

TREASURY INSPECTOR GENERAL FOR TAX ADMINISTRATION



National Research Program Tax Return Selection Process for Tax Years 2017 and 2019

November 29, 2022

Report Number: 2023-IE-R002

This report has cleared the Treasury Inspector General for Tax Administration disclosure review process and information determined to be restricted from public release has been redacted from this document.

Why TIGTA Did This Study

The IRS conducts National Research Program (NRP) audits to collect compliance data for different types of taxes and various sets of taxpayers. NRP audits are designed to provide a statistically valid representation of the compliance characteristics of taxpayers. In July 2022, a media outlet reported that the process to select specific taxpayers for the Tax Years (TY) 2017 and 2019 NRP audits may not have been random. At the request of the Commissioner of Internal Revenue and representatives from Congress, TIGTA initiated this review to determine if the IRS randomly selected individual tax returns for TYs 2017 and 2019 NRP audits.

Impact on Tax Administration

The NRP seeks to increase public confidence in the fairness of the tax system by helping the IRS identify where compliance problems occur so the IRS can efficiently and effectively utilize its resources to address those problems. However, tax compliance and confidence in the fairness of the tax system could decline if taxpayers believe that the IRS unfairly targets specific taxpayers for NRP audits for inappropriate purposes.

What TIGTA Found

For TYs 2017 and 2019, the IRS's Research Applied Analytics and Statistics (RAAS) organization selected samples of more than 10,900 tax returns for NRP audits. Our assessment of the original sample selection process concluded that the IRS randomly selected TYs 2017 and 2019 tax returns for NRP audits. Specifically, TIGTA found that RAAS determined and provided key decisions and information related to the tax return selection processes to the contractor prior to selecting tax returns. Additionally, TIGTA found that computer programs: 1) categorized returns in the correct strata; 2) correctly selected tax returns for audit based on criteria for inclusion in the sample selection file; and 3) did not include malicious code that would force the selection of taxpayers for an NRP audit. TIGTA confirmed that the processes and computer programs worked as designed, which reduces the ability to select specific taxpayers for an NRP audit.

In July 2022, IRS officials requested that a contractor, who was not involved with the TYs 2017 and 2019 sample selections, replicate the process. Specifically, the contractor replicated each week's original sample selection file through April 2018 and July 2020 for TYs 2017 and 2019, respectively. Once replicated, RAAS officials and the contractor performed a return-by-return comparison between the replicated files and the original sample selection files to verify the files matched. They concluded that the tax returns in the original samples were the same tax returns selected when the process was replicated using the respective seed numbers. TIGTA also compared the contractor's replicated weekly output files to the original weekly output files and, same as the IRS, TIGTA determined they matched.

However, due to resource constraints, RAAS reduced the original samples of more than 10,900 returns to 4,000 tax returns for both TYs 2017 and 2019, hereafter referred to as the subsamples. The inability of IRS management to timely forecast resource requirements resulted in RAAS deviating from the established return sample selection process when the subsamples were selected. Once the IRS decided to subsample returns from the original population, RAAS officials did not document the new seed numbers prior to initiating subsampling. Because the seed numbers were not selected independently and documented prior to initiating subsampling, there is a risk that the seed numbers used could have ensured that specific taxpayers from the original sample remained in the subsamples. Although we did not identify misconduct during our review, TIGTA is taking additional steps to assess the process used to select the seed numbers.

What TIGTA Recommended

TIGTA did not make any recommendations for this review.



TREASURY INSPECTOR GENERAL
FOR TAX ADMINISTRATION

U.S. DEPARTMENT OF THE TREASURY

WASHINGTON, D.C. 20024

November 29, 2022

MEMORANDUM FOR: ACTING COMMISSIONER OF INTERNAL REVENUE

FROM:

Russell P. Martin 
Deputy Inspector General for Inspections and Evaluations

SUBJECT:

Final Report – National Research Program Tax Return Selection Process
for Tax Years 2017 and 2019 (IE-22-014)

This report presents the results of our review to determine if the Internal Revenue Service (IRS) randomly selected individual tax returns for the Tax Years 2017 and 2019 National Research Program audits. This review was conducted at the request of the Commissioner of Internal Revenue and Congressional stakeholders.

Management's complete response to the draft report is included as Appendix II.

Copies of this report are also being sent to the IRS managers affected by the report information. If you have any questions, please contact me or James A. Douglas, Director, Office of Inspections and Evaluations.

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Background

The Internal Revenue Service's (IRS) National Research Program (NRP) is a program that is designed to randomly select returns for audit in order to assist the IRS in measuring compliance for different types of taxes and various sets of taxpayers.¹ The NRP seeks to increase public confidence in the fairness of the tax system by helping the IRS identify where compliance problems occur so the IRS can efficiently and effectively use its resources to address those problems. The IRS notes that the randomness of the sample of selected tax returns for NRP audits is designed to provide a statistically valid representation of the compliance characteristics of taxpayers.

On July 6, 2022, a news media outlet reported concerns that the process used by the IRS to select specific taxpayers for the Tax Years (TY) 2017 and 2019 NRP audits may not have been random.² Tax compliance and confidence in the fairness of the tax system could decline if taxpayers believe that the IRS unfairly targets specific taxpayers for NRP audits for inappropriate purposes. At the request of the Commissioner of Internal Revenue (Commissioner) and representatives from Congress, we initiated a review to determine if the IRS randomly selected individual tax returns for TYs 2017 and 2019 NRP audits.

NRP tax return sample selection process

The IRS states that the Forms 1040, *U.S. Individual Income Tax Return*, audited as part of the NRP are randomly selected each year using a statistical sampling process that leverages the use of computer programs. To ensure that the sample includes returns the IRS received throughout the calendar year, the IRS selects returns each week as they are processed. The sampling selection continues into the subsequent calendar year to ensure that late posting returns are also subject to sampling.³ For example, the IRS began selecting TY 2017 returns in January 2018, which coincides with the start of the filing season, and the IRS continued selecting returns through March 2019. Whereas, selections for TY 2019 tax returns started in January 2020 and continued through May 2021.⁴

The IRS's Research Applied Analytics and Statistics (RAAS) organization is responsible for developing the tax return sampling plan each year. The plan includes specific selection criteria that serves as the basis for updating the existing computer programs used to select tax returns during processing. The IRS noted that the sampling plan was changed in TY 2017 from what was used in prior years and continues to be used currently. Representatives from RAAS stated that the sampling plan was changed in an effort to reduce the overall sample size to accommodate reductions in Small Business/Self-Employed Division examination staffing due to constrained IRS budgets.

¹ Internal Revenue Manual 4.22.1, *National Research Program (NRP), National Research Program Overview* (Sept. 6, 2017).

² The tax year is a 12-month accounting period for keeping records on income and expenses used as the basis for calculating the annual taxes due. For most individual taxpayers, the tax year is synonymous with the calendar year.

³ The IRS updates computer systems during the first few weeks of the new calendar year. During this period, no transactions are posted to the computer systems. The sampling continues when processing resumes.

⁴ For TY 2019, the NRP selected returns through May 2021 because of the Coronavirus Disease 2019 pandemic.

TYs 2017 and 2019 sampling plans consisted of 88 different strata. These strata divide the overall population of individual tax returns into mutually exclusive subgroups based on characteristics of the tax return such as the amount of income reported, specific schedules attached to the Form 1040, and/or the reporting of business income. Because the actual population of tax returns expected in each strata is not known when the plan is developed (*i.e.*, prior to the processing of tax returns), RAAS analysts estimate the strata populations. The sampling rate for each strata (*i.e.*, number of returns to be selected for an NRP audit) is then calculated by dividing the desired sample size for the strata by the estimated population of the strata.

The IRS stated that the NRP sampling plan is designed to ensure that every filed tax return has a chance of selection for an NRP audit. However, tax returns with higher incomes have a higher probability of selection due to the IRS’s increased focus on the compliance of this population of taxpayers as well as the fact that the number of returns filed by higher income taxpayers is less than other types of filings. Accordingly, the chance of being selected for an NRP audit varies based on the characteristics of a taxpayer’s return such as the amount and type of income reported. Figure 1 depicts a return with the lowest, middle, and highest chance of selection based on the NRP’s sample design criteria for TYs 2017 and 2019.

Figure 1: Examples of Sampling Rate Calculations and Chances of Selection for Three Strata From TYs 2017 and 2019 NRP Audits

	TY	Desired Sample Size	Estimated Population	Sampling Rates	Chances of Selection
Strata with the lowest chance of selection	2017	1,118	65,617,400	$= 0.0000170382$	1 in 58,692
	2019	1,118	72,675,534	$= 0.0000153834$	1 in 65,005
Strata with a medium chance of selection	2017	134	646,937	$= 0.0002071299$	1 in 4,828
	2019	134	590,942	$= 0.0002267566$	1 in 4,410
Strata with the highest chance of selection	2017	337	46,630	$= 0.0072271070$	1 in 138
	2019	337	68,011	$= 0.0049550808$	1 in 202

Source: Treasury Inspector General for Tax Administration (TIGTA) analysis of TYs 2017 and 2019 NRP sample design documents.

Outside contractor responsible for updating computer programs that identify and select tax returns for NRP audit

Each year, an IRS contractor updates NRP computer programs. IRS officials stated that a contractor is used because the IRS does not have the in-house expertise needed to update these programs.⁵ RAAS provides the contractor with its sampling plan prior to the start of the

⁵ According to the IRS, the computer programming language requires the skill set of specialized contractors because it is no longer commonly used.

upcoming filing season. The contractor then uses the sampling plan to update the four computer programs used to select the NRP sample for audit from the population of tax returns processed each week. Figure 2 provides a description of the functionality of each of these programs as they are executed.

Figure 2: Description of Programs Used to Select the NRP Sample

Programs	Program Description
460-41	Extracts select fields from IRS tax records. The output file from this program is then used in Program 460-45.
460-45	Selects Form 1040 series returns for initial NRP case assignment. The output file from this program is then used in Program 460-46.
460-46	Selects Form 1040 series returns for final NRP sample selection case assignment.
460-42	Compares the projected tax return volumes and actual tax return volumes as well as the rates for sample selection based on the outputs of Programs 460-45 and 460-46.

Source: IRS Core Operators Handbook for Programs 460-41, 460-45, 460-46, and 460-42 as of January 2018.

The IRS uses commercially available software to store and manage the computer programs listed in Figure 2. This software maintains version control and provides the IRS with the ability to identify when programs are accessed or modified subsequent to the program being placed into production (*i.e.*, completed for use).

As part of the annual sampling plan, RAAS also provides the contractor with a seed number that is used to generate a random number file, which is then used without modification for the entire year.⁶ To generate the random number file, the contractor inputs the seed number into a commercial analytics software package to generate 200 million random numbers between 0 and 1. As tax returns are processed, they are organized in ascending Taxpayer Identification Number (TIN) order, and then each tax return is assigned the next random number in sequential order of their TIN from the generated random number file. This random number is then compared to the sampling rate for each strata provided by RAAS in its sampling plan and dictates whether a tax return will be selected for an NRP audit. Specifically, the assigned random numbers ultimately determine the specific tax returns that are selected for audit. Using the strata with the highest chance of selection for TY 2017 from Figure 1, the following example provides a hypothetical scenario of how the random number is used to determine if a return is selected for an NRP audit.⁷

- *A taxpayer files their TY 2017 tax return in January 2018 during the first week of the filing season, and the taxpayer's return is the tenth record in the file based on ascending TIN order.*

⁶ A seed number specifies a particular stream from a set of possible random number streams. Using a specific seed number in the same random number generator program generates the same set of pseudorandom numbers every time the program runs.

⁷ This hypothetical example is not drawn from any actual taxpayer's information.

- *NRP computer programs assess the specific characteristics of the tax return, identify the strata for the return, and assign the tax return the tenth random number (e.g., 0.00085231) from the random number file.*
- *The computer programs then compare the random number of 0.00085231 to the sampling rate of 0.0072271070 for that strata. As set forth in RAAS's sampling plan, the tax return is selected for the NRP audit because the assigned random number of 0.00085231 is less than or equal to the sampling rate of 0.0072271070 for that strata.*

Once a return is selected for an NRP audit, the computer program then assigns a sequential case number. The output file from Program 460-46, which contains the selected tax returns, is extracted each week and loaded into an audit case building system.

Results of Review

For TYs 2017 and 2019, RAAS selected samples of more than 10,900 tax returns for NRP audits, hereafter referred to as the original samples. Our assessment of the original sample selection process concluded that the IRS randomly selected TYs 2017 and 2019 tax returns for NRP audits.⁸ Specifically, we found that key decisions and information related to the tax return selection processes were determined by RAAS and provided to the contractor prior to the start of each year's respective filing season and prior to the selection of tax returns. Additionally, we found that computer programs 1) categorized returns in the correct strata; 2) correctly selected tax returns for audit based on criteria for inclusion in the sample selection file; and 3) did not include malicious code that would force the selection of specific taxpayers for an NRP audit. We confirmed that the processes and computer programs worked as designed, which reduces the ability to select specific taxpayers for an NRP audit.

In July 2022, IRS officials requested that a contractor, who was not involved with the TYs 2017 and 2019 sample selections, replicate the process. Specifically, the contractor replicated each week's original sample selection file through April 2018 and July 2020 for TYs 2017 and 2019, respectively. Once replicated, RAAS officials and the contractor performed a return-by-return comparison between the replicated files and the original sample selection files to verify the files matched. They concluded that the tax returns in the original samples were the same tax returns selected when the process was replicated using the respective seed numbers. We also compared the contractor's replicated weekly output files to the original weekly output files and, same as the IRS, we determined they matched.

However, due to resource constraints, RAAS reduced the original samples of more than 10,900 returns to 4,000 tax returns for both TYs 2017 and 2019, hereafter referred to as the subsamples. The inability of IRS management to timely forecast resource requirements resulted in RAAS deviating from the established return sample selection process when the subsamples were selected. Once the IRS decided to subsample returns from the original population, RAAS

⁸ With the exception of Form 1040-SR, *U.S. Tax Return for Seniors*, the IRS used the computer programs to select tax returns for audits as the returns were processed. According to the IRS, a defect in the contractor's TY 2019 computer code did not account for the newly introduced Form 1040-SR. As a result, approximately 770 Forms 1040-SR were selected after the returns were processed. We did not test whether the Forms 1040-SR were selected randomly as these returns were selected outside of the computer programs.

officials did not document the new seed numbers prior to initiating subsampling. Because the seed numbers were not selected independently and documented prior to initiating subsampling, there is a risk that the seed numbers used could have ensured that specific taxpayers from the original sample remained in the subsamples.

Actions Were Taken to Confirm Tax Returns Were Randomly Selected for Tax Years 2017 and 2019 National Research Program Audits

As noted previously, in July 2022, IRS officials requested that an independent contractor replicate each week's original sample selection file through April 2018 and July 2020 using the TYs 2017 and 2019 historical tax return files, respectively, as well as the computer programs developed and implemented at the time.⁹ Once the replicated files were created, the contractor and RAAS officials then performed a return-by-return comparison to the original weekly sample selection files. The contractor and RAAS officials stated that this comparison confirmed that the tax returns matched. Specifically, the same tax returns that were included in the original sample selection files matched the tax returns in the weekly replicated files. The following is a synopsis of the specific steps performed by the contractor to replicate the sample selection files along with any limitations encountered.

Review of computer program documentation

The contractor performed a line-by-line review of the original source code for Program 460-46 for TYs 2017 and 2019 NRP audits. The IRS stated that the review was performed to determine whether information (*i.e.*, TIN) was improperly coded in the programs that would result in a specific taxpayer being selected for an NRP audit. The contractor concluded that no specific taxpayer information was included in the original source code. The contractor responsible for replicating the sample walked us through Program 460-46 to identify and confirm this information, and we did not identify any sections with specific taxpayer information. Further, we performed an electronic search of these computer programs for 20 judgmentally selected tax returns to confirm that there were no TINs associated with these taxpayers improperly coded in the programs.¹⁰

The contractor also verified that no changes were made subsequent to the completion of the computer program used to select the sample, Program 460-46. We reviewed documentation confirming the dates the TYs 2017 and 2019 original source coding were completed (put into production). We also confirmed that no changes were made to three of the four programs once put into production. For the remaining program, the contractor updated the program several weeks into the respective processing years.¹¹ Our review of the updates made did not identify any changes that would materially impact or change the integrity of the selection process.

However, in our discussions with the IRS and the contractor, we were informed that as part of the replication the contractor identified a programming error included in the original source

⁹ The current contractor responsible for updating the computer programs run by the NRP is not the same contractor in place during the TYs 2017 and 2019 NRP audits. The current contractor took over responsibilities in September 2021.

¹⁰ A judgmental sample is a nonprobability sample, the results of which cannot be used to project to the population.

¹¹ A processing year is the calendar year in which the tax return or document is processed by the IRS.

coding. Although returns were randomly selected, the programming error assigned random numbers to returns in a manner that differed from the requirements in the NRP sampling plan. Specifically, the IRS intended to assign tax returns a random number from the random number file in sequential order. For example, once a number was assigned to a return in the sequential order from the random number file, it would not be assigned to another return. Because of the programming error, for most tax returns, the assignment of the random number erroneously restarted back at an earlier location in the random number file rather than continuing with the next number assignment. As a result, the population of tax returns selected for TYs 2017 and 2019 were not all the same returns that would have been selected if the program assigned random numbers as originally intended.

The contractor noted that this error dates back to the 2010 version of the program and went undetected. IRS management stated that they are working on addressing this programming error.

Replication of NRP sample and random number files

In an effort to mirror the original selection process and to confirm that the tax returns were randomly selected, the contractor used the original programs to select the replicated weekly files. Specifically, the contractor obtained the TYs 2017 and 2019 tax return files and used the same original source code programs to replicate the weekly sample selection of tax returns. When replicating the original samples, the contractor used the weekly output files from Program 460-41 because the original input files for the NRP computer programs were not available. The contractor's replicated samples reconciled to the original sample selection records through April 2018 and July 2020 for TYs 2017 and 2019, respectively. As previously noted, RAAS officials performed a one-for-one verification match to compare the replicated weekly output files to the original weekly output files. The same tax returns that were included in the original sample selection files matched the tax returns in the weekly replicated files. We also compared the contractor's replicated weekly output files to the original weekly output files and determined they matched.

The contractor stated that the programs used for the replication also used the original seed numbers provided by RAAS to develop the random number generation files for the respective years. The contractor used the same commercial analytics software package to generate the 200 million random numbers for each tax year. The contractor did note a limitation as the IRS did not retain a copy of the originally generated random number file because of file retention policies. As such, the contractor was unable to compare the replicated random number file to the original random number file. However, based on the results of the sample selection file (one-for-one match), the contractor is confident that the replicated random numbers mirrored the original random numbers as the same tax returns were selected on a weekly basis by strata.

The IRS Used Computer Programs to Randomly Select Tax Returns for the Original Samples for Tax Years 2017 and 2019

Our assessment of the original sample selection process concluded that the IRS randomly selected TYs 2017 and 2019 tax returns for NRP audits. Specifically, we confirmed that the processes and computer programs worked as designed. We determined that:

- Key decisions and information related to the tax return selection processes were determined by RAAS and provided to the contractor prior to the start of the respective filing seasons and prior to selecting tax returns, which reduces the ability to select specific taxpayers for an NRP audit.
- Computer programs categorized returns in the correct strata. We reviewed a judgmental sample of 20 returns, 10 each from one weekly cycle in TYs 2017 and 2019. We found that the computer programs categorized tax returns in accordance with the sampling plan.
- Computer programs correctly selected tax returns for an audit based on criteria for inclusion in the sample selection file. Our review of a judgmentally selected strata for one weekly cycle in both TYs 2017 and 2019 found that the programs correctly compared the random numbers assigned to these tax returns to the sampling rate and correctly selected returns for an NRP audit.
- Computer programs did not include malicious code that would force the selection of specific taxpayers for an NRP audit. As previously mentioned, our electronic search of the computer programs found that there were no TINs in these programs for the judgmental sample of 20 selected tax returns. To further ensure that the computer programs did not force the selection of specific taxpayers, the contractor ran the TY 2017 computer program using a different seed number. The contractor's review of weekly returns through April 2018 found that a different mix of taxpayers were selected when the seed number was changed.
- Tax accounts associated with the taxpayers included in the sample selection files for TYs 2017 and 2019 generally had the appropriate audit selection code indicating the return was selected for an NRP audit.¹²

In addition, we also discussed with the 49th Commissioner¹³ the extent, if any, of the Commissioner's involvement in the NRP tax return selection process. The Commissioner did not start his term until October 2018, about eight months after the IRS began selecting TY 2017 returns for an NRP audit. In response to our questions, the Commissioner stated that he had no conversations with the current or prior Presidential administration relative to the NRP. The Commissioner further stated that he was not involved in any of the sample selections or in directly or indirectly influencing who would be selected. Additionally, the Commissioner stated that he never directed anyone in the IRS to add any specific taxpayers to, or remove any specific taxpayers from, NRP samples.

We also discussed the NRP with the Deputy Commissioner for Operations Support (Deputy Commissioner) who also stated that, at no point did the 49th Commissioner influence or attempt to influence the selection of any specific taxpayers. The Deputy Commissioner further stated that in November 2017, the IRS realigned RAAS to no longer report to the Office of the Commissioner. This restructuring occurred prior to the start of the 49th Commissioner's term

¹² IRS officials stated that there are instances in which the NRP audit selection code does not post to tax accounts associated with the taxpayers included in the sample selection files. For example, international returns and returns for taxpayers located in combat zones are exempt from an NRP audit.

¹³ Charles P. Rettig.

and prior to the selection of TY 2017 audits. According to the Deputy Commissioner, RAAS was restructured in part to eliminate the appearance of any potential political influence from the Office of the Commissioner.¹⁴

Finally, our discussions with key RAAS officials identified nothing that contradicts the statements made by the Commissioner and Deputy Commissioner. Specifically, RAAS officials stated that neither the Commissioner nor any other IRS management official directed them to include specific taxpayers in the population selected for either a TY 2017 or TY 2019 NRP audit.

Seed Numbers Were Not Independently Selected Prior to Subsampling

According to RAAS officials, for both TYs 2017 and 2019, IRS executives directed RAAS to reduce the original sample size because of the Small Business/Self-Employed Division’s resource constraints. Figure 3 details the original sample selection volumes as well as the dates on which RAAS officials were directed to reduce the overall sample size. For TY 2017, subsampling occurred twice. For TY 2019, there was one subsample.

Figure 3: Time Frame for Selecting TYs 2017 and 2019 Subsamples and Subsample Sizes

TY	Original Sample Size	First Subsample		Second Subsample	
		Decision Date of Reduction	Sample Size at First Reduction	Decision Date of Reduction	Sample Size at Second Reduction
2017	11,581	May 2019	8,607	November 2019	4,000
2019	10,954	December 2020	4,000	N/A	N/A

Source: IRS documentation and TIGTA analysis of IRS sample selection and subsampling files for TYs 2017 and 2019.

The inability of IRS management to timely forecast available resources resulted in RAAS deviating from its established return sample selection processes and procedures. Once the IRS decided to subsample returns from the original population, RAAS officials did not document the new seed numbers prior to initiating subsampling. Although management was involved during subsampling, we determined that [REDACTED]

[REDACTED]¹⁵ Because the seed numbers were not selected independently and documented prior to initiating subsampling, there is a risk that the seed numbers used could have ensured that specific taxpayers from the original sample remained in the subsamples.

¹⁴ According to the RAAS reorganization memorandum dated November 30, 2017, the realignment was “anticipated to achieve: improved organizational structure, better alignment with interdependent organizations; entrenchment of RAAS disciplines into business operations; accountability under the DCOS [Deputy Commissioner for Operations Support] for the RAAS function; increased insight for RAAS into the budget and investment process; and increase[d] opportunities for collaborative planning.”

¹⁵ RAAS officials provided e-mails and meeting notes showing evidence of management involvement during subsampling.

To ensure that the seed numbers selected were, in fact, used to identify the tax returns included in the subsamples, we met with RAAS to replicate TYs 2017 and 2019 subsamples. We observed a RAAS official run the subsample programs, which included the seed numbers that were used to select the subsample populations. We then compared the identified tax returns in the replicated subsample to those in the original subsample. Our match concluded that the seed numbers identified were, in fact, used to select the subsamples.

In response to our concerns regarding the subsampling seed number selection, documentation provided by RAAS officials acknowledged that the selection of the seed number used for the subsampling could be done "in a more public fashion." Specifically, RAAS officials concluded that to avoid the perception of "gaming" but maintain the reproducibility of the results, the team could select and document the seed number(s) for subsampling in a more transparent manner, such as in the presence of external stakeholders. Although we did not identify misconduct during our review, TIGTA is taking additional steps to assess the process used to select the seed numbers.

The IRS continued to audit some taxpayers who were ultimately excluded from the subsample

As previously discussed, RAAS was directed twice to reduce the TY 2017 sample. RAAS was unaware of the need to subsample until months after returns were already selected and sent to the Small Business/Self-Employed Division for audit initiation. According to the IRS, 862 taxpayers from the original TY 2017 sample continued to be audited to address already identified noncompliance even though they were ultimately excluded from the final subsample of 4,000 taxpayers. Information provided by the IRS indicates that most of the audits had been initiated prior to the reduction in the sample size. Nevertheless, these audits continued even though the justification to reduce the original sample size was because of limited resources. IRS officials confirmed that for TY 2019 NRP audits, the IRS did not provide the Small Business/Self-Employed Division the tax returns for audit until the subsample was completed.

Appendix I

Detailed Objective, Scope, and Methodology

The overall objective of this review was to determine if the IRS randomly selected individual tax returns for TYs 2017 and 2019 NRP audits. To accomplish our objective, we:

- Reviewed the Internal Revenue Manual, IRS memoranda, requested documents, and other guidelines, as applicable, to gain an understanding of how RAAS uses the NRP to statistically sample individual income tax returns to meet IRS objectives.
- Interviewed appropriate IRS officials and reviewed documents to determine the key controls of the NRP, and if there were opportunities to manipulate the results.
- Reviewed a judgmental sample of 20 total returns in TYs 2017 and 2019 to determine if the computer programs categorized tax returns in accordance with the sampling plan.¹
- Reviewed a judgmentally selected strata for one weekly cycle in both TYs 2017 and 2019 to determine if the random numbers assigned to these tax returns were within the sampling rate criteria for selection for an NRP audit.
- Reviewed system documentation and logs related to TYs 2017 and 2019 computer programs in order to determine 1) what changes, if any, were made to computer programs after the start of processing tax returns for each year and 2) if there was a TIN associated with 20 judgmentally selected tax returns improperly coded in these programs.
- Reviewed and verified the IRS's efforts to replicate the sample records through April 2018 and July 2020 for TYs 2017 and 2019, respectively.
- Observed a RAAS official run the subsampling programs and compared the results of the replicated subsample to those in the original subsample to determine if the results matched.
- Performed an analysis of Individual Master File² data to verify that tax accounts associated with the taxpayers included in the sample selection files for TYs 2017 and 2019 had the appropriate audit selection code indicating the return was selected for an NRP audit.

Performance of This Review

This review was performed with information obtained at RAAS Headquarters in Washington, D.C., during the period July through October 2022. We conducted this inspection in accordance with the Council of the Inspectors General for Integrity and Efficiency's Quality Standards for Inspection and Evaluation.

¹ A judgmental sample is a nonprobability sample, the results of which cannot be used to project to the population.

² The Individual Master File is the IRS database that maintains transactions or records of individual tax accounts.

Major contributors to the report were James Douglas, Director; Frank O'Connor, Supervisory Evaluator; Malissa Livingston, Lead Evaluator; Meghann Noon-Miller, Senior Evaluator; and Matthew Pham, Evaluator.

Validity and Reliability of Data From Computer-Based Systems

We performed tests to assess the reliability of data from the IRS's Individual Master File system. We evaluated the data by 1) performing electronic testing of required data elements, 2) reviewing existing information about the data and the system that produced them, and 3) interviewing agency officials knowledgeable about the data. We determined that the data were sufficiently reliable for purposes of this report.

Management's Response to the Draft Report

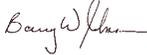


RESEARCH, APPLIED ANALYTICS
AND STATISTICS

DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
WASHINGTON, DC 20224

November 10, 2022

MEMORANDUM FOR RUSSELL P. MARTIN
DEPUTY INSPECTOR GENERAL FOR INSPECTIONS AND
EVALUATIONS

FROM: Barry W. Johnson  Date: 2022.11.10
10:12:12 -05'00'
Deputy Chief Data and Analytics Officer - Statistics

SUBJECT: Draft Audit Report – National Research Program Tax Return
Selection Process for Tax Years 2017 and 2019
(Audit # IE-22-014)

Thank you for the opportunity to review your draft report titled, "National Research Program Tax Return Selection Process for Tax Years 2017 and 2019," evaluation number IE-22-014. The IRS Office of Research, Applied Analytics, and Statistics (RAAS) is the Service's centralized research and analytic organization. One of RAAS' responsibilities is to lead the National Research Program (NRP), which is an examination (audit) program that selects a stratified random sample of individual income tax returns to gather representative data on compliance with America's tax laws. One purpose of this work is to calibrate our audit selection models, which helps to avoid burdening compliant taxpayers by focusing IRS resources on examining taxpayers who are more likely to be non-compliant. The NRP audits are also used for estimating the tax gap and improper payment rates.

We appreciate your acknowledgment in the report that RAAS has established robust processes to ensure that taxpayers are randomly sampled for NRP audits. The report accurately states that a programming error in the application of the random number file existed undetected since 2010, but it also acknowledges that the initial return selections were, in fact, both random and reproducible. IRS leadership reduced the sample size, and the report reflects that RAAS conducted subsampling to reduce the number of NRP audits but did not document the subsampling seed numbers transparently in advance (as it did for the original random sampling). While the report posits that it's theoretically possible the new subsampling seed number could have been selected to ensure certain returns already randomly selected remained in the subsample, the report also states that there was no evidence of employee misconduct or improper selections in 2017 or 2019.

SB/SE continuously forecasts and assesses resource needs for NRP and other exam priorities. Prior to and during the sample selection of the tax year 2017 and 2019 NRP studies, IRS was experiencing long-term resource constraints, and this funding shortfall resulted in significant pressure on a shrinking number of examination staff. For the tax years in question, the number of staff hours needed to complete all work greatly exceeded the staff hours available. Leadership ultimately made the difficult decision regarding the allocation of resources between NRP and other exam priorities. This resulted in reductions to the NRP sample size for the subject tax years to preserve resources for other mission priorities. These reductions required RAAS to deviate from established return sample selection processes and procedures. RAAS staff demonstrated considerable flexibility and adaptability under tight timelines to reduce the sample size in a way that preserved randomness and maximized IRS' ability to fulfill the study objectives despite the resource constraints. RAAS leadership has already implemented enhancements to internal processes and documentation that will assure procedures are in place to provide additional transparency and oversight should subsampling be pursued in the future.

If you have any questions, you may contact me directly or Peter Rose, Director for Knowledge Development and Application, at (202) 803-9524.

Appendix III

Abbreviations

IRS	Internal Revenue Service
NRP	National Research Program
RAAS	Research Applied Analytics and Statistics
TIGTA	Treasury Inspector General for Tax Administration
TIN	Taxpayer Identification Number
TY	Tax Year



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