United States General Accounting Office

GAO

Briefing Report to the Honorable
Brian Donnelly, House of Representatives

June 1988

TAX POLICY

Preliminary Analysis of the Research and Experimentation Tax Credit

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GAO

United States
General Accounting Office
Washington, D.C. 20548

General Government Division

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June 17, 1988

The Honorable Brian Donnelly
House of Representatives

Dear Mr. Donnelly:

In December 1987 you and the Joint Committee on Taxation asked that we review the research and experimentation tax credit, section 41 of the Internal Revenue Code, scheduled to expire on December 31, 1988. Specifically, you asked us to (1) assess the effectiveness of the research and experimentation tax credit in stimulating investment and (2) determine how the Internal Revenue Service (IRS) assures itself that taxpayers who use the credit comply with the Internal Revenue Code. In May and June 1988 we briefed your office on the status of our review, and we were asked to provide preliminary information before Congress begins debating the merits of this provision. As requested, this report provides information on who used the credit the most and how the credit's constraints affected use.

RESEARCH AND EXPERIMENTATION TAX CREDIT

Beginning July 1, 1981, individual and corporate taxpayers could claim a tax credit for certain incremental investments in research and experimentation activities. Until January 1, 1986, this credit equaled 25 percent, and since then 20 percent, of the taxpayer's qualified research and experimentation expenditures that exceeded a base period amount. The base period amount is equal to the average qualified expenditures for the 3 previous years or 50 percent of current year expenditures, whichever is greater. Thus, if research and experimentation expenditures exceed average base period expenditures by more than 100 percent, the credit was actually limited to 12.5 percent of each additional dollar spent before January 1, 1986, and 10 percent since then.

The amount of credit that can be used is also limited by the taxpayer's income tax liability. That is, a taxpayer who does not have a tax liability in the current year can carry the credit back to apply to the prior 3 years' tax liabilities. Any credit that remains after current and past tax liabilities are eliminated cannot be used until the taxpayer generates additional liabilities in later years. Unused credits can be carried forward 15 years.

Not all research expenditures qualify for the credit. For example, expenditures for (1) certain product development activities; (2) foreign-based research; (3) social sciences or humanities research; or (4) the routine, periodic, or cosmetic alteration of existing products do not qualify. Some of the expenditures that qualify for the credit also qualify for current deduction under section 174 of the tax code; they do not have to be amortized as do most business expenses devoted to the development or creation of long-lived assets.

RESULTS IN BRIEF

In tax years 1981 through 1984, large corporations--those with assets greater than or equal to $250 million--used 77.6 percent of the total credit claimed. (See table I.1.) Our analysis of income tax return data for a sample of 927 of these corporations showed the following:

-- Corporations in the manufacturing industry (see table I.2), especially those manufacturing office machinery, chemicals (other than drugs), electrical equipment, and motor vehicles, have made the most use of the credit. (See table. I.3.)

-- As an alternative, a flat rate credit of 3 percent of the qualified research expenditures in 1981 and 5 percent in 1982 would have resulted in the same amount of credit being earned for the corporations in the sample. (See table I.4.)

-- The 50 percent of current year expenditures limit had the effect of reducing the amount of credit claimed by 5 percent in 1981. By 1984 the limit's effect had steadily declined to less than 0.5 percent. (See table I.4.)

-- The amount of credit used compared to the amount available has declined from 91 percent in 1981 to 78 percent in 1984. Thus, relatively more of the credit has been carried forward. (See table I.5.)

-- The percent of corporations affected by the 50-percent limit has steadily decreased from 11.4 percent in 1981 to 4.5 percent in 1984. (See table I.6.)

-- The percent of corporations in our sample whose spending was below the base period constraint, and thus could not earn a credit, rose over the 4-year period from 21.8 percent to 43.6 percent. (See table I.6.)

-- The corporations whose spending was below the base period constraint accounted for 4 percent of total spending by sample corporations in 1981. Such corporations accounted for 7.9 percent of 1982 spending. (See table I.7.)

-- Seventy-eight percent of the credit was earned by the 29 percent of the corporations whose qualified research expenditures have grown steadily (but never exceeded twice their base) over the 4-year period. (See table I.8.)

OBJECTIVE, SCOPE, AND METHODOLOGY

The objective of this report is to provide our preliminary analysis of income tax return data for a sample of 927 corporate taxpayers, who accounted for about 70 percent of the credit earned annually during the 1981 to 1984 time period.

The IRS Statistics of Income Division collects annual samples of corporate income tax returns in which it attempts to include all corporations with assets exceeding $50 million. We obtained selected data from the 1981 through 1984 samples for all large corporations--927 in total--that (1) were included in all 4 samples, (2) had assets of more than $250 million in at least 1 sample year, and (3) reported earning research and experimentation tax credit or reported making qualified research and experimentation expenditures at least 1 of the 4 years.

We analyzed the corporate income tax return data to determine (1) who used the credit; (2) how much of the credit was earned, used, carried back, and carried forward; (3) how the benefits were distributed relative to the base period constraints; and (4) how much of the credit was earned and used relative to growth in research expenditures.

ADDITIONAL ANALYSIS TO BE DONE

To address the two objectives of our review, we plan to (1) extend our analysis of the credit to assess its effectiveness in stimulating investment and (2) analyze data on IRS audits of certain corporate taxpayers' use of the credit.

To a large extent our analysis of the credit's effectiveness will be based upon merging and analyzing tax data from three IRS computer files. The data presented in this report is based on one computer file from IRS' Statistics of Income. We have recently obtained and are in the process of merging tax data from two other IRS files--the Business Master File and the Returns Transaction File. These two files should enable us to check our estimates of credit carrybacks and to extend our analysis of the credit used after 1984.

Extending our time horizon is essential to estimating the effective rate of credit, which shows the marginal incentive provided by the credit. We will combine the estimated marginal incentive with estimates from the economic literature on companies' responsiveness to cost incentives to determine the increased research spending attributable to the credit.

Our review of IRS' administration of the credit will be based primarily upon questionnaire results from revenue agents and follow-up visits to several IRS field offices. We anticipate that this work will show (1) if the credit claimed was audited, (2) what adjustments to the credit were proposed by IRS and the basis for these adjustments, (3) if the taxpayer agreed with these proposed adjustments, and (4) the relative ease or difficulty of auditing particular aspects of the credit.

On June 3, 1988, we mailed questionnaires to a sample of IRS revenue agents who routinely coordinate multiyear audits of large corporations. The questionnaire focuses only on large corporations because IRS Statistics of Income data indicates these taxpayers claim most of the credit.

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As arranged with your office, we are sending copies of this briefing report to the Commissioner of IRS and other interested parties and will make copies available to others upon request.

If you have any questions, please call Mr. Charles Vehorn on 272-7904.

Sincerely yours,

Jennie S. Stathis

Jennie S. Stathis
Associate Director

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 APPENDIX

TABLES ON THE RESEARCH AND EXPERIMENTATION TAX CREDIT

Table I.1:

Who Uses the Research and Experimentation Tax Credit

Year	Individuals	Corporations with assets less than $250 million	Corporations with assets equal to or greater than $250 million	Total
	(in millions)			
1981	$ 2.7	$127.6	$ 511.7	$ 642.0
1982	15.1	202.2	637.0	854.3
1983	17.8	248.3	1,029.1	1,295.2
1984	23.2	349.0	1,240.1	1,612.3
Total	$58.8	$927.1	$3,417.9	$4,403.8
	—(percentages of total credit used each year)—			
1981	0.4	19.9	79.7	100.0
1982	1.8	23.7	74.6	100.1[a]
1983	1.4	19.2	79.5	100.1[a]
1984	1.4	21.6	76.9	99.9[a]
Total	1.3	21.1	77.6	100.0

[a]Total does not add to 100 due to rounding.

Source: IRS Statistics of Income Division's annual samples of individual and corporate income tax returns.

Table I.2:

Distribution of Estimated Expenditures, Credit Earned, and Credit Used by Industry

Industry	Estimated qualified research expenditures[a] 1981-1982	Credit actually earned 1981-1984	Credit used 1981-1984[b]
		(percent)	
Manufacturing[c]	86.9	83.3	82.0
Communications	6.2	8.9	9.4
Finance, insurance, and real estate	2.2	2.4	3.1
Electric, gas, and sanitary services	1.7	1.7	1.7
Oil and gas extraction and mining	1.2	1.2	1.3
Wholesale and retail trade	0.9	1.2	1.2
Services	0.4	0.8	0.8
Transportation	0.4	0.3	0.3
Construction	0.1	0.1	0.2
Agriculture, forestry, and fishing	0.1	0.1	0.1
Total	100.0	100.0	100.1[d]

[a]Companies are required to report qualified research expenditures only for the years in which they claim the credit. For the companies in our sample that made research expenditures but claimed no credit in 1981 or 1982 (because those expenditures were below the base period amounts), we have estimated expenditures by working backward from their reported base period expenditures in later years. We are unable to provide reliable estimates for 1983 and 1984 expenditures because we did not have 1985 and more recent data.

[b]Percentage of credit used as of the end of the 1984 tax year.

[c]The manufacturing industry's components are shown in table I.3.

[d]Total does not add to 100 due to rounding.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

Table I.3:

Distribution of Estimated Expenditures, Credit Earned, and Credit Used by the Manufacturing Industry

Manufacturing industry	Estimated qualified research expenditures[a] 1981-1982	Credit actually earned 1981-1984	Credit used 1981-1984[b]
	(percent)		
Office machinery	15.6	18.1	17.7
Chemicals (other than drugs)	15.7	13.3	13.7
Electrical equipment	12.4	14.6	12.7
Motor vehicles	11.7	8.5	9.0
Instruments	5.6	6.6	6.9
Aerospace and shipbuilding	5.4	5.7	5.0
Drugs	5.0	5.8	5.3
Other manufacturing	15.5	10.8	11.4
Total[c]	86.9	83.4[c]	81.7[c]

[a]Companies are required to report qualified research expenditures only for the years in which they claim the credit. For the companies in our sample that made research expenditures but claimed no credit in 1981 or 1982 (because those expenditures were below the base period amounts), we have estimated expenditures by working backward from their reported base period expenditures in later years. We are unable to provide reliable estimates for 1983 and 1984 expenditures because we did not have 1985 and more recent data.

[b]Percentage of credit used as of the end of the 1984 tax year.

[c]The total percent for the manufacturing industry components corresponds to the aggregate percent for the entire manufacturing industry shown in table I.2, except that the credit actually earned and credit used columns do not equal the percent in table I.2 due to rounding.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

Table I.4:

Research and Experimentation Tax Credit
Earned With and Without Limitations
1981 Through 1984

Year	Estimated qualified research expenditures[a]	Credit without 50% base limitation[b]	Credit loss due to 50% base limitation	Credit actually earned	Ratio of credit earned to research expenditures[c]	Ratio of credit without limitation to credit actually earned[d]
	(in millions)					
1981	$19,109.9	$ 651.8	$32.4	$ 619.4	.03	1.05
1982	21,620.5	1,066.8	15.0	1,051.7	.05	1.01
1983	NA	1,231.8	12.0	1,219.9	NA	1.01
1984	NA	1,336.7	5.8	1,330.9	NA	1.00

[a]Companies are required to report qualified research expenditures only for the years in which they claim the credit. For the companies in our sample that made research expenditures but claimed no credit in 1981 or 1982 (because those expenditures were below the base period amounts), we have estimated expenditures by working backward from their reported base period expenditures in later years. We are unable to provide reliable estimates for 1983 and 1984 expenditures because we did not have 1985 and more recent data.

[b]This equals 25 percent of the excess of current expenditures over average expenditures during the base period.

[c]The ratio of the fourth column to the first column. These numbers do not imply that the substitution of a simple flat rate of 5 percent in 1982 would have been revenue neutral because the behavior of other firms not claiming the credit would likely have changed if the credit became easier to claim.

[d]The ratio of the second column to the fourth column.

NA = Data was not available.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

Table I.5:

Research and Experimentation Tax Credit Used Currently, Carried Back, and Carried Forward, 1981 Through 1984

Year	Available credit[a]	Credit used against current-year tax liability	Credit carried back[b]	Credit carried forward	Ratio of credit used currently to available credit[c]
	(in millions)				
1981	$ 625.8	$ 459.7	$110.4	$ 55.6	.91
1982	1,126.8	572.9	350.9	203.0	.82
1983	1,526.4	938.7	225.5	362.1	.76
1984	1,697.5	1,144.3	180.6	372.7[d]	.78

[a]This equals the sum of (1) the credit earned on a company's own current expenditures; (2) the company's unused credit brought forward from prior years; and (3) any credit the company may receive from a partnership, estate, or trust.

[b]Computed as available credit less the amount used against current tax liability, less the amount carried forward. This equation may not hold exactly in each row of the table due to rounding.

[c]The ratio of the sum of the second and third columns to the first column.

[d]The amount carried forward from 1984 is estimated on the basis of the amount of credit available, the amount used in 1984, and the availability of prior year tax liabilities against which companies would use the credit.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

Table I.6:

Distribution Relative to the Base Period Constraints by Number of Corporations[a]

	Year			
	1981	1982	1983	1984
	(percent)			
Qualified research expenditures are less than the base period amount (no credit is earned)	21.8	29.1	38.3	43.6
Qualified research expenditures are more than double the base-period amount ($.125 of credit is earned for every additional $1.00 of expenditure)	11.4	9.1	6.5	4.5
Qualified research expenditures are greater than the base, but less than double the base period amount ($.25 of credit is earned for every additional $1.00 of expenditure)	66.8	61.8	55.2	51.9
Total	100.0	100.0	100.0	100.0

[a]Used in conjunction with table I.7, this table shows that in 1981 the 21.8 percent of the corporations that earned no credit accounted for 4.0 percent of the qualified research expenditures.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

Table I.7:

Distribution Relative to the Base Period Constraints by Estimated Research Expenditures[a]

	Year 1981	Year 1982
	(Percent)	(Percent)
Qualified research expenditures are less than the base period amount (no credit is earned)	4.0	7.9
Qualified research expenditures are more than double the base-period amount ($.125 of credit is earned for every additional $1.00 of expenditure)	5.0	2.7
Qualified research expenditures are greater than the base but less than double the base period amount ($.25 of credit is earned for every additional $1.00 of expenditure)	91.0	89.4
Total	100.0	100.0

[a]The cells of this table show the percentages of total sample expenditures spent by corporations falling into each cell. Used in conjunction with table I.6, this table shows that in 1981 the 21.8 percent of the corporations that earned no credit accounted for 4.0 percent of the qualified research expenditures.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

Table I.8:

Distribution of Research and Experimentation Tax Credit Earned and Used Relative to Growth Pattern of Expenditures, 1981-1984

	Credit earned	Credit used	Number of firms
	(percent)		
Annual growth over base never exceeds 100 percent			
Growth every year	78.4	78.0	29.2
No growth at start but growth every year thereafter[a]	2.3	2.0	7.8
No growth in at least 1 year after a growth year	8.5	9.0	38.3
Annual growth over base exceeds 100 percent in at least 1 year			
Growth every year	7.4	7.6	7.3
No growth at start but growth every year thereafter	0.2	0.2	2.8
No growth in at least 1 year after a growth year	3.2	3.2	13.7
Total	100.0	100.0	99.1[b]

[a]This category contains companies that did not begin to earn a credit until 1982, 1983, or even 1984; once they did earn the credits, however, their expenditures never fell below their base period amounts for the remainder of the sample period.

[b]This does not add to 100 percent because the expenditures of 0.9 percent of the sample firms never exceeded base.

Source: GAO analysis of a subset of 927 corporations from the IRS Statistics of Income Division's annual sample of corporate income tax returns.

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