reasonably have been expected to be derived. If a deduction does not bear a definite relationship to a class of gross income, it is ordinarily treated as definitely related and allocable to all of the taxpayer’s gross income; “all of the taxpayer’s gross income” is then considered a class of gross income for purposes of applying the remainder of the Regulations. After a deduction has been allocated to a class of gross income, it is apportioned between a “statutory grouping” of gross income within the class, such as foreign source gross income, and a “residual grouping,” consisting of all other gross income in the class. The statutory grouping depends on the operative Code section. For example, when the operative Code section is 904(a) (relating to the foreign tax credit limitation), the statutory grouping is foreign source gross income.

<sup>57</sup>In addition, the Regulations provide rules relating to deductions in excess of gross income; exempt, excluded, and eliminated income; substantiation of allocations and apportionments; and intercompany pricing adjustments under section 482 or other sections of the Code.

<sup>58</sup>Treasury issued temporary regulation sec. 1.861–8T, regarding the allocation and apportionment of various expenses other than interest, in 1988. These regulations are generally applicable to taxable years beginning after December 31, 1986 (Treas. Reg. secs. 1.861–8T(h) and



They incorporate a number of significant modifications to a 1973 proposed revision<sup>59</sup> of the original Regulations, which were adopted in 1957.<sup>60</sup> These modifications were made in response to taxpayer comments on the proposed 1973 revision.<sup>61</sup>

### ***Allocation and apportionment rules for research deductions***

#### *Overview*

To the extent there are permanent rules in this area, they are contained in the regulation promulgated in 1977. These are the rules that would apply if the statutory rule were not extended. The permanent rule set forth in the regulations is described in this portion of the pamphlet. The *Legislative Background* portion of the pamphlet describes the statutory allocation rule set forth in section 864(f), as well as alternative allocation rules that have been considered or enacted in the process of arriving at section 864(f).

#### *The research Regulation (section 1.861-8(e)(3))*

*In general.*—The research rules of Treasury Regulation sec. 1.861-8(e)(3) (“the research Regulation”) embody to some extent each of three approaches for allocation and apportionment of research expenses. One approach, the place-of-performance method, assumes that these deductions relate straight-forwardly to the place where the research occurs. Another approach, the sales (or gross receipts) method, apportions the burden of research expense among the sources of the taxpayer’s sales receipts. A third approach, the gross income method, apportions research expense among the sources of the taxpayer’s gross income. (The *Analysis* section, following, examines the strengths and weaknesses of these approaches.)

The research Regulation takes as its premise that research “is an inherently speculative activity, that findings may contribute unexpected benefits, and that the gross income derived from successful research and development must bear the cost of unsuccessful research and development.” The research Regulation prescribes rules for allocating and apportioning these expenses between U.S. source and foreign source income.<sup>62</sup>

As explained in more detail below, the Economic Recovery Tax Act of 1981, the Deficit Reduction Act of 1984, and the Consolidated Omnibus Budget Reconciliation Act of 1985 suspended these rules as they relate to U.S.-based research activity through taxable years beginning on or before August 1, 1986; they provided that taxpayers were to allocate all research deductions for research conducted in the United States to U.S. source income during the suspension period.

1.861-14T(a)). Section 1.861-8T(e)(3) of the temporary regulation is expected to cover research expenses (Treas. Reg. sec. 1.861-14T(e)(2)). To date, however, substantive research allocation rules under 1.861-8T(e)(3) have not been issued or proposed. When those rules are issued, they generally are to be applied (except with respect to research expenses allocated under the statutory rules, described below, of DEFRA) as if all members of the affiliated group are a single taxpayer (Treas. Reg. sec. 1.861-14T(e)(2)).

<sup>59</sup> 38 Fed. Reg. 15,840 (1973).

<sup>60</sup> T.D. 6258, 1957-2 C.B. 368.

<sup>61</sup> An earlier proposed revision of the Regulations, published in 1966, 31 Fed. Reg. 10,405 (1966), was withdrawn at the time the 1973 proposed revision was published.

<sup>62</sup> The research Regulation also prescribes rules for the allocation and apportionment of deductions between pairs of gross income groupings other than U.S. source and foreign source income.

For taxable years beginning during the period after August 1, 1986, and on or before August 1, 1987, the Tax Reform Act of 1986 provided for a temporary modification of the research Regulations. As described more fully below, the effect of the modification generally was to attribute more U.S.-based research to U.S. source gross income than would be attributed under the (unmodified) research Regulation. For some periods during taxable years beginning after August 1, 1987, a different temporary modification, which also has had the effect of attributing more U.S.-based research to U.S. source gross income than would be attributed under the (unmodified) research Regulation, has applied as provided in the Technical and Miscellaneous Revenue Act of 1988, the Omnibus Budget Reconciliation Act of 1989, the Omnibus Budget Reconciliation Act of 1990, the Tax Extension Act of 1991, and Revenue Procedure 92-56. Another temporary modification applies for one year under the Omnibus Budget Reconciliation Act of 1993. The substance of those temporary rules is described below.

*Product categories.*—The research Regulation associates research expenses with income from product categories. For example, it contemplates that research performed for a taxpayer's chemical business will not reduce that taxpayer's income from a separate textile mill business. It provides that research expenditures which a taxpayer deducts under section 174 are ordinarily considered definitely related to all income "reasonably connected" with one or more product categories of the taxpayer. The research Regulation enumerates 32 product categories based on two-digit classifications within the Standard Industrial Classification ("SIC") system.

Ordinarily, a taxpayer may divide research expenditures among relevant product categories, but not among subdivisions within the categories. When research is conducted with respect to multiple product categories, the categories may be aggregated for allocation purposes. When research cannot be clearly identified with one or more product categories (e.g., basic research), it is considered conducted with respect to all the taxpayer's product categories.

*Research to meet legal requirements.*—The research Regulation contemplates that taxpayers will sometimes undertake research solely to meet legal requirements (like noise pollution standards). In some such cases, the research cannot reasonably be expected to generate income (beyond de minimis amounts) outside a single geographic source. If so, those deductible research expenses reduce gross income only from the geographic source that includes that jurisdiction.<sup>63</sup> For example, a research deduction for research performed solely to meet noise pollution standards mandated by the U.S. Government and which cannot reasonably be expected to generate significant foreign source income reduces only U.S. source income.

After allocating deductions to meet legal requirements, the taxpayer generally matches income to deductions on the basis of the place of performance of the research and the source of income from sales of products. At the taxpayer's election, the matching can involve the source of gross income.

<sup>63</sup>Treas. Reg. sec. 1.861-8(e)(3)(i)(B)).

*Sales method of apportionment, step 1: Exclusive place-of-performance apportionment.*—The research Regulation presupposes that the place where research is performed (such as a laboratory) bears a significant relation to the source of the income it produces. Generally, the regulation allows 30 percent of deductible research expenses to reduce gross income from the source where over half of the taxpayer's total deductible research expenses are incurred.<sup>64</sup> For example, assume that a U.S. manufacturer of gasoline engines sells them in the United States and abroad and performs all its research in the United States. It first subtracts 30 percent of its research deduction from U.S. source income. (The manufacturer generally allocates the remaining 70 percent on the basis of sales, discussed below.)

The research Regulation states (at sec. 1.861-8(e)(3)(ii)(A)) that such place-of-performance apportionment

reflects the view that research and development is often most valuable in the country where it is performed, for two reasons. First, research and development often benefits a broad product category, consisting of many individual products, all of which may be sold in the nearest market but only some of which may be sold in foreign markets. Second, research and development often is utilized in the nearest market before it is used in other markets, and, in such cases, has a lower value per unit of sales when used in foreign markets.

*Optional increase in place-of-performance apportionment.*—A taxpayer has the opportunity to apportion more than 30 percent of its research deduction exclusively to the source where research is performed if it can establish that a significantly higher percentage is warranted because the research is reasonably expected to have a very limited or long-delayed application outside that geographic source. Taxpayers that use this method must allocate any remaining portion of their research deduction only on the basis of sales.

To establish that research is reasonably expected to have a very limited application outside the United States, a taxpayer generally must show that only some of its products within the relevant product category are sold outside the United States. This involves a comparison of the taxpayer's own domestic and foreign sales plus sales of other users of the taxpayer's research: uncontrolled parties that sell products incorporating intangible property purchased or licensed from the taxpayer, and controlled corporations that can reasonably be expected to benefit from any of the taxpayer's research expense connected with the product category.<sup>65</sup>

To establish that research is reasonably expected to have a long-delayed application outside the United States, a taxpayer generally must compare the commercial introduction of its own products and

<sup>64</sup> Treas. Reg. sec. 1.861-8(e)(3)(ii)(A). This rule applies to expenses remaining after allocation under the legal requirements test.

<sup>65</sup> For purposes of comparing product sales within categories, products in "nonmanufactured" categories are limited to those listed in the Standard Industrial Classification ("SIC") manual; products in "manufactured" categories are limited to those enumerated at a seven-digit level in the U.S. Census Bureau's Numerical List of Manufactured Products.

processes in the United States and foreign markets and commercial introduction by other users of its research.<sup>66</sup>

*Sales method of apportionment, step 2: apportionment on the basis of sales.*—After a taxpayer makes a place-of-performance apportionment, it must apportion the amount of its research deduction remaining, if any, on the basis of sales. Generally, under this method, the remaining research deduction amount is apportioned between domestic and foreign source income on the basis of relative amounts of domestic and foreign sales receipts.<sup>67</sup>

*Example.*—Suppose that a taxpayer has foreign sales of \$280, \$200 in textiles and \$80 in paper products, U.S. sales of \$220, \$200 in textiles and \$20 in paper products, textile-related research expense of \$100, and paper-product-related research expense of \$50. Assume that the taxpayer cannot allocate any portion of its research deduction under the legal-requirements test and that the taxpayer is entitled to no place-of-performance allocation because no more than half of its research deduction is accounted for by research activities in any single country. The textile sales are in, and the textile-related research is connected with, the SIC two-digit product category “textile mill products” (SIC major group number 22). The paper product sales are in, and the paper-product-related research is connected with, the SIC product category “paper and allied products” (SIC major group number 26). The textile-related research expense of \$100 is apportioned \$50 to foreign source income and \$50 to U.S. source income because the taxpayer had \$200 in foreign sales in the textile mill product category and \$200 in U.S. sales in the textile mill products category. The paper-product-related research of \$50 is apportioned \$40 to foreign source income and \$10 to U.S. source income because the taxpayer had \$80 in foreign sales in the paper and allied products category and \$20 in U.S. sales in the paper and allied products category.

*Look-through rules and other refinements to the concept of “sales”.*—Sales, for purposes of the sales method of apportionment, include amounts received from the lease of equipment. In addition, a “look-through” approach treats certain sales of parties other than the taxpayer as sales of the taxpayer in computing the apportionment of the taxpayer’s research deduction between domestic and foreign source income. Under this look-through approach, the taxpayer’s \$200 in foreign textile sales in the above example might actually be sales of a foreign subsidiary licensing technology from the taxpayer or those of an uncontrolled party that has purchased secret processes from the taxpayer. The apportionment in such cases would be the same as in the preceding example.

The look-through rules provide that an uncontrolled party’s sales of products involving intangible property obtained from the taxpayer are fully taken into account in determining the taxpayer’s apportionment (and the apportionment of any other member of a controlled group of corporations to which the taxpayer belongs) if the uncontrolled party can reasonably be expected to benefit from

<sup>66</sup> For these purposes, there is no requirement that the term “product” be limited to those defined in the SIC or Census Bureau classifications. To evaluate the delay in the application of research findings in foreign markets, the taxpayer is to use a safe haven discount rate of 10 percent per year unless he can establish that another discount rate is more appropriate.

<sup>67</sup> Treas. Reg. sec. 1.861-8(e)(3)(ii)(B).

the research expense connected with the product category (or categories). An uncontrolled party can reasonably be expected to benefit from a research expense if the taxpayer can reasonably be expected to license, sell, or transfer intangible property to that uncontrolled party. In the case of licensed products, if the amount of sales of the products is unknown, a reasonable estimate is to be made. Where intangible property is sold outright, and in cases where a reasonable estimate of sales of licensed products cannot be made, the sales of products are considered equal to 10 times the amount received or accrued for the intangible property during the taxpayer's taxable year.

A controlled corporation's sales of products are taken into account, to the extent explained below, if the controlled corporation can reasonably be expected to benefit from the taxpayer's research expense connected with the product category (or categories). A controlled corporation can reasonably be expected to benefit from the taxpayer's research expense if the taxpayer can be expected to license, sell, or transfer intangible property to that corporation, or transfer secret processes to that corporation. Past experience with research and development is to be considered in determining reasonable expectations. However, if the controlled corporation has entered into a bona fide cost-sharing arrangement (in accordance with Treas. Reg. sec. 1.482-2(d)(4)) with the taxpayer for the purpose of developing intangible property, then that corporation is not reasonably expected to benefit from the taxpayer's share of the research expense.

A controlled corporation's sales of products within a product category are taken into account to the extent of the greater of (1) the amount of sales that would have been taken into account if the controlled corporation were an uncontrolled party and if any intangible property contributed by the taxpayer to the controlled corporation were treated as a license of that intangible property; or (2) the amount of sales that bear the same proportion to total sales of the controlled corporation as the taxpayer's voting power in the controlled corporation bears to the total voting power in the corporation. However, sales between or among controlled corporations or the taxpayer are not to be taken into account more than once.

Sales, for purposes of the sales method of apportionment, do not include sales of products sold solely within the United States if the taxpayer has, on account of such sales, made an optional place-of-performance apportionment of significantly greater than 30 percent of his research deduction to U.S. income and established that the research connected with the products sold is reasonably expected to have a very limited application outside the United States (see Treas. Reg. sec. 1.861-8(g), Example 10).

*Optional gross income methods of apportionment.*—Sometimes, using an "optional gross income method," a taxpayer may reduce allocation of research expenses to foreign source income by as much as 50 percent. Subject to certain limitations, a taxpayer may elect to apportion his research deduction under one of two optional gross income methods instead of the sales method. Under the optional methods, a taxpayer generally apportions the remainder of his research deduction (after allocation under the legal requirements-test

but not the place-of-performance test) on the basis of relative amounts of gross income from domestic and foreign sources.<sup>68</sup>

The basic limitation on the use of optional gross income methods is that the respective portions of a taxpayer's research deduction apportioned to U.S. and foreign source income using a gross income method may not be less than 50 percent of the respective portions that would be apportioned to each such income grouping using the sales-apportionment method (with the latter's exclusive place-of-performance allocation, typically 30 percent). If this 50-percent test is satisfied when deductions (other than those allocated under the legal-requirements test) are apportioned ratably on the basis of gross income, then, under "Option One," the taxpayer may use the income-based ratable apportionment to compute source-specific taxable income, without limitation.

If, on the other hand, a ratable apportionment based on gross income fails the 50-percent test, then, under "Option Two," the taxpayer apportions 50 percent of the amount of its research deduction which would have been apportioned under the sales method to that income grouping (i.e., U.S. or foreign source income) to which an income-based ratable apportionment allocates less than the required 50 percent. The remaining amount of its research deduction is apportioned to the other income grouping.

A taxpayer electing an optional gross income method, then, may be able to reduce the amount of its research deduction apportioned to foreign source income to as little as one-half of the amount that would be apportioned to foreign source income under the sales method.

For example, consider a taxpayer with \$110 of U.S.-performed research expense and equal U.S. and foreign sales. Assume that \$10 of the research expense is to meet legal requirements and is allocated to U.S. source income. Under the sales method, 30 percent (\$30) of the remaining \$100 is exclusively apportioned to U.S. source income and the rest (\$70) is divided evenly between U.S. and foreign source income. Under an optional gross income method, the \$35 foreign source research allocation could be reduced as much as 50 percent, to \$17.50. This could occur, for example, if the foreign sales were made by a foreign subsidiary that did not repatriate earnings to the U.S. corporation.

The optional gross income methods apply to all of a taxpayer's gross income, not gross income on a product category basis. If any member of an affiliated group which files a consolidated return uses an optional gross income method in a taxable year, then all members joining that return must use an optional gross income method in that taxable year.

### *The 1973 proposed Regulation*

The research rules of the present Regulation reflect a number of changes in and additions to the research rules included in an earlier proposed version of the Regulation issued in 1973.<sup>69</sup> Many of these modifications were liberalizations made in response to the

<sup>68</sup> Treas. Reg. sec. 1.861-8(e)(3)(iii).

<sup>69</sup> 38 Fed. Reg. 15,840 (1973).

comments of taxpayers on the 1973 proposed Regulation. The changes and additions include:

(1) Addition of the place-of-performance apportionment rules, that generally let a taxpayer apportion 30 percent or more of its research deduction to U.S. source income;

(2) Addition of the legal-requirement test, that lets a taxpayer allocate a portion of its research deduction solely to U.S. source income when the corresponding research expenditures generate minimal income outside the United States and are mandated by a legal requirement (such as a U.S. Food and Drug Administration testing requirement);

(3) The division of a research deduction between product categories rather than general classes of gross income such as royalties from licensing intangible property or dividends; this change reduces allocations to foreign source income of research expenditures related to products that are substantially different from the products that generate the foreign source income; and

(4) The optional gross income methods of apportionment, which expressly permit a taxpayer to apportion some or all of its research deduction on a gross-income-to-gross-income basis, subject to limitations.

### *Legislative Background*

#### *Treasury study and temporary suspension of regulation*

In the Economic Recovery Tax Act of 1981 ("ERTA"), Congress directed the Treasury Department to study the impact of the research rules of Treasury Regulation section 1.861-8 on research activities conducted in the United States and on the availability of the foreign tax credit, and also provided for a temporary suspension of the research Regulation.

#### *Suspension of the research Regulation*

ERTA provided that, for a taxpayer's first two taxable years beginning after the date of its enactment (August 13, 1981), all research and experimental expenditures (within the meaning of sec. 174) which were paid or incurred in those taxable years (and only in those taxable years) for research activities conducted in the United States were to be allocated or apportioned to sources within the United States for all purposes under the Code (sec. 223 of ERTA). ERTA did not change the Regulation's allocation rules for deductions other than that for research and experimental expenditures.

#### *Treasury study*

On June 14, 1983, the Secretary of the Treasury submitted its report on the mandated study to the House Committee on Ways and Means and the Senate Committee on Finance.<sup>70</sup> In summary, the Treasury report concluded that:

- Had the Regulation fully been in effect in 1982, the \$37 billion in privately financed domestic research spend-

<sup>70</sup> Department of the Treasury, *The Impact of the Section 861-8 Regulation on U.S. Research and Development*, (June 1983) (hereinafter, "1983 Treasury Study").

ing in 1982 would have been reduced by between \$40 million and \$260 million—i.e., by between 0.1 and 0.7 percent. Most of the reduction would have represented a net reduction in overall research undertaken by U.S. corporations and their foreign affiliates, rather than a transfer of research abroad.

- The moratorium reduced U.S. tax liabilities. If the research rules in the Regulation had been in effect in 1982, U.S. tax liabilities of U.S. firms would have been \$100 million to \$240 million higher. The moratorium reduced the tax liabilities only of firms with excess foreign tax credits.

- The Regulation's research rules reflect significant modifications of the 1973 proposed Regulation in response to taxpayer comments. Compared to the 1973 version of the Regulation, these modifications allow taxpayers to allocate less research expense to foreign income and recognize that research conducted in the United States may be most valuable in the domestic market.

On the ground that a reduction in research might adversely affect the competitive position of the United States, the report stated that the Treasury supported a two-year extension of the ERTA moratorium Congress granted the recommended two-year extension of the moratorium in the Deficit Reduction Act of 1984 ("DEFRA"). A further one-year extension of the moratorium was enacted in the Consolidated Omnibus Budget Reconciliation Act of 1985 ("1985 Act"). Under the moratorium as enacted and extended through the 1985 Act, taxpayers allocated all expenses of U.S.-based research to U.S. source income in all taxable years beginning after August 13, 1981, and on or before August 1, 1986.

### ***Tax Reform Act of 1986***

Congress enacted temporary modifications to the research Regulation in the Tax Reform Act of 1986 ("1986 Act"), thus further suspending some, but not all, of the full impact of the Regulation.<sup>71</sup> During taxable years beginning in the 12-month period after August 1, 1986, and on or before August 1, 1987, the research Regulation was essentially liberalized in three respects.

The first liberalization was that for the specified one-year period, 50 percent of all remaining amounts allowable as a deduction for qualified research expenditures (that is, research and experimental expenditures within the meaning of section 174 that are attributable to activities conducted in the United States) after allocation of legally required research expenses could be apportioned to U.S. source income and deducted from such income in determining the amount of U.S. source taxable income. The 1986 Act thus had the

<sup>71</sup>The temporary modifications made by the 1986 Act to the research expense allocation rules in regulation section 1.861-8 applied for purposes of computing taxable income from U.S. sources and taxable income from sources outside the United States. The modifications applied only to the allocation of expenditures for research and experimental activities conducted in the United States, and only for the purposes of geographic sourcing of income; the modifications did not apply for other purposes, such as the computation of combined taxable income of a FSC (or DISC) and its related supplier. *Accord, St. Jude Medical, Inc. v. Commissioner*, 97 T.C. 457 (1991). Also, the modifications did not apply to any expenditure for the acquisition or improvement of land, or for the acquisition or improvement of depreciable or depletable property to be used in connection with research.



effect of increasing the automatic place-of-performance apportionment percentage for U.S.-based research expense from 30 percent to 50 percent.

The 1986 Act further provided that, for the specified one-year period, the portion of those amounts allowable as a deduction for qualified research expenditures that remained after any legal requirements allocation and the 50 percent automatic place-of-performance apportionment were apportioned either on the basis of sales or gross income. Thus, the second effective liberalization of the Regulation was to allow the automatic place-of-performance apportionment temporarily to taxpayers who elected to apportion expenses using the optional gross income method, rather than only to taxpayers that used the standard sales method of apportionment.

Third, the 1986 Act had the effect of temporarily suspending the regulatory rule that prohibits taxpayers from using the optional gross income method to reduce allocation of research expense to foreign source income by more than 50 percent of the amount that would be allocated to foreign source income under the sales method.

Provisions of the 1986 Act directly addressing research allocations were not the only 1986 Act provisions substantially affecting the interaction of research expenses and the foreign tax credit. As described above, the foreign tax credit limitation is the product of (1) pre-credit U.S. tax and (2) a fraction equal to foreign source taxable income over worldwide taxable income. The 1986 Act's temporary modification of the research Regulation generally increased the fraction (for a limited period). By itself, this increase would tend to have raised the credit limitations of taxpayers with research expenses and foreign source income and thus reduced the overall tax liability of such taxpayers previously in an excess credit position. On the other hand, by lowering corporate tax rates from 46 to 34 percent, the 1986 Act decreased taxpayers' pre-credit U.S. tax. In addition, other 1986 Act provisions generally increased allocations of interest expense to foreign source income. By themselves, the rate and interest allocation changes tended to reduce all taxpayers' foreign tax credit limitations, thus increasing the number of U.S. taxpayers with excess foreign tax credits, and increasing the likelihood that any change in the research allocation rules would affect a taxpayer's overall tax liabilities.

### ***The 1987 Administration proposal***

At a hearing before a subcommittee of the Senate Finance Committee on April 3, 1987, the Administration testified in favor of a proposal under which taxpayers would be permitted to allocate 67 percent of expenses for research conducted in the United States to U.S. source income.<sup>72</sup> The remainder of such expenses would be apportioned on the basis of either gross sales or gross income, with no limitation on the amount apportioned to U.S. source income using the gross income method.

<sup>72</sup> *Interaction Between U.S. Tax Policy and Domestic Research and Development: Hearing on S. 58 and S. 716 Before the Subcommittee on Taxation and Debt Management of the Senate Committee on Finance, 100th Cong., 1st Sess. 64, 84 (written testimony of J. Roger Mentz, Assistant Secretary (Tax Policy), Department of the Treasury) (1987).*

The Administration's 1987 proposal represented the tentatively agreed outcome of discussions among House and Senate sponsors of moratorium legislation, the Treasury, and affected companies.<sup>73</sup> The proposal was included in H.R. 3545, the Omnibus Budget Reconciliation Act of 1987 ("1987 Act"), as passed by the House. The proposal also was included in the October 1987 budget reconciliation submission of the Senate Finance Committee to the Senate Budget Committee. The proposal was not included in the conference agreement on the 1987 Act. Nor was it enacted in its original form subsequently, although it was part of the President's budget proposals in 1988 and 1989. Instead, beginning with the Technical and Miscellaneous Revenue Act of 1988 ("1988 Act"), Congress passed a series of statutes temporarily enacting, and then extending, a modified version of the 1987 Administration proposal.

**Code section 864(f)**

The substance of the statutory research allocation rules that were in effect from 1987 through 1991, as well as the administrative research allocation rule announced in 1992, did not vary. Under some of the rules, however, the treatment of research expenses incurred in a single taxable year has been bifurcated. That is, expenses incurred during one part of the year (or deemed to have been incurred during that part of the year) have sometimes been allocated under the new statutory allocation rule. Expenses treated as having been incurred during the remainder of such years have been allocated under the research Regulation. As discussed below, the statutory allocation rule enacted in 1993 changed the allocation percentages somewhat from the percentages that had been in effect during the periods since 1987 to which the Regulation did not apply.

The 1988 Act provided for such bifurcated treatment. For expenditures incurred during the part of the year covered by the statutory allocation rule, the treatment of research and development expenditures incurred to meet certain legal requirements was unchanged. After applying the legal requirements rule, however, the 1988 Act modifications provided that 64 percent of the U.S.-based research expenses remaining to be allocated and apportioned were allocated to U.S. source income. The 1988 Act also provided that 64 percent of the remaining *foreign-based* research expenses were allocated to *foreign* source income. Unlike the Regulation, the 1988 Act statutory allocation permits the research expenditures remaining after the automatic place-of-performance allocation to be allocated and apportioned *either* on the basis of sales or gross income. However, unlike the 1986 Act and unlike the 1987 Administration proposal, the 1988 Act allocation rule placed a limit, based on the sales method of apportionment, on the reduction taxpayers could achieve in the amount of research expense allocated to foreign source income using the gross income method. This limit was patterned after the limit in the Regulation, but was less restrictive. Under the 1988 Act, if the gross income method of apportionment was utilized, the amount apportioned to foreign source income could be no less than 30 percent of the amount that would have

<sup>73</sup>*Id.* at 54 (remarks of Senator Baucus).

been apportioned to foreign source income had the sales method been used. Under the Regulation, by contrast, the limitation is 50 percent of the amount that would have been apportioned to foreign source income had the sales method been used.

These statutory allocation rules were effective only for the first four months of a taxpayer's first taxable year beginning after August 1, 1987 (treating all applicable expenditures in that taxable year as if they were incurred ratably over the year). Generally, for the expenditures in the first taxable year beginning after August 1, 1987 (and for subsequent taxable years) that were not covered by the statutory allocation rules, the rules set forth in the Regulation were applicable with respect to sourcing research and experimental expenditures.

Generally, no statutory allocation rule applied to research expenses incurred in the taxpayer's first taxable year beginning after August 1, 1988 and on or before August 1, 1989. For expenses incurred in that year (as generally was the case for two-thirds of the research expenses incurred for the preceding year), the Regulation applied.

The Omnibus Budget Reconciliation Act of 1989 ("1989 Act") revived, again on a temporary basis, the rules for sourcing research expenditures that were contained in the 1988 Act. The 1989 Act also codified these statutory allocation rules in section 864(f) of the Code. As codified in 1989, these rules were effective only for the first nine months of a taxpayer's first taxable year beginning after August 1, 1989, and before August 2, 1990 (treating all applicable expenditures in that taxable year as if they were incurred ratably over the year). Under the 1989 Act, for the remainder of a taxpayer's first taxable year beginning after August 1, 1989, and before August 2, 1990 (and for subsequent taxable years), the rules set forth in the Regulation applied with respect to sourcing research expenditures.

The Omnibus Budget Reconciliation Act of 1990 ("1990 Act") further extended the statutory allocation rules that were codified in the 1989 Act. Under the 1990 Act, the rules of section 864(f) applied to the taxpayer's first two taxable years beginning after August 1, 1989, and on or before August 1, 1991. Thus, for any taxpayer, the taxable year partly covered by section 864(f) under the 1989 Act was made fully covered by section 864(f), as was the following year.

The Tax Extension Act of 1991 ("1991 Act") further extended section 864(f) to cover years beginning after August 1, 1989, and on or before August 1, 1992. In the case of the taxpayer's first taxable year beginning after August 1, 1991, however, the 1991 Act made section 864(f) applicable only to research expenses incurred during the first six months of the year. Thus, in general, the effect of the 1991 Act was to extend the life of section 864(f) by six months. Unlike the 1988 Act and 1989 Act partial-year extensions, however, the 1991 Act did not require proration of a full year's expenses equally to each month within that year. Rather, the 1991 Act allows taxpayers to apply the section 864(f) allocation rules to any research expenses actually incurred during the first six months of that year, and only those expenses, regardless of what portion

those expenses represent of the entire amount of research expense properly taken into account for that taxable year.

On June 24, 1992, it was announced that the Treasury Department and the IRS had undertaken a review of the research expense allocation regulation, and that in light of this review, the IRS temporarily would not require that taxpayers apply the regulation (Rev. Proc. 92-56, 1992-2 C.B. 409, amplified by Rev. Proc. 92-69, 1992-2 C.B. 435). According to these Revenue Procedures, taxpayers would not be required to apply the regulation with respect to research expenses incurred during what would ordinarily be an 18-month transition period—that is, the last six months of the taxpayer's first taxable year beginning after August 1, 1991 and the immediately succeeding taxable year—provided that such expenses were allocated and apportioned in accordance with a method based on the section 864(f) allocation rules.

The Omnibus Budget Reconciliation Act of 1993 ("1993 Act") generally extended section 864(f), with modifications, to cover the taxable year that immediately followed the period to which Revenue Procedure 92-56 applied.<sup>74</sup> Under the 1993 Act, the portion of research expense automatically allocated and apportioned to income sourced in the place of performance of the research is 50 percent, rather than 64 percent. Thus, for research expense other than amounts incurred to meet certain legal requirements, and thus allocable to one geographical source, 50 percent of U.S.-incurred research expense is allocated and apportioned to U.S. source income, and 50 percent of foreign-incurred research expense is allocated and apportioned to foreign source income. The remaining research expense is allocated and apportioned either on the basis of sales or gross income, but subject to the condition that if income-based apportionment is used, the amount apportioned to foreign source income can be no less than 30 percent of the amount that would have been apportioned to foreign source income had the sales method been used. The 1993 Act also authorized the Treasury Department to prescribe regulations with respect to the implementation of certain adjustments regarding section 936 companies, the determination of whether research activities are conducted inside or outside the United States, and adjustments that may be appropriate in the case of cost sharing arrangements and contract research. For most taxpayers, the allocation rules of section 864(f) as amended by the 1993 Act apply to the taxable year that begins after August 1, 1993, and on or before August 1, 1994.

### *Foreign Law*<sup>75</sup>

#### *Foreign countries' source rules for deductions*

It appears that few countries have developed detailed rules governing the allocation of expenses between foreign and domestic in-

<sup>74</sup> Specifically, the 1993 Act applied the modified rules of section 864(f) to the first taxable year (beginning on or before August 1, 1994) that commenced immediately following the taxpayer's last taxable year to which Revenue Procedure 92-56 applies, or would have applied had the taxpayer been in existence and elected the benefits of that Revenue Procedure.

<sup>75</sup> This section is based chiefly on the collection of studies of the source, allocation, apportionment, and related rules of 24 countries published by the International Fiscal Association (IFA): *Rules for determining income and expenses as domestic or foreign*, LXVb Cahiers de droit fiscal international (1980). While the discussion in this pamphlet also incorporates the fruits of subsequent research on selected topics, conducted by the staff of the Law Library, Library of Con-

come (or taxable and nontaxable income). Thus, specific allocation rules for research expense, resembling those of Treasury Regulation sec. 1.861-8, are absent in most countries. The most common approach to allocations appears to be a facts and circumstances test or a reasonableness test. Many countries, however, have recognized the general principle that expenses, to be deductible against income from a particular source, should be related to that income.

Some countries apparently have had specific rules for research expense. Under Finnish law, for example, research expenses generally have in the past been deductible from the category or categories of income to which they relate. In New Zealand, it has been the law that research expenditures must be demonstrated to yield some benefit to the New Zealand economy to be deductible against New Zealand income. In Japan, however, it has been the law that research expenses will not be allocated to offset foreign source income. In addition, Canada apparently has required no allocation of research expense to foreign source income.

### *Deductions in foreign countries for U.S.-performed research*

U.S. income tax treaties generally require our treaty partners to allow appropriate deductions for expenses incurred in the United States. Generally, however, under the treaties, these countries are required to allow deductions only for research expenses directly related to local income. Some research conducted in the United States within a product category that includes products sold in a foreign country may not bear a direct relation to local income. A foreign country's disallowance of deductions for such research when those amounts are allocated to foreign income under the research Regulation may, therefore, comport with its treaty obligations.

Even absent a treaty, a deduction for overseas research has been within the scope of many countries' general rules governing deductions for overseas expenditures. However, foreign countries that recognize the right of taxpayers to deduct overseas expenses may not allow deductions in sufficient amounts to offset the impact of the research Regulation. Additionally, such countries may impose gross withholding taxes on royalty payments to U.S. companies for that research, potentially offsetting any tax benefits derived from favorable deduction rules.

While some foreign countries may prohibit direct deductions for U.S.-performed research, the foreign subsidiary of a U.S. company may be able to take a related deduction in some cases by paying the U.S. parent an increased price for technology and components to reflect research costs. Transfer prices paid by foreign subsidiaries for technology and components often are deductible under foreign tax laws. On the other hand, if deductions from foreign taxable income can be taken for the value of technology developed in the United States and then transferred abroad or incorporated into products sent abroad, such deductions would generally be of less benefit than a deduction for research expenses when incurred; research tends to generate costs well before it generates transferable benefits.

### *Comparison of Allocation Methods*

This section compares six methods of deducting research expenses by a taxpayer with \$10,000 of U.S. sales and \$10,000 of foreign sales (through a foreign branch). The taxpayer has \$1,000 of U.S. source taxable income and \$1,000 of foreign source taxable income before deduction of research expense. The taxpayer incurs \$400 of research expense, all in the United States.

Table 6 shows the calculation of U.S. and foreign income under six methods. The first method, based on the proposed 1973 regulation, allocates research expense solely on the basis of sales (gross receipts). The second method is one of those available in the 1977 Regulation. Under the 1977 Regulation, the taxpayer described above is first permitted to apportion 30 percent (\$120) of research expense to U.S. source income (place-of-performance apportionment). The remaining \$280 (\$400-\$120) of research expense is split equally between U.S. and foreign source income on the basis of gross receipts, which results in \$140 of foreign source and \$260 of U.S. source research expense (sales method apportionment).<sup>76</sup>

---

<sup>76</sup>In these examples, the optional gross income methods do not yield a smaller foreign-source apportionment of research expense than the sales method. Operation in subsidiary form instead could reduce the foreign source gross income to zero if the taxpayer did not repatriate income from the foreign subsidiary. In that case, an optional gross income method could be used to reduce the foreign-source apportionment of research expense by 50 percent under the unmodified Regulation, from \$140 to \$70, or by 100 percent under the temporary 1986 Act modification. Either of these allocations would be more favorable to the taxpayer than the allocations resulting from full repatriation of the foreign subsidiary's earnings.

**Table 6.—Example of Apportionment of Domestic Research Expense Under 1.861-8 Regulation and Statutory Rules**

Item	U.S.-source	Foreign-source	Total
Gross receipts .....	\$10,000.00	\$10,000.00	\$20,000.00
Income before research ...	1,000.00	1,000.00	2,000.00
Research expense apportionment: <sup>1</sup>			
(1) 1973 Proposal ....	200.00	200.00	400.00
(2) 1977 Regulation .	260.00	140.00	400.00
(3) Moratorium .....	400.00	0	400.00
(4) 1986 Act .....	300.00	100.00	400.00
(5) Original sec. 865(f) .....	328.00	72.00	400.00
(6) 1993 sec. 864(f) ..	300.00	100.00	400.00
Income after research: <sup>2</sup>			
(1) 1973 Proposal ....	800.00	800.00	1,600.00
(2) 1977 Regulation .	740.00	860.00	1,600.00
(3) Moratorium .....	600.00	1,000.00	1,600.00
(4) 1986 Act .....	700.00	900.00	1,600.00
(5) Original sec. 865(f) .....	672.00	928.00	1,600.00
(6) 1993 sec. 864(f) ..	700.00	900.00	1,600.00
U.S. tax on worldwide income (pre-credit): <sup>3</sup>			
(1) 1973 Proposal ....	280.00	280.00	560.00
(2) 1977 Regulation .	259.00	301.00	560.00
(3) Moratorium .....	210.00	350.00	560.00
(4) 1986 Act .....	245.00	315.00	560.00
(5) Original sec. 865(f) .....	235.20	324.80	560.00
(6) 1993 sec. 864(f) ..	245.00	315.00	560.00

<sup>1</sup>Apportionment of research expense described in text.

<sup>2</sup>Income after research equals income before research reduced by the research expense apportionment.

<sup>3</sup>U.S. tax on worldwide income (before the foreign tax credit) equals income after research times the present U.S. corporate tax rate (35 percent).

The third method of apportionment, provided under the ERTA/DEFRA/1985 Act moratorium, allocates the full \$400 of research expense to U.S. source income (place-of-performance apportionment). The fourth method, pursuant to the 1986 Act modifications to the 1977 Regulation, first apportions \$200 of research expense to U.S. source income based on place of performance, then splits the remaining \$200 evenly between U.S. and foreign source income, resulting in a \$100 apportionment of research expense to foreign source income. The fifth method, pursuant to Code section 864(f) as first enacted in the 1989 Act, first apportions \$256 of research expense to U.S. source income based on place of performance, then splits the remaining \$144 evenly between U.S. and foreign source income, resulting in a \$72 apportionment of research expense to foreign source income. The sixth method, pursuant to Code section 864(f) as amended in the 1993 Act, first apportions \$200 of research expense to U.S. source income based on place of performance, then splits the remaining \$200 evenly between U.S. and foreign source income, resulting in a \$100 apportionment of research expense to foreign source income.

Table 7 illustrates the case where the taxpayer operates in a low-tax country and does not have excess foreign tax credits. The foreign country imposes tax at a 25-percent rate with no deduction for U.S.-performed research expense. The foreign taxable income is \$1,000 (not reduced by research expense), and the foreign tax is \$250. In this situation, the taxpayer would pay \$310 of U.S. tax (after credit) under all six methods of apportionment. The total tax liability of \$560 (\$250 plus \$310) is identical to the tax which would be owed if the taxpayer moved his foreign operations to the United States. Thus, the U.S. research apportionment rules are a matter of indifference for taxpayers who have no excess credits.



**Table 7.—Tax Liability Under 1.861-8 Regulation and Statutory Rules: U.S. Taxpayer Without Excess Foreign Tax Credits**

[25% foreign tax rate without a deduction for U.S. R&D]

Item	1973 Proposed Regs.	1977 Regs. (1.861-8)	Moratorium	1986 Act	Orig. section 864(f)	1993 section 864(f)
U.S. tax on domestic income .....	\$280.00	\$259.00	\$210.00	\$245.00	\$235.20	\$245.00
U.S. tax on foreign income .....	280.00	301.00	350.00	315.00	324.80	315.00
Foreign tax at 25% rate .....	250.00	250.00	250.00	250.00	250.00	250.00
Foreign tax credit .....	-250.00	-250.00	-250.00	-250.00	-250.00	-250.00
Total tax liability	560.00	560.00	560.00	560.00	560.00	560.00
Average tax rate (percent) .....	35.0	35.0	35.0	35.0	35.0	35.0

Table 8 illustrates the case where the taxpayer operates in a relatively high-tax country and has excess foreign tax credits. The foreign country imposes tax at a 40-percent rate with no deduction for U.S.-performed research expense.<sup>77</sup> The foreign taxable income is \$1,000 (not reduced by research expense), and the foreign tax is \$400. In this situation, the U.S. tax liability depends on the method of apportionment: \$280 under the 1973 proposed regulation, \$259.00 under the 1977 Regulation, \$210.00 under the moratorium, \$245.00 under the 1986 Act, \$235.20 under original section 864(f) and \$245.00 under section 864(f) as amended in 1993; the taxpayer's total tax liability is lowest under the moratorium method of allocation. Under all six methods, the taxpayer's total tax liability exceeds the tax which would be owed if the taxpayer moved his foreign manufacturing operations to the United States. However, if the foreign country permits a deduction for head office research expense, then the total tax liability of the taxpayer could perhaps be reduced.

<sup>77</sup>Prior to the 1986 Act, a foreign country imposing tax at a 40-percent rate would have been a low-tax country for these purposes.

**Table 8.—Tax Liability Under 1.861-8 Regulation and Statutory Rules: U.S. Taxpayer With Excess Foreign Tax Credits**

[40% foreign tax rate without a deduction for U.S. R&D]

Item	1973 Proposed Regs.	1977 Regs. (1.861-8)	Moratorium	1986 Act	Orig. section 864(f)	1993 section 864(f)
U.S. tax on domestic income .....	\$280.00	\$259.00	\$210.00	\$245.00	\$235.20	\$245.00
U.S. tax on foreign income .....	280.00	301.00	350.00	315.00	324.80	315.00
Foreign tax at 40% rate .....	400.00	400.00	400.00	400.00	400.00	400.00
Foreign tax credit .....	-280.00	-301.00	-350.00	-315.00	-324.00	-315.00
Total tax liability	680.00	659.00	610.00	645.00	635.20	645.00
Average tax rate (percent) .....	42.5	41.2	38.1	40.3	39.7	40.3

### *Analysis*

#### *Overview*

This section of the pamphlet discusses issues raised by research allocation rules. These issues include (1) the degree to which any particular rule, taken together with the rules for sourcing items of gross income, results in an accurate measurement of net income from foreign sources; (2) the extent, if any, to which any particular rule causes the U.S. Treasury to give up jurisdiction over U.S. income; (3) the degree to which any particular rule constitutes an incentive to move research activities on- or offshore; and (4) the degree to which any particular rule constitutes an incentive to increase or decrease overall research spending.

#### *Measuring income: matching research expenses with U.S. and foreign income*

##### *In general*

U.S. income tax law generally attempts to match deductions for expenditures with the income that the expenditures help generate. Matching is necessary when net income must be measured from a particular source, from a particular year, or from a particular activity. There are several instances in the tax law where this is important. To accurately measure income in a particular year, capital expenses generally are not deductible in full in the year paid or incurred, but must be deducted ratably over the period of years during which they generate income. To prevent tax arbitrage, a deduction is generally denied for interest paid or incurred with respect to funds borrowed to invest in tax-exempt securities. Similarly, to accurately measure foreign source income and U.S. source income, the Code requires allocation and apportionment of deductions between foreign and domestic gross income.

Determination of the source of income that research deductions should offset, however, raises difficult issues. Part of the difficulty arises because laboratories and other research facilities are cost centers, not profit centers. Much research never results in any income. The scientific method of trial and error often produces no commercially valuable results. Moreover, it is especially difficult to allocate basic research expenses to foreign or U.S. income. Even focused research may yield unanticipated results.

Additional problems arise because of the difficulties in determining the correct timing of deductions for research. Congress has enacted a special rule (sec. 174) generally making research currently deductible even though it will not yield current income. A foreign tax credit system that allocates current research expenses against current income may yield distorted results, because current income often arises more from past research than from current year research. For instance, a taxpayer who has just begun foreign operations may have little measurable foreign activity. If foreign operations expand in the future, however, current research may significantly benefit future foreign operations. If the taxpayer performs no research in those later years of profitable foreign operations, it is likely that any method (over the entire period) will overstate foreign income.

Because of these practical problems, the research Regulation provides taxpayers with a limited opportunity to match research performed in one location to particular items of income. This direct tracing is available only on the basis of "reasonable expectations" of "very limited or long-delayed application" of the research results outside the United States. The taxpayer must satisfy the Commissioner of the propriety of the tracing.

More generally, the research Regulation relies on more mechanical methods of sourcing expenses and embrace elements of each of three competing approaches to research deductions (in addition to their limited tracing approach). The Regulation's exclusive geographic apportionment rules are an application of the place-of-performance approach; the sales method is an application of the gross sales approach; and the optional gross income methods are an application of the gross income-to-gross income approach.

#### *Place-of-performance rules*

Advocates of a place-of-performance approach argue that there is no alternative to it that is not vague or arbitrary. In some cases, a straight place-of-performance rule may produce the theoretically proper measure of U.S. and foreign income. For example, a taxpayer conducts organic chemical research in the United States on methods of eliminating an agricultural pest found only in this country. The taxpayer earns all of its foreign income by manufacturing and selling inorganic chemical compounds in Europe. The taxpayer earns U.S. income by manufacturing and selling both organic and inorganic chemical compounds in the United States. The taxpayer's organic chemical research apparently bears little or no relation to its foreign income. For that reason, the expenses of that research should perhaps not reduce foreign income at all.

Opponents of a straight place-of-performance rule would not agree to its application in this case. There is some chance that the

taxpayer's research will result in products that the taxpayer can manufacture abroad or processes that the taxpayer can use to earn foreign income. The research Regulation would reach the proper result by treating this case as one involving very limited foreign use of the research. Under the research Regulation's optional place-of-performance rule, presumably less than 100 percent of the taxpayer's research deduction would be apportioned to U.S. income.<sup>78</sup> Proponents of a straight place-of-performance rule reply that the optional place-of-performance rule yields complexity and confusion in this case.

#### *Gross sales and gross income methods*

In some cases, the gross-sales method (the rule of Reg. sec. 1.861-8(e)(3)(ii)(B)) or the gross-income-to-gross-income method (the rule of Reg. sec. 1.861-8(e)(3)(iii)) may produce the theoretically proper measure of U.S. and foreign income. Assume that a taxpayer owns U.S. and foreign patents for one drug. The taxpayer's only business is manufacturing that drug. The taxpayer manufactures in two factories, one in the United States and one in Germany (through a German branch). Profit margins and costs of production in these two factories are identical. The taxpayer conducts research in a U.S. laboratory. The focus of that research is improvement of the one drug patent that the taxpayer owns. Both gross foreign sales and income and gross U.S. sales and income appear to bear some relationship to the U.S. research. Comparison of gross sales is administratively feasible, and might be a proper way of allocating research expenses. Comparison of gross income also is administratively feasible, and would yield the same allocation of research expenses in this case.<sup>79</sup>

Both the gross sales rule and the gross income rule involve difficulties. A sales method involves practical difficulties. For example, assume that a U.S. taxpayer who manufactures and sells an automobile windshield defrosting device in the United States and licenses the device for manufacture and sale abroad by foreign automobile makers. The taxpayer's gross U.S. sales are its sales of the windshield defrosting device in the United States. Determination of gross foreign sales is more difficult. One application of the sales method and look-through rules would compare these sales with those of the foreign licensee, which are sales of automobiles. The automobile sales reflect many cost components of the automobiles other than the windshield defrosting device, so this comparison seems inappropriate. To deal with the difficulty of estimat-

<sup>78</sup> The research Regulation's optional place of performance rule has provoked debate. As discussed above, the research Regulation permits a taxpayer that qualifies for a 30-percent apportionment of his research deduction to income from one geographic source to apportion to that income a percentage of his research deduction "significantly greater" than 30 percent. The taxpayer may do so if it establishes that the higher percentage is warranted because the research is reasonably expected to have a very limited or long-delayed application outside the geographic source. The research Regulation does not define the term "significantly greater." One example given in the Regulation (Example (10)) suggests that an apportionment to income from the geographic source that is 34 percent higher than the apportionment yielded by application of the base-line percentage might, at least in some circumstances, be considered significantly greater; another example given in the Regulation (Example (9)) suggests that a 6-percent differential would not be. Taners have argued that the Regulation should give taxpayers more specific guidance on this point.

<sup>79</sup> For simplicity, the example equates profit margins and costs of production in the two factories owned by a single corporation, so that the two methods yield the same allocation. A comparison of two methods when they do not yield the same allocation appears below.

ing third-party licensees' (and purchasers') sales, the research Regulation adopts a deemed sales price for certain licensed (and purchased) intangibles of ten times the amount received for the intangibles. Critics note the arbitrariness of this deemed sales figure.

Arbitrariness of the sales method can be avoided sometimes because taxpayers exercise a degree of control over whether the look-through rules of the sales method are applied and, thus, over whether sales of certain foreign entities will be treated as the taxpayer's own for purposes of apportioning research expense. For example, the research Regulation provides that if a U.S. taxpayer and its controlled corporation enter into a bona fide cost-sharing arrangement for purposes of developing intangible property, then the controlled corporation's sales relating to the intangible property will not be treated as the taxpayer's for purposes of apportioning the taxpayer's research expense.

Critics of the sales method argue that the gross income-to-gross income method avoids the comparison of sales (or deemed sales) in all cases and, in addition is easier to use than the sales method, has been approved by U.S. courts, and had been used widely by U.S. taxpayers for many years. Critics of the sales method also point out that the method seems to produce arbitrary results in some circumstances. For example, suppose that the sales method is used by a U.S. licensor who negotiates a large up-front license fee from a foreign company with the proviso that the fee will reduce future royalties. If the licensee makes few sales in the year in which the up-front fee is paid, most of the foreign source income from the license will not cause research expense to be apportioned to foreign source income.

On the other hand, the gross-income-to-gross-income method may encourage U.S. taxpayers to license technology to foreign manufacturers instead of utilizing the technology themselves to manufacture products for sale abroad. Assume that the before-tax return would be the same from these two alternatives. If the sales method were mandated, foreign sales would be taken into account in apportioning the research expense to foreign source income in either case. If, however, the gross-income-to-gross-income method were used, foreign sales would be taken fully into account only if the taxpayer chose to manufacture and sell directly.<sup>80</sup> If the taxpayer chose to license the relevant technology to others instead, foreign license fees only, likely equaling a small percentage of the licensee's foreign sales, would be taken into account in apportioning research expense to foreign income.

Use of the gross-income-to-gross-income method also may, in contrast with the sales method, result in a smaller apportionment of research expense to foreign source income when foreign operations are conducted through a subsidiary as compared to a branch. The reason is that gross income attributable to a foreign subsidiary generally includes only profits distributed to the U.S. parent and not retained for foreign investment. A U.S. parent generally can control the timing of these dividends and thus can potentially re-

<sup>80</sup>In the case of the direct manufacturing and sales alternative, the gross-income method would account for sales through foreign branches directly; the gross-income method would generally account for sales of foreign subsidiaries indirectly, only upon payment of subsidiary dividends, and then only to the extent of the subsidiary's net (rather than gross) income.

duce gross income from foreign sources to zero in a given year and thereby avoid any allocation of research expense to foreign source income. Moreover, the dividends represent the foreign subsidiary's receipts net of depreciation, interest, and other indirect expenses. To the extent of its own operations, on the other hand, the gross income of a U.S. parent generally includes receipts whether reinvested or not and whether offset by expenses or not. If the U.S. corporation has a foreign branch, the gross income of the latter is a component of the U.S. corporation's gross income. Whether operations are conducted through a foreign subsidiary or a foreign branch bears no relation to the connection between particular research activities and types of income. The gross-income-to-gross-income method's distinction between branch and subsidiary operations, therefore, seems unwarranted.

At least in part for this reason, the unmodified research Regulation limits the application of the gross-income-to-gross-income method to cases when its results do not diverge too greatly from those of the gross-sales method. However, under both the temporary 1986 Act allocation rules and the 1987 proposal, this restraint on the potential distortions of the gross income method, as applied to subsidiary operations, was lifted; under Code section 864(f), it has been retained but in a weakened form.

In addition, the gross-income-to-gross-income method may give U.S. taxpayers a limited incentive to underprice transfers to related parties abroad, including transfers of technology developed through the very research expenditures whose allocation is at issue here. Code section 482 allows the IRS to correct any improper transfer prices, but it has proven difficult to administer in practice. In any case, section 482 would not necessarily give the IRS authority to readjust transfer prices based on research performed in the same year as the transfer, absent an unusually short lead time between research and product improvement.

#### *Breadth of product categories*

Critics of the Regulation's research rules argue that the prescribed product categories are too broad. They point out that research which relates solely to a product sold in the United States may nonetheless be apportioned to foreign source income when a second product, falling in the same product category as the first, happens to be sold abroad. For example, an apportionment to foreign source income of research expense relating to bulldozers manufactured and sold solely in the United States may be required when the taxpayer manufactures and sells small gasoline engines for lawnmowers abroad because the bulldozers and lawnmower engines fall in the same product category.<sup>81</sup>

As another example, a taxpayer performs basic pharmaceutical research in the United States in an effort to create new antibiotics. The taxpayer's U.S. plants produce a variety of antibiotics for the U.S. market, while the taxpayer's foreign plants produce only aspirin for foreign markets. Nonetheless, under the research Regulation, antibiotics and aspirin are in the same product category, and the general rules of the Regulation would allocate some of the re-

<sup>81</sup>See paragraph (g) of Regulation, Example (4).

search expense to foreign source income unless the taxpayer met the burden of showing very limited or long-delayed application of the research abroad. Proponents of the research Regulation argue that this result may in fact be the correct one. For example, although the taxpayer does not use the basic research in producing aspirin, the taxpayer might not use it immediately in producing antibiotics, either.<sup>82</sup> Also, the taxpayer might begin making substantial foreign sales of any new drug its research creates.

Critics of the research rules argue that the use of narrower product categories (for example, three-digit instead of two-digit SIC categories) should be permitted. Alternatively, they argue that allocation should be permitted on a project-by-project basis and product categories should be eliminated. Narrower product categories might, however, eliminate the research rules' capacity to take into account for apportionment purposes that research sometimes contributes unexpected benefits. For instance, in the bulldozer/lawnmower example above, it is assumed that the research relating to the bulldozers yields no results applicable to the lawnmower engines. But in some circumstances, a taxpayer's bulldozer-related research might unexpectedly benefit its lawnmower engine line.

Also, the structure of the product categories Wholesale trade and Retail trade sometimes allows a taxpayer to apportion all of its research expense relating to a product that sells both in the United States and abroad to U.S. source income. For example, suppose a U.S. corporation manufactures and sells forklift trucks in the United States and distributes them abroad through a wholesaling subsidiary. The U.S. corporation performs research relating to the forklifts but none relating to wholesale trade. The manufacture and sale of forklifts in the United States belongs to the product category Transportation equipment, but the wholesaling of the forklifts abroad will generally belong to the product category, Wholesale trade. None of the U.S. corporation's research expense attributable to the forklifts is allocable to the wholesaling subsidiary's sales abroad because those sales are in a different product category (Wholesale trade) from the product category to which the sale and manufacture of forklifts belong and to which the research relates (Transportation equipment).<sup>83</sup>

#### *Treatment of basic research*

The treatment of basic research expense under the research rules also has been questioned. The Regulation states that research that cannot be clearly identified with one or more product categories is to be divided among all product categories. One of the examples given in the Regulation (Example (15), at paragraph (g) of the Regulation) indicates that the IRS might regard some basic research as not clearly identifiable with any product categories and, thus, properly attributable to all product categories. In the example, basic research expense incurred by a U.S. manufacturer of heating equipment is considered related to all the manufacturer's product

<sup>82</sup> If the expenditures in this case were for testing existing products rather than for developing new products, they are related to income from those products. Such expenses are not subject to the allocation rules of the research Regulation. See Treas. Reg. sec. 1.174-2(a)(1). Therefore, such expenses would typically be deductible from U.S. source income.

<sup>83</sup> See paragraph (g) of the Regulation, Example (6).

categories and, as a result, is allocated in part to income from the manufacturer's foreign hotel subsidiary.

Critics of the Regulation's research rules argue that this allocation is unfair. In their view, basic research expense generally should not be divided among all product categories. They argue that while basic research, by its nature, is less narrowly focused than applied or developmental research, basic research is frequently undertaken specifically in relation to one product or a group of products to the exclusion of others. Therefore, basic research expense should generally be attributable to one or a few of a taxpayer's product categories rather than all the taxpayer's product categories.

Advocates of the research Regulation respond that it may be possible to allocate basic research expense in this manner under the Regulation as presently drafted. To do so, a taxpayer must show that his basic research is clearly identified with certain product categories. The fact that the basic research may relate to several of the taxpayer's product categories should not normally prevent the taxpayer from attributing the expense to fewer than all of his product categories, inasmuch as the research Regulation permits the aggregation of product categories for allocation purposes.

*Double deduction: Domestic deduction for research and foreign deduction for royalty arising from the same research*

It can be argued that under any automatic place-of-performance allocation, corporations with excess foreign tax credits may obtain the equivalent of double deductions for at least a portion of U.S.-performed research expense. This benefit potentially is available when a U.S. parent company deducts 100 percent of domestic research expense against U.S. source income, and its foreign subsidiary deducts (for foreign tax purposes) a royalty payment for exploitation of this research. Allocation of research solely to the United States permits all domestic research expenses to be deducted from U.S. source income even where a portion of this expense is related to the production of foreign source income that is effectively exempt from U.S. tax. The tax benefit could be eliminated by allowing only the portion of expenses incurred for the production of U.S. income to reduce U.S. source gross income. Alternatively, this double deduction problem can be remedied by treating all or part of royalty payments from foreign affiliates as U.S. source income in situations where the parent deducts research exclusively from U.S. source income. On the other hand, current royalties generally are more likely to arise from past, rather than current, research activity. As discussed above, current research expense may be a poor proxy for past expense in the determination of net foreign-source income.

*Complexity*

Critics of the Regulation argue that the research Regulation is overly complex and lengthy. They state that assembling the data necessary to perform the allocation calculations is very time consuming and difficult. They question whether the additional revenue that might be collected under the Regulation is worth the expenditure of taxpayers' and the Federal Government's time and money in attempting to comply with and administer the Regulation. On



the other hand, much of the research Regulation's complexity arises from various options (such as the optional increase in exclusive place-of-performance allocation) that benefit the taxpayers that choose them. In addition, the research Regulation applies to relatively few taxpayers and those taxpayers generally are sophisticated in tax law and accounting. Nevertheless, while relatively few in number, the affected taxpayers generally undertake substantial magnitudes of research expense, often in many different countries.

***The foreign tax credit limitation and preservation of the U.S. tax base***

As explained above, the basic reason for the foreign tax credit limitation is to protect the U.S. Treasury's tax base. Without a credit limitation, a foreign government could levy a tax on U.S.-source income by raising foreign taxes—either by denying deductions or raising the statutory rate—to an effective rate above 35 percent. In this case, it would be the U.S. Treasury, not the taxpayer, who would bear the burden of this high foreign tax.

As a consequence of limiting the foreign tax credit, a firm that operates in a high-tax foreign country may pay more total tax than a similar firm operating exclusively in the United States. The added tax burden is the tax paid to foreign governments in excess of the rate of U.S. tax times the U.S. definition of foreign source income. This additional burden can be large when (1) the foreign tax rate is much higher than 35 percent, and/or (2) the foreign definition of the tax base is much broader than the U.S. definition of foreign source income.

Opponents of the regulatory research allocation rules argue that those rules are unfair because in certain situations, a foreign country may deny local firms or local branches of U.S. firms the effect of full current expensing for research expenses incurred in the United States by U.S. firms. Therefore, they argue that the foreign tax credit limitation should be increased by permanently revising or repealing the regulatory apportionment rules.

Proponents of the regulatory allocation rules argue, however, that those rules measure the net income from foreign sources more accurately than the various statutory allocation rules. Increasing the foreign tax credit limitation unilaterally by resort to the latter, they argue, would effectively allow foreign governments to levy a tax on U.S. source income, displacing the U.S. Government's right to do so.

***Export of research activity***

The principal reason for enacting and renewing the moratorium on apportionment of research expense under the 1977 Regulation was Congressional concern that the regulation encouraged multinational businesses to shift research activities abroad. However, according to the 1983 Treasury Study, the impact of the research Regulation (at least under the pre-1986 Act tax rates) was unclear. The Treasury study also reviewed several economic analyses of the overseas research activity of multinational companies. This survey indicated that U.S. multinationals locate research offshore primarily to transfer developed technology or to adapt technology to indigenous factors of foreign markets, rather than to develop new

technologies or new products for a worldwide market. The literature survey also indicated that there are important efficiency advantages of centralized research which may make the establishment of offshore research units unattractive to multinational companies. The Treasury study concluded that, "[based on these considerations, it appears that foreign R&D is not highly substitutable for R&D performed in the United States."<sup>84</sup>

Although a technological leader in many fields, the United States does not monopolize scientific thought or talent. As new technology is developed overseas by non-U.S. persons, it may be more important today, than at the time of the Treasury study, for U.S. multinationals to locate research facilities abroad to develop new technologies. Moreover, many multinational enterprises already undertake research in foreign locations. While the research Regulation may not affect the decision to establish a research facility abroad, it may affect decisions regarding where to spend current and future research dollars.

Survey evidence also has suggested that factors other than taxes are more important in the research location decision was confirmed in a study by Arthur Andersen and Company. A survey of 85 major multinational firms found: "The results indicate that the most common incentive for determining timing, placement, and scope of R&D projects is the competency of the available workforce. The geographical location of necessary raw materials and research data was the second most frequent response."<sup>85</sup> While the study found that taxes have some influence on the location of research investment, this factor was not of primary importance to the firms included in the survey. A more recent empirical study finds that U.S. multinational enterprises adjust the research expenditures sharply in response to tax changes, but the effect is disparate depending upon the enterprise's foreign tax credit position.<sup>86</sup> The study finds that the lower tax rates and other changes of the 1986 Act encourage firms with excess foreign tax credits to perform research in the United States. The study attributes this, in part, to the foreign-source royalty rules. Enterprises not in an excess foreign tax credit position may find shifting some research activity abroad relatively favorable. The study finds that in aggregate very little research expenditure moved out of the United States to foreign centers.

Even if the Regulation could provide an incentive to relocate research facilities to overseas locations, shifting *research activity offshore* is not the only tax planning strategy available for reducing excess credits. An alternative is to shift *manufacturing activity to the United States* or from a high-tax foreign country to a low-tax country.<sup>87</sup> Another strategy which may be feasible in some cases is for the foreign user of the results of research to make royalty or cost-sharing payments to the United States. In addition, the taxpayer would have to weigh the benefits to be gained through using

<sup>84</sup> 1983 Treasury Study, p. 28.

<sup>85</sup> Arthur Andersen and Co., *National Research and Development Study*, January 1983, p. V-3.

<sup>86</sup> James R. Hines, Jr., "No Place Like Home: Tax Incentives and the Location of R&D by American Multinationals," in James M. Poterba (ed.), *Tax Policy and The Economy*, 8, (Cambridge: The MIT Press), 1994, pp. 65-104.

<sup>87</sup> Conversely, more generous statutory allocation rules that increase the foreign tax credit limitation would decrease the overall tax burden on manufacturing activity in high-tax foreign countries.

extra foreign tax credits against the costs that may be incurred in foregoing the relatively favorable provisions of the Code relating to research in general.

***Allocation of research to U.S. source income as an incentive to increase overall research***

Some argue that some firms may reduce research expenditures as a result of the Regulation's research rules. The statutory rules, it is asserted, have been a research incentive. The 1983 Treasury Study examined this issue and found that as a result of suspending the Regulation's research rules, privately financed U.S. research was increased in 1982 between 0.27 and 0.65 percent or between \$40 million and \$260 million. The revenue cost of the moratorium in 1982 was estimated to be in the range of \$100 million to \$240 million. Thus, the increase in domestic research per dollar of revenue loss is estimated to range from \$0.17 (40/240) to \$2.60 (260/100).<sup>88</sup>

It is interesting to note that in all of the Treasury estimates of the effect of allocation rules on the level of domestic research activity, more than one-half and, in some cases, nearly 90 percent of the increase in *domestic* research corresponds to an increase in overall research, as opposed to a shifting of research across national borders. If one could correctly conclude that the behavioral effect of making the allocation rules more generous lies primarily in its stimulus to overall research spending, then the economic benefits of the various statutory allocation rules should be evaluated by comparing them to other research incentives, such as direct (non-tax) subsidies, expensing of research expenditures, and the R&E tax credit. Some recent research suggests that, in contrast to earlier findings, research spending is quite responsive to the tax cost of undertaking the research expenditure.<sup>89</sup> The tax rate reduction of 1986 Act would be expected to reduce modestly the research expenditures of all affected firms.

Some critics of proposed statutory allocations have suggested that if such proposals generally only benefit taxpayers in an excess foreign tax credit position, that there may be more effective methods to increase domestic research at a lower revenue cost, than the repeal of the research rules of the Regulation. For instance, the present credit for certain research expenses may encourage the pursuit of basic research by universities and other exempt organizations. Such research by exempt organizations does not benefit so clearly from an incentive relating to the allocation of research expenses.

While many firms will not be in an excess credit position, the rate reduction and interest allocation rule amendments in the 1986 Act potentially modify the conclusions reached in the 1983 Treasury Study. All other things being equal, the percentage of worldwide income of U.S. corporations earned by firms in an excess for-

<sup>88</sup> Estimates of a similar order of magnitude, but over a smaller range, were obtained in a more recent study. James R. Hines estimates changes in domestic research per dollar of revenue loss between \$0.43 and \$1.88. See James R. Hines, Jr., "On the Sensitivity of Research to Delicate Tax Changes: The Behavior of US Multinationals in the 1980s," in Alberto Giovannini, R. Glenn Hubbard, and Joel Slemrod (eds.), *Studies in International Taxation*, (Chicago: University of Chicago Press), 1993.

<sup>89</sup> See, Hines, "No Place Like Home," for a brief review of three recent empirical studies.

eign tax credit position may have risen as a by-product of those 1986 Act provisions with the result that any change in the research allocation rules might be expected to have a more uniform effect than was true in 1983. On the other hand, factors other than those 1986 Act provisions could have an opposite effect (for example, post-1986 reductions in *foreign* income tax rates), and other factors, such as deferral,<sup>90</sup> may dampen the effects of any changes in the relative levels of foreign and domestic tax rates on the proportion of income of U.S. corporations subject to excess foreign tax credits.



---

<sup>90</sup> "Deferral" is used here to refer to U.S. tax rules that generally do not impose current U.S. tax on foreign operations carried on through foreign subsidiaries of U.S. taxpayers.