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Mary Zimmer is a senior associate in the Washington National Tax office of Grant Thornton Advisors LLC, Andrea Shapiro and Ami Norton are senior managers in the firm's corporate tax solutions group, and Kevin Benton is a managing director in the firm's Washington National Tax office.

In this article, the authors evaluate the nexus concept for the research credit and how taxpayers can use this approach to proactively analyze and document technical positions that the IRS may challenge.

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Taxpayers are required to keep books and records to sufficiently establish the amount of research credit claimed on an income tax return, and they must make that information available for inspection by the IRS to substantiate the claim.[1] However, the specific documents that must be maintained remains an area of contention between taxpayers and the IRS because further guidance is needed.[2] Through the administration of the research credit, the IRS has created the requirement that taxpayers demonstrate the nexus[3] between qualified research activities (QRAs) and business components as well as between qualified research expenditures (QREs) and business components. This article examines the IRS's use of the nexus concept, the critical role documentation plays in substantiating a taxpayer's nexus, and how the courts have applied this concept in *Moore*[4] and other case law. This article also provides taxpayers with considerations for using the nexus approach in a balanced manner to support the underlying tax technical positions that the IRS may challenge during an examination.

I. Background

It is well known within the U.S. federal income tax community that the credit for increasing research activities under section 41 is one of the most complicated provisions of the Internal Revenue Code[5] and one of the most prevalent tax issues within the IRS, using significant examination and taxpayer resources.[6] It is estimated that every dollar spent by the IRS on aggregate enforcement creates a $2.64 reduction of research credits through the examination process.[7] However, what may be surprising is that one of the potential problems that the IRS focuses on is not specifically mentioned in the code or

[1] Reg. section 1.6001-1(a) and (e).

[2] *See* Treasury, 2024-2025 Priority Guidance Plan, at 9 (Oct. 3, 2024) ("Regulations under section 41 addressing research credit substantiation"). In response to Notice 2025-19, 2025-17 IRB 1418, taxpayers and organizations have also recommended that this item be included. *See, e.g.*, recommendations by the U.S. Chamber of Commerce (May 30, 2025).

[3] For purposes of the research credit, the code or regulations do not define the term "nexus"; however, *Black's Law Dictionary* (2d ed.) defines nexus as a point of causal intersection, link, relation, or connection.

[4] *Moore v. Commissioner*, T.C. Memo. 2023-20, *aff'd*, 101 F.4th 509 (7th Cir. 2024).

[5] *Suder v. Commissioner*, T.C. Memo. 2014-201, at 77.

[6] *See* IRS, "List of LB&I Active Campaigns" (last updated Dec. 10, 2024).

[7] Mary Cowx, "Tax Enforcement and R&D Credits," *J. Acct. & Econ.* (in press).

regulations — the nexus concept.[8] Given the broad applicability of this concept to the research credit, this article focuses only on how the nexus concept applies to employees of a taxpayer and their related expenditures and activities because, on average, those represent approximately 69 percent of QREs.[9]

The intended purpose of the nexus concept is to demonstrate the link between activities and expenditures using documentation. This can be a valuable tool for taxpayers to meet their burden of proof to claim the research credit, and from a practical standpoint, to make the credit more "auditable." However, the challenge for taxpayers is how to use documentation to address complex and subjective rules persuasively. This challenge is best summarized by the words of mathematician Adam Kucharski: "Acceptance of proof can depend on social factors. . . . It's not just a matter of evidence, it's also about the social dynamics around the evidence."[10] To better understand some of these dynamics, we must explore the origins and evolution of the nexus concept and how the IRS has used documentation to examine the research credit.

In 1995 the IRS's research credit issue specialist released two audit plans for use by examining agents because of the lack of regulations at the time. One of the audit plans addressed general research tax credit issues and arguably laid the groundwork for the nexus concept (although the term "nexus" is not found within the audit plan).[11] The audit plan instructed agents to request all workpapers used to compute the research credit, which should identify whether the taxpayer is using a cost center or department approach, or a project approach, or just listing the specific expenses that qualify.[12] The audit plan also instructed agents to issue an information document request for each project or activity requesting documentation or other information establishing that each project *or* activity satisfies the section 41(d) requirements.[13] This request appears to suggest that agents could have evaluated the documentation for either the project or activities even though the requirements under section 41(d) were to be applied at the business component level, which is typically a project and not an activity. While the audit plan demonstrates the need to connect costs and activities to the taxpayer's facts, it may have created issues when using two different approaches in evaluating the QRAs and QREs.

While the regulations have not directly addressed the nexus concept, it is important to understand the evolution of the documentation requirements to provide context for the timeline of the nexus concept. Although the 1998 proposed regulations contained specific requirements for recordkeeping and documentation of qualified research, the preamble provided particularly taxpayer-favorable insights regarding the intent of the documentation requirement:

> Taxpayers must (a) record the results of their scientific experiments (in a manner that is appropriate for the particular field of science in which the experiment is conducted and for the type of experiment involved) and (b) comply with the recordkeeping requirements of section 6001 and the regulations thereunder. The requirement that taxpayers record the results of their scientific experiments is *not intended to cause taxpayers to create records that otherwise would not be created*. Rather, the recording of results is inherent in a process of experimentation to discover information that is technological in nature. Limiting the availability of the credit to taxpayers who record the results of their scientific experiments is *not intended to change taxpayer behavior*, but to identify taxpayers who engage in a bona fide process of experimentation and thus may be eligible for the credit. [Emphasis added.][14]

[8] *See* LMSB-04-0508-030, "Research Credit Claims Audit Techniques Guide (RCCATG): Credit for Increasing Research Activities Under Section 41," at Ch. I (May 2008).

[9] *See* Treasury Office of Tax Analysis, "Research and Experimentation (R&E) Credit," at 3 (Oct. 12, 2016).

[10] Kucharski, *Proof: The Art and Science of Certainty* 9 (2025).

[11] *See* David W. Bernard, "Research Tax Credit: Audit Plan for Examination of the Research Tax Credit," IRS (Oct. 12, 1995) (paper by IRS research credit issue specialist).

[12] *Id.* at Para. I.2.

[13] *Id.* at Para. III.1.

[14] Preamble to REG-105170-97, 63 F.R. 66503 (Dec. 2, 1998).

As emphasized above, the intent of the documentation requirement was not to force taxpayers to contemporaneously create separate records or to change taxpayer behavior for purposes of substantiating the research credit. During the extension of the credit from July 1, 1999, to June 30, 2004, members of Congress submitted a committee report that expressed concerns about elements of the research credit, including the documentation requirement: "The conferees also are concerned about unnecessary and costly taxpayer record keeping burdens and reaffirm that eligibility for the credit is *not* intended to be contingent on meeting unreasonable record keeping requirements" (emphasis added).[15]

Regardless of this concern, among others, Treasury issued the 2001 final regulations,[16] which retained the heightened documentation requirement from the 1998 proposed regulations. The final regulations said:

> *No credit shall be allowed* under section 41 with regard to an expenditure relating to a research project *unless* the taxpayer — (1) Prepares documentation before or during the early stages of the research project, that describes the principal questions to be answered and the information the taxpayer seeks to obtain . . . and (2) satisfies section 6001 and the regulations thereunder. [Emphasis added.][17]

The requirement that taxpayers prepare documentation before or during the initial stages of the research project and address specific information received significant pushback from taxpayers and other stakeholders, who believed that the regulations were beyond the scope of the congressional intent. Based on this feedback, the IRS announced that it and Treasury would review and revise the 2001 final regulations.[18] The preamble to the 2001 proposed regulations included context for updating the documentation requirement:

> Treasury and the IRS recognize that the research credit presents a particular burden for taxpayers because tracking eligible expenditures may necessitate taxpayers preparing and keeping records unlikely to be prepared or kept for other business purposes. The fact that the records are not prepared or kept for other business purposes has made administration of the research credit burdensome for the IRS. . . . Treasury and the IRS have re-evaluated whether a research credit-specific documentation requirement is warranted and have concluded that the high degree of variability in the objectives and conduct of research activities in the United States compels a conclusion that *taxpayers must be provided reasonable flexibility* in the manner in which they substantiate their research credits. . . . Accordingly, Treasury and the IRS have concluded that the failure to keep records in a particular manner (so long as such records are in sufficiently usable form and detail to substantiate that the expenditures claimed are eligible for the credit) *cannot* serve as a basis for denying the credit. [Emphasis added.][19]

The 2004 final regulations[20] included this change, which was a significant win for taxpayers and remains in place today; however, the IRS's view of the nexus concept and documentation continued to evolve.

During 2007 and 2009 the IRS Large and Midsize Business Division[21] issued two directives[22] that designated research credit claims for refund as a Tier I issue and required the

[15] H.R. Rep. No. 106-478, at 132 (1999).

[16] T.D. 8930, 66 F.R. 280 (Jan. 3, 2001).

[17] Preamble to T.D. 8930, 66 F.R. at 294-295.

[18] Notice 2001-19, 2001-1 C.B. 784.

[19] Preamble to REG-112991-01, 66 F.R. 66362, 66366 (Dec. 26, 2001).

[20] T.D. 9104, 69 F.R. 22 (Jan. 2, 2004).

[21] The Large and Midsize Business Division rebranded to the Large Business & International Division on Oct. 1, 2010.

[22] *See* LMSB-4-0307-025, "Tier I Issue Research & Experimentation (R&E) Credit Claims Directive #1" (July 4, 2007); and LMSB-4-0608-035, "Tier I Research Credit Claims Issue Directive #2" (Jan. 15, 2009).

issuance of a mandatory IDR.[23] Taxpayers were asked to confirm if they had contemporaneous documentation that identified the nexus between QRAs and QREs to business components.[24] This brought a heightened level of scrutiny regarding taxpayers claiming refunds for research credits.

Also during 2007, the IRS Appeals Technical Guidance Research Credit Team issued a draft memorandum addressing specific issues. including the lack of nexus in research credit claims. The memorandum focused on the challenges using the hybrid approach to capturing costs and activities. The team takes the position that the hybrid approach faces an insurmountable problem because it lacks a nexus between the QRAs and QREs. From its experience, this occurs when taxpayers make qualification determinations without analyzing the relationship between the underlying records and the related activities or costs.[25]

The IRS issued an audit techniques guide (ATG)[26] in 2008 that discussed the requirement to identify qualified activities and expenditures by business component. Based on a taxpayer's accounting method, this could fall into three approaches: (1) by project (business component), (2) by cost center or department, or (3) a combination of these two (a hybrid approach, as discussed in the 2007 IRS appeals memorandum). The ATG discussed the potential risk that could arise with a taxpayer using the hybrid approach to establish nexus. For example, if a taxpayer does not have qualified percentages at the employee level and instead a subject matter expert for the taxpayer provides a single percentage against total department wage costs to compute wage QREs, that subject matter expert representation may or may not be supported by measurable corroborative records to sufficiently document the nexus. An important distinction to make with the ATG is that it does not list the third approach from the 1995 audit plan (simply listing the specific expenses that qualify). The IRS may have omitted this approach from the audit plan because it was more conclusory in nature and, more importantly, more challenging to connect the costs to the related activities.

In 2009 the Government Accountability Office issued a report that documented its analysis of the design of the research credit and provided recommendations for how to improve its administration, including how recordkeeping and compliance costs could be reduced.[27] The GAO analyzed alternative credit designs using a panel of corporate tax returns and assessed administrability by interviewing IRS and taxpayer representatives. It reported the following concerning the nexus concept:

> There was a wide difference in opinions between the IRS examiners and the tax practitioners we interviewed regarding what methods are acceptable for allocating wages between qualifying and nonqualifying activities. Practitioners noted that IRS prefers project accounting but, in its absence, used to accept cost center or hybrid accounting; however, in recent years, IRS has been much less willing to accept claims based on the latter two approaches. They also said that IRS examiners now regularly require contemporaneous documentation of QREs, *even though this requirement was dropped from the credit regulations in 2001*. Some practitioners suggested that the changes in IRS's practices came about because examiners were having difficulty determining how much QREs to disallow in audits when they found that a particular activity did not qualify. Others said that IRS does not want to devote the considerable amounts of labor required to review the hybrid documentation. [Emphasis added.][28]

[23] *See* LMSB-04-0508-030, *supra* note 8, at Exhibit C ("Tier I Mandatory Research Credit Claims IDR"). The IDR consisted of 18 multifaceted questions requesting extensive information regardless of the taxpayer's facts or technical positions. Taxpayers viewed the IDR as overly burdensome and ineffective in meaningfully advancing the examination process.

[24] *Id.* at Question 8.

[25] *See* IRS, Appeals Technical Guidance Research Credit Team, "Substantiating Research and Experimental Expenditures" (draft 2006).

[26] *See* LMSB-04-0508-030, *supra* note 8, at Ch. I.

[27] *See* GAO, "The Research Tax Credit's Design and Administration Can Be Improved," GAO-10-136 (Nov. 2009).

[28] *Id.* at 32.

The GAO report discussed a growing trend with research credit claims since the IRS designated the research credit as a Tier I compliance issue:

> The IRS noted that a growing number of the credit claims were based on studies that demonstrated certain characteristics including having a *lack of nexus* between the business component(s) and QREs or inadequate contemporaneous documentation. This focus was primarily on credits being claimed on amended returns where engagement fees were performed on a contingent basis. [Emphasis added.][29]

Although the LB&I tiered issue program was retired in 2012,[30] the IRS continued to focus on certain areas of higher potential risk regarding research credit claims.

The next significant milestone was in October 2021, when the IRS issued a release[31] that included field attorney advice on the process for claiming a research credit refund.[32] Relying on the specificity requirement,[33] the IRS clarified that for a research credit refund claim to be valid, taxpayers must provide five items of information with their amended tax returns. Research credit professionals expressed significant concerns about the burden on taxpayers to comply with this process — particularly taxpayers that use a cost center or hybrid approach for determining QREs and documenting the underlying nexus.[34] In June 2024 the IRS updated the research credit refund claim process to eliminate two of the five requirements — including the requirement that taxpayers provide, for each business component, the information each individual sought to discover. That requirement mirrored the controversial language from the 2001 final regulations for taxpayers to prepare documentation that describes the information the taxpayer sought to obtain.[35]

Although the research credit refund claim process is still in effect, it may sunset because of the new reporting requirements on Form 6765, "Credit for Increasing Research Activities." These reporting requirements are applicable for taxpayers claiming a research credit on their 2024 and 2025 tax year returns. This is the first time that the Form 6765 has included elements of the nexus concept, both quantitative and qualitative, by business component.[36]

Finally, in recent years, the IRS has developed a practice aid to supplement the 2008 ATG and assist with the transfer of knowledge to the next generation of IRS agents. This document includes extensive guidance on topics such as drafting IDRs and revenue agent reports, using best-practice examination techniques, using a 10-step audit tool, and leveraging other templates. The practice aid also includes issue-specific guidance such as a reference guide, training slides, and strategies for addressing issues like the nexus concept.[37] Below is an example from the practice aid that addresses nexus:

> Once it is determined which, if any, of the taxpayer's projects represent QRAs, then the only QREs which need to be determined are for those qualifying projects. If some projects are determined to be QRAs, a nexus must be found between the payments for wages, supplies, and contract research, and the QRAs to which the payments relate. In this example, the required nexus has not been established. The taxpayer estimated the total of its claimed in-house employee research wage amounts because it did not have contemporaneous documentation to prove an amount. While courts have allowed the use of an estimation method where a taxpayer does not have contemporaneous records, the taxpayer

[29] *Id.*

[30] LB&I-04-0812-010 (Aug. 17, 2012).

[31] IR-2021-203.

[32] FAA 20214101F.

[33] Under the specificity requirement of reg. section 301.6402-2, taxpayers must set forth in detail (1) the grounds on which they are claiming a credit or refund, and (2) sufficient facts to apprise the IRS of the basis of the claim.

[34] Jennifer Frost et al., "Research Credit Refund Claims: New Documentation Requirements," *The Tax Adviser*, at 9-11 (Feb. 2022).

[35] Preamble to T.D. 8930, 66 F.R. at 295.

[36] IR-2024-313.

[37] IRS, "SB/SE Research Credit Practice Aid" (undated).

> fails both conditions for allowance of its estimation methodology.[38]
>
> First, the taxpayer has failed to establish that it engaged in qualified research. A review of the taxpayer's project report reveals a daily application of engineering principles and data gathering and studies; however, any QRA was not readily apparent. The substantiation provided by the third-party consultant and the taxpayer, in support of the claims for the research credit, are wholly defined recollections, estimations, and reconstructions that are unreliable, inaccurate, incomplete, and absolutely insufficient to establish that the taxpayer engaged in qualified research.
>
> Second, the estimates did not have a "credible evidentiary basis" from which an accurate estimate could be made. Like the taxpayer in *Eustace*,[39] the taxpayer's estimation, which is based purely on dated recollection, estimation, and extrapolation, falls far short of meeting a taxpayer's burden of proof that the claimed salaries were paid for qualified research activities and not reimbursed in full. This case is certainly not like *Fudim*[40] where there was definitely no doubt that Mr. Fudim spent almost all of his time engaged in qualified services and at his cost.
>
> In summary, the taxpayer's reconstruction of claimed QREs is unreliable, inaccurate, incomplete, and wholly insufficient to establish that its claimed research expenditures qualify for any component of the research credit.[41]

The tone of this example speaks to the dynamic between the IRS and taxpayers regarding the research credit and the contentious nature of the nexus concept. The training instructs revenue agents to challenge the contemporaneous documentation used to establish the nexus of QRAs and QREs to projects (business components). If a taxpayer lacks sufficient proof to demonstrate the nexus, revenue agents will use a hard-line approach when evaluating the nexus method to support disqualifying QREs. To mitigate this potential risk, taxpayers must evaluate how their facts align to the code, regulations, and case law when establishing a nexus method for a research credit claim.

II. The Code and Regulations

QREs are amounts paid or incurred by a taxpayer during the tax year in the course of conducting any trade or business.[42] Wage QREs include any wages paid or incurred for qualified services performed by an employee.[43] Qualified services refer to activities that involve either engaging in qualified research or directly supervising or supporting research activities that meet the criteria for qualified research.[44] The code and regulations contain the following four requirements for qualified research:

- the section 174 test;[45]
- the discovering technological information test;[46]
- the business component test;[47] and
- the process of experimentation test.[48]

Taxpayers must apply this four-part test to evaluate each business component[49] and not to evaluate the activities performed by individuals. Further, the code and regulations do not specifically require taxpayers to establish a direct nexus between QREs and particular business components if they can substantiate the allocation of wages, supplies, and contract research expenses.

[38] *Cohan v. Commissioner*, 39 F.2d 540 (2d Cir. 1930); and *Fudim v. Commissioner*, T.C. Memo. 1994-235.

[39] *Eustace v. Commissioner*, T.C. Memo. 2001-66, *aff'd*, 312 F.3d 905 (7th Cir. 2002).

[40] *Fudim*, T.C. Memo. 1994-235.

[41] Practice Aid, *supra* note 37, at 21, Example 2.

[42] Section 41(b)(1).

[43] Section 41(b)(2)(A)(i).

[44] Section 41(b)(2)(B).

[45] Section 41(d)(1)(A) and reg. section 1.174-2(a)(1).

[46] Section 41(d)(1)(B) and reg. section 1.41-4(a)(3).

[47] Section 41(d)(2)(B) and (d)(3).

[48] Section 41(d)(1)(C) and reg. section 1.41-4(a)(5).

[49] Section 41(d)(2).

Moreover, the regulations include a patent safe harbor provision under which the issuance of a patent by the U.S. Patent and Trademark Office[50] serves as conclusive evidence that the taxpayer has discovered information that is technological in nature and intended to eliminate uncertainty regarding the development or improvement of a business component.[51] While a patent may help establish that a business component meets certain elements of the four-part test, it does not necessarily demonstrate the specific activities that employees performed on the business component. Moreover, the development activities constituting a process of experimentation that led to the patent application may not have necessarily continued into subsequent tax years. Regardless of whether a patent was issued regarding a business component, the taxpayer bears the burden of proof to demonstrate that activities and expenditures meet the requirements of section 41.

III. *Moore*

The taxpayers in *Moore* challenged the IRS's determination that the sole owner of an S corporation had income tax deficiencies of $68,263 and $141,945 for 2014 and 2015, respectively, related to research credit claims.[52] The taxpayers contended that the company's president and chief operating officer, Mr. Robert, spent considerable time on new product development meeting the definition of qualified research, and engaged in direct supervision or direct support of qualified research. Therefore, the taxpayers included 65 percent of Robert's compensation as wage QREs. The IRS asserted that the taxpayers did not adequately prove this percentage, noting a total lack of written records demonstrating Robert's use of time.

A. Background

Gayla Moore was the sole owner of Navco Inc., an S corporation that manufactures scoreboards, LED video displays, score tables, and other equipment for sports venues. Navco claimed research credits based on its product development activities, including both new and improved products. After concessions regarding all other qualified expenses used in calculating the credit, the only remaining issue for the Tax Court to determine was whether, and to what extent, compensation paid to Robert, Navco's president and COO at the time, qualified for purposes of calculating the research credit.

B. Personnel Involved in Research

Robert started his career as a software engineer and subsequently took on leadership roles in various businesses and industries, including in the positions of chief information officer and vice president. Robert began working at Navco as an employee in 2006, and he was responsible for new product development to help the company regain its diminishing market share.

During the credit years in question, Navco employed six to 10 front-line engineers within its engineering department, which worked at the company's manufacturing facility. The engineering department also included Mr. Paslay, director of engineering, as a first-level supervisor of the engineers. Paslay supervised the engineers regarding new product design, improvements to existing products, and the manufacturing processes for those products. Robert worked closely with Paslay during daily visits to his office and weekly scheduled meetings to discuss new product development initiatives. While Robert and Paslay participated in detailed and technical discussions about new products, the front-line engineers were not a part of the discussions or meetings with Robert. Although the engineering department did not record how it spent its time, the taxpayers and the IRS stipulated that the engineers performed qualified research and that their wages were QREs.

C. New Products Under Development

During 2014 and 2015, Navco personnel designed and developed new and improved products, including Scoreboard Truss, Scorbitz, the New Caney Ribbon Board, the MPCX-2, and the Slim Shot Clock. Further, the Scorbitz project resulted in a patent, with Robert and other Navco employees named as the inventors. The qualification of each of the product development efforts (business components) was not in

[50] 35 U.S.C. section 151.

[51] Reg. section 1.41-4(a)(3)(iii).

[52] *Moore*, T.C. Memo. 2023-20.

question, and neither was Robert's role in those efforts.

The Tax Court determined that Robert's product development activities included ideation, marketability reviews, product requirements and specifications development, design process development, technical design development, and related tests and design reviews. On more than one project under development, Robert was a decision-maker regarding ultimate product design. Robert estimated that he spent between 50 and 65 percent of his time on new product development during 2014 and 2015.[53]

D. Court Analysis and Opinion

The Tax Court noted that qualified wages include those for employees directly performing qualified research and for employees engaged in direct supervision or support of employees performing qualified research. In determining whether an employee performed qualified research, the Tax Court referenced section 41(d), which defines qualified activities at the business component level and not the individual employee level. As a result, the Tax Court determined that not all of Robert's product development time qualified for the research credit. Regardless, even after applying the four-part qualification test to Robert's product development activities, the Tax Court acknowledged that at least a portion of his time on new product development would meet the criteria.

Although the Tax Court never referenced the *Cohan* rule,[54] which would allow the court to estimate the portion of time an employee spent performing qualified research, it was unable to formulate an estimate because of the lack of contemporaneous documentation provided. The Tax Court emphasized that this was not just a lack of specific documentation regarding Robert's time spent on product development projects, but a lack of general documentation. For example, the taxpayers did not keep records of meetings, job roles, or even the specific calculations used to determine Robert's significant bonuses paid in 2014 and 2015. If the taxpayers were able to provide documentation that demonstrated the nexus to QRAs, regardless of whether it was contemporaneous, the Tax Court may have been able to estimate the portion of Robert's time spent performing qualified research. Moreover, the Tax Court found that Robert's activities did not constitute direct support or direct supervision of those directly performing research. Therefore, none of the wages paid to Robert were determined to be QREs.

E. Seventh Circuit Appeal

The taxpayers filed an appeal, arguing that the Tax Court made a legal error by excluding all of Robert's compensation from the research credit computation. However, the Seventh Circuit affirmed the Tax Court's decision and noted that there was a lack of evidence to show what fraction of Robert's time entailed research that involved experimentation. One nuance the Seventh Circuit pointed out is that "the problem is not simply the lack of written records (though that is a big problem); it is that Robert could not even estimate how much of his research involved 'experimentation' either in a colloquial sense or under the regulations' specifications."[55] Regardless, the opinion underscores that the taxpayer bears the burden of proof when substantiating QREs, particularly when establishing a basis for estimating QREs using the *Cohan* rule.[56] Under that rule, if a taxpayer can establish that it incurred a deductible expense but cannot substantiate the exact amount, the court may estimate the amount if there is a reasonable basis for doing so.

IV. Preceding Case Law

As in *Moore*, the term "nexus" historically remains unused and undefined by the courts when evaluating the relationship between QRAs and QREs. However, they have indicated that a

[53] It is unclear how the range of time that Robert testified he spent on product development during 2014 and 2015 compared with the percentage of his taxable wages treated as QREs. Any discrepancies in percentages, paired with the lack of documentation, could have given the appearance that the taxpayer failed to (1) establish the facts necessary to substantiate the QREs, or (2) provide a basis for the Tax Court to estimate the QREs using the *Cohan* rule.

[54] *Cohan*, 39 F.2d 540.

[55] *Moore*, 101 F.4th at 511.

[56] Kristen A. Parillo, "Executive's Pay Held to Be Properly Excluded From Research Credit," *Tax Notes Federal*, May 6, 2024, p. 1107.

relationship between activities and qualified expenses can be demonstrated with documentation or other sufficient support memorializing the expenses as related to qualified activities.[57] Consideration must be given to cases such as *Fudim*,[58] *Shami*,[59] and *Suder*,[60] which provide guidance in determining how the proof of nexus might be achieved and, in some cases, the court's ability to determine qualified expenses based on the support provided by the taxpayer. There has been more recent case law, such as *Little Sandy Coal*,[61] which provides insights regarding the relationship between specific activities performed throughout the research and development process and qualification estimates provided to calculate QREs.

A. *Fudim*

The taxpayers in *Fudim* claimed the research credit for 1987 and 1988 but did not maintain contemporaneous time logs or other detailed records of the hours spent on QRAs for developing a rapid modeling process to fabricate plastic objects. The IRS disallowed a portion of the research credit claims, arguing that Efram and Margarita Fudim failed to provide adequate documentation to support the QREs claimed. Central to the case was whether the Fudims could substantiate their claim for the research credit without detailed time records.

To answer that question, the Tax Court evaluated the application of the *Cohan* rule. *Fudim* was the first case in which the Tax Court relied on the *Cohan* rule to estimate QREs for a research credit claim. In applying this rule, the Tax Court solicited testimony from both the Fudims concerning their work and the time that they spent performing QRAs. The Tax Court also reviewed supporting evidence that included technical documentation, patent activity, and scientific publications.

By exercising the *Cohan* rule, the Tax Court in *Fudim* established that estimates can be relied on when a taxpayer provides documentation that can provide a factual basis; however, specific to *Fudim*, this was regardless of whether the documentation itself addresses how the QRAs or QREs relate to a qualified business component.[62]

B. *Shami*

In *Shami*, the Tax Court evaluated testimony related to research credits claimed by investors of Farouk Systems Inc. (FSI), a company involved in developing haircare products. Although FSI maintained that dozens of its employees engaged in QRAs, Farouk Shami (CEO) and John McCall (executive vice president) generated more than 80 percent of the wage QREs for 2003, 2004, and 2005. Neither of the executives had any formal education or training in any physical or biological science or engineering. The Tax Court found that FSI failed to prove that either executive was directly involved in, or supervising, the performance of qualified research; and further, FSI did not provide adequate documentation to substantiate the wage QREs.

While the taxpayers argued that the *Cohan* rule could be applied to estimate the wage QREs based on the documentation provided, which included emails and product testing reports, the Tax Court rejected that argument, saying that the taxpayer failed to establish that the activities in question met the statutory definition of qualified research. Moreover, testimony that the taxpayers offered to substantiate the time that Shami and McCall spent performing qualified services was inadequate and contradictory, according to the court, which determined that the testimony was general, vague, conclusory, and insufficient. Therefore, the uncorroborated allocations of time spent by highly compensated executives with no scientific backgrounds was an insufficient basis on which to make an estimate.

The Fifth Circuit upheld the disallowance of the wage QREs, finding that no evidence concerning Shami or McCall sufficiently

[57] Kreig D. Mitchell, "The Research Tax Credit: Accounting for Nexus," 12 *J. Tax Prac. & Proc.* 41, 47-48 (April/May 2011).

[58] *Fudim*, T.C. Memo. 1994-235.

[59] *Shami v. Commissioner*, T.C. Memo. 2012-78, *aff'd*, 741 F.3d 560 (5th Cir. 2014).

[60] *Suder*, T.C. Memo. 2014-201.

[61] *Little Sandy Coal Co. v. Commissioner*, T.C. Memo. 2021-15, *aff'd*, 62 F.4th 287 (7th Cir. 2022).

[62] Although the Tax Court did not require the taxpayer to prove the nexus to the business components when applying the *Cohan* rule, *Fudim* may have been a precipitating factor for the IRS to publish one of the two audit plans in 1995.

established their involvement in the qualified research performed by the company. However, the Tax Court's decision was vacated, and the case was remanded, on other grounds.

C. *Suder*

Suder involved Estech Systems Inc., an S corporation that claimed research credits related to the development of full-featured telephone systems for small and midsized businesses. The IRS sought to disallow the research credits, asserting that the wage QREs were not adequately substantiated. Throughout the proceedings, the Tax Court emphasized that for wages to qualify for the research credit, there must be a direct nexus between the employee's activity and the qualified research.

The court scrutinized the roles and time allocations of two employees — Eric Suder, CEO and primary shareholder, and Harvey Wende, senior vice president of product development. Despite being the CEO, Suder was personally involved in technical design decisions, reviewing prototypes and participating in problem solving. The Tax Court focused on contemporaneous documentation provided by the taxpayer and four days of testimony from Wende regarding the individuals' roles and responsibilities. Further, contemporaneous records and employee testimony, called on by the taxpayer and the IRS, corroborated the testimony provided by Wende.

Based on the information provided, the Tax Court determined that the testimony was sufficient to establish the employees' time allocation for qualified services. *Suder* reinforces that substantiating the nexus between employee activities and qualified research is critical and that taxpayers can demonstrate nexus using detailed records and credible employee testimony.

D. *Little Sandy Coal*

In this case the Tax Court focused on whether shipbuilding activities by the taxpayer, Little Sandy Coal Co. Inc., met the four-part test for qualified research. It determined that the company relied on after-the-fact estimates and generalized descriptions of activities; therefore, the taxpayer failed to provide sufficient contemporaneous documentation to demonstrate the nexus of specific employee activities to qualified research.

Affirming the decision of the Tax Court, the Seventh Circuit emphasized that taxpayers should provide a clear nexus between claimed activities and qualified research to substantiate the cost being qualified for the research credit. Further, the Seventh Circuit found that reliance on arbitrary estimates and broad assertions rather than detailed records, time tracking, or other adequate documentation of specific employee activities would not be adequate to establish nexus.

V. Considerations

Moore and the related case law discussed illustrate the broad role that the nexus concept plays in research credit analysis. Given the IRS's continued scrutiny, taxpayers must strategically develop and use a method for how to establish the nexus of QRAs and QREs to business components. Therefore, it is prudent that taxpayers consider the following in determining and documenting their research credit claim each year.

A. Anticipating Challenges to Tax Positions

The research tax credit is an annual analysis and, as a best practice, taxpayers should evaluate prior tax technical positions[63] they have taken to determine if those positions are still appropriate based on the credit year facts and any recent developments such as case law and the issuance of technical guidance. In the context of wage QREs, this may include positions within the code and regulations, such as:

- qualified employees above first-level manager;[64]
- activities that are performed after the beginning of commercial production but are part of a process of experimentation;[65]

[63]Taxpayers that have analyzed prior research credits for purposes of financial accounting and reporting under ASC 740 (accounting for income taxes) should, as a starting point, evaluate the units of account and the supporting details to assist with claiming and defending research credits prospectively.

[64]Reg. section 1.41-2(c)(2).

[65]Reg. section 1.41-4(c)(2)(i) and (ii).

- late-stage testing of products;[66] and
- wages reasonable under the circumstances.[67]

Further, taxpayers have recently been challenged on technical positions related to employee activities, such as satisfaction of the "substantially all" rule in *Little Sandy Coal*.[68] Under that rule, activities cannot constitute qualified research under section 41(d)(1) unless substantially all of those activities are elements of a process of experimentation that relates to a qualified purpose.[69] This has been an area of contention about which activities constitute elements of a process of experimentation and how the substantially all rule should be applied.[70] Taxpayers have also been challenged in the courts[71] regarding broader concepts, such as establishing nexus between the credit year and the base period using the consistency rule.[72]

In evaluating technical positions for a research credit claim, taxpayers must consider the weight of the authorities supporting the treatment in relation to the weight of authorities supporting contrary treatment. Therefore, taxpayers should address all authorities relevant to the tax treatment of an item, and they must weigh the authorities based on their facts and circumstances to determine the tax return reporting standard for the position taken.[73] Further, taxpayers should be aware that this is an objective standard under which there may be substantial authority for more than one position regarding the same item.[74] In analyzing their technical positions, taxpayers must also consider the types of authority[75] and elements of the authority — such as its persuasiveness (whether it is conclusory or there is a detailed analysis supporting the conclusion) and how long ago it was issued (if it is more than 10 years old and thus accorded little weight).[76]

B. Evaluating Available Documentation

Once taxpayers have identified the technical positions that the IRS may challenge, they must strategically identify how documentation can demonstrate nexus and support the positions taken. A taxpayer's books and records play a critical role in how the nexus concept can substantiate a research credit claim. In general, it is estimated that two out of three taxpayers are unable to sustain even 80 percent of their research credit claim and could benefit from more targeted contemporaneous documentation coverage.[77] In addition to time tracking, product development life cycle,[78] and similar documents, taxpayers can leverage other sources of documentation as a basis for establishing nexus.

According to the 2005 ATG,[79] a meeting should take place between the examination team and the taxpayer to discuss what type of contemporaneous books and records are available to substantiate the research credit claimed. Also, contemporaneous books and records should form the basis of the examination, and the IRS agents should request this information, as needed, in examining the issues addressed in this ATG. The ATG provides a list of information that clarifies the appropriation of company resources or details

[66] Reg. section 1.174-2(a)(7).

[67] The Tax Cuts and Jobs Act, P.L. 115-97, removed the requirement that the expenditures be reasonable under the circumstances for the tax years beginning after December 31, 2021. *See* former section 174(e) (pre-TCJA) and reg. section 1.174-2(a)(9).

[68] *Little Sandy Coal*, T.C. Memo. 2021-15.

[69] Section 41(d)(1)(C) and reg. section 1.41-4(a)(6).

[70] John Andress et al., "Examining the 'Substantially All' Rule for the Research Credit," *Tax Notes Federal*, Apr. 21, 2025, p. 481.

[71] *Research Inc. v. United States*, No. 3-94-385 (D. Minn. June 21, 1995). While taxpayers often cite the district court's decision when applying the consistency rule, the case predates the codification of that rule.

[72] Section 41(c)(5) and reg. section 1.41-9(c)(2).

[73] *See* AICPA, "Preface to Interpretations of Statements on Standards for Tax Services Nos. 1 and 2," at 3 (Jan. 1, 2024). The most common tax return reporting standards are "more likely than not" (greater than 50 percent likelihood that the position is upheld based on its merits if it is challenged) and substantial authority (approximately 40 percent).

[74] Reg. section 1.6662-4(d)(3)(i).

[75] Reg. section 1.6662-4(d)(3)(iii).

[76] Reg. section 1.6662-4(d)(3)(ii).

[77] Pamela Sommers, "The Ripple Effect of an R&D Tax Credit Study's Real Costs" (Dec. 11, 2017).

[78] A product development life cycle is a framework that outlines, and provides critical context for, the stages of development. This may include ideation, planning, design, development, testing, refining, launch, maintenance, and continuous improvement. Taxpayers may generate contemporaneous documentation at each stage of the product development life cycle.

[79] IRS, "Audit Techniques Guide: Credit for Increasing Research Activities," at ch. 7, "Substantiation and Recordkeeping" (June 2005).

of research projects the taxpayer conducted during the examination year, such as:

- materials explaining research activities, including brochures, pamphlets, releases, and other similar documents;
- minutes, notes, or other similar recordings from budget, board of directors, managerial, or other similar meetings concerning research activities;
- field and lab verification data and summary data; and
- papers, treatises, or other published documents regarding the taxpayer's research.

The ATG also says that credible oral testimony by individuals with personal knowledge of the issues may be helpful in evaluating or supplementing a taxpayer's contemporaneous documentation; however, as demonstrated in *Moore*, taxpayers must provide some documentation to serve as a basis for supporting the qualification of research activities or expenditures before supplementing it with oral testimony as necessary.

When evaluating the documentation available to address a technical position and demonstrate the supporting nexus, taxpayers should consider if the documentation:

- demonstrates firsthand knowledge of the activities and aligns with subject matter expert testimony;[80]
- supports the allocation of wages to qualified services;[81]
- is contemporaneous;[82] and
- provides the author, date, and source.[83]

When evaluating documentation that can demonstrate the nexus for a technical position, it is critical that taxpayers perform a risk assessment for each document and for the documentation in aggregate. Understanding how documentation could substantiate, or challenge, a tax position enables taxpayers to prepare their research credit analysis using a more comprehensive approach. While taxpayers *should* have reasonable flexibility in the way they substantiate their research credits, there is inherent risk that the taxpayer (or the IRS) could misinterpret documentation when evaluating the often-subjective rules of the research credit.

Although the IRS started using AI before December 2020,[84] primarily for examination workload selection,[85] it is unclear how the agency will accept a taxpayer's use of AI for certain components of a federal income tax return. If taxpayers are using AI to increase data accuracy, increase processing speeds, or perform computations, the IRS may be more accepting of a method that incorporates these elements if there is still the appropriate human oversight. For example, taxpayers should consider using AI for elements of applying the nexus concept such as identifying and analyzing contemporaneous documentation and aligning it to support the technical positions. However, even if taxpayers are using an AI tool developed using pattern recognition to automate an otherwise manual process, the IRS may still challenge this approach. This is analogous to the IRS's approach for interviewing subject matter experts to evaluate the credibility of the individual providing information used in the research credit analysis and validating the facts regarding the research. Further, the IRS may challenge the use of AI tools for decision-making regarding qualification of activities or expenditures if it believes that there was an overreliance on the AI, without proper diligence and follow-up, and that the appropriate accuracy requirements have not been met.[86]

[80] *Eustace*, T.C. Memo. 2001-66.

[81] *Shami*, T.C. Memo. 2012-78.

[82] IRS examiners regularly require contemporaneous documentation of QREs even though this requirement was removed from the section 41 regulations in 2001. *See* GAO, *supra* note 27, at 89. Although the courts have rejected this assertion (*Union Carbide Corp. v. Commissioner*, T.C. Memo. 2009-50, *aff'd*, 697 F.3d 104 (2d Cir. 2012)), it remains an area of contention when evaluating if there is a basis for applying the *Cohan* rule to estimate QREs.

[83] *Siemer Milling Co. v. Commissioner*, T.C. Memo. 2019-37, at 5.

[84] Executive Order 13960, "Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government" (Dec. 8, 2020), guided federal agencies in adopting AI in a way that promotes public trust and confidence. The order required agencies to prioritize design, development, acquisition, and use of AI while emphasizing the importance of ensuring that the AI use is lawful, purposeful, accurate, secure, and accountable.

[85] Treasury Inspector General for Tax Administration, "The IRS Could Leverage Examination Results in Artificial Intelligence Examination Case Selection Models and Improve Processes to Evaluate Performance," 2025-308-022 (May 19, 2025).

[86] *See* section 6662 and 31 C.F.R. section 10.22 (diligence as to accuracy).

C. Applying a Nexus Method

After a taxpayer has identified the technical positions and the documentation available to effectively support these positions, it should develop a method that systematically demonstrates the nexus of the research credit claim while balancing its tolerance for the potential risk for disallowance based on the technical merits. When preparing a research credit analysis, taxpayers should be aware that, in general, the IRS has instructed agents to rely on the amount and type of documentation that the taxpayer has available in determining how they should proceed with the examination.[87] Therefore, taxpayers are presented with the opportunity to apply a method for establishing nexus to document technical positions that they believe are critical to substantiating their research credit claim.

Taxpayers must consider the various sources of data captured throughout their organization and how those data are part of the nexus method. If a taxpayer uses time tracking that documents the activities and projects (business components) that each employee worked on during the credit year, it should properly analyze and vet this critical data source before using it in the research credit analysis. However, smaller taxpayers in particular industries may not have a time tracking or similar system. While the types of documentation can vary based on the taxpayer's profile, such as industry, organizational structure, and data retention policy, below are more general examples of other documents that could help substantiate wage QREs and the related activities:

- Issue logs may identify technical uncertainties that continued to exist after the beginning of commercial production[88] while documenting which employees participated in a process of experimentation to eliminate the technical uncertainties.
- Job descriptions may explain an employee's role within the organization, and the development process, while demonstrating how different departments perform qualified services[89] on projects.
- Organizational charts may identify employees who performed QRAs while also addressing whether employees above first-level manager[90] performed those activities.
- Testing documents may identify the employees, the nonroutine tests[91] that each employee performed, and the alternatives evaluated, while also demonstrating that technical uncertainty can still exist in late-stage development.

Taxpayers applying a nexus method can make their research credit analysis easier for the IRS or the courts to evaluate. For example, documentation that speaks to the qualified services under section 41(b) may be helpful when further supporting how employee wages were computed; however, additional documentation may be needed to demonstrate how the four-part test under section 41(d) — including the substantially all rule for the process of experimentation rule — was met at the business component level. This detailed analysis demonstrating how the nexus addresses the specific requirements may help prevent misapplication of the research credit requirements.[92]

VI. Conclusion

While the nexus concept is not addressed in the code or regulations, the IRS has operationally established this requirement, and the courts have adopted it over time. Therefore, taxpayers should

[87] LMSB-04-0508-030, *supra* note 8, at Ch. II.

[88] While the definition of qualified research excludes research after commercial production under section 41(d)(4)(A) and reg. section 1.41-4(c)(2), there may be instances in which taxpayers have not resolved the ongoing technical uncertainty, and a process of experimentation is still taking place.

[89] Beginning with the 2025 tax year, most taxpayers must report wage QREs by qualified services category and, because of recent case law, taxpayers are concerned that the IRS could use this data to preemptively evaluate the process of experimentation "substantially all" rule.

[90] As discussed in *Shami*, the courts have found that although under reg. section 1.41-2(c)(2), the definition of direct supervision of qualified research does not include supervision by a higher-level manager to whom first-line managers report, higher-level managers can perform direct supervision.

[91] Based on taxpayer facts, it is important to consider the language in section 41(d)(4)(D), which says that qualified research does not include routine or ordinary testing or inspection for quality control.

[92] The Tax Court in *Little Sandy Coal* inadvertently applied the concept of QREs under section 41(b) and reg. section 1.41-2 to the process of experimentation requirement, rather than section 41(d) and reg. section 1.41-4, when evaluating the process of experimentation "substantially all" rule.

work under the assumption that the nexus concept will continue to be a necessary component of their research credit analysis until further regulations are issued or the courts apply a different interpretation of the documentation requirements.

Upon examination, taxpayers that have proactively documented the nexus for a technical position are able to more effectively work with the examination team to define the scope of the audit and the role of documentation in substantiating the research credit claim. This approach can give taxpayers a solid foundation for demonstrating the technical merits of the tax positions that, if rejected by the IRS exam team, will be evaluated by an Appeals team or the courts to achieve a resolution. It is in the best interest of taxpayers and the IRS to collaborate on a balanced approach for evaluating a research credit claim by focusing on the nexus concept.[93] ■

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