

**The Selection of Earned Income Tax Credit  
Returns for Examination Can Be Improved to  
Further Prevent Erroneous Payments**

**October 2003**

**Reference Number: 2004-40-004**

**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.**



DEPARTMENT OF THE TREASURY  
WASHINGTON, D.C. 20220

INSPECTOR GENERAL  
for TAX  
ADMINISTRATION

October 30, 2003

MEMORANDUM FOR COMMISSIONER, WAGE AND INVESTMENT DIVISION

*Gordon C. Milbourn III*

FROM: Gordon C. Milbourn III  
Assistant Inspector General for Audit (Small Business and  
Corporate Programs)

SUBJECT: Final Audit Report - The Selection of Earned Income Tax Credit  
Returns for Examination Can Be Improved to Further Prevent  
Erroneous Payments (Audit # 200340039)

This report presents the results of our review of the Internal Revenue Service's (IRS) selection of Earned Income Tax Credit (EITC) cases for examination. The overall objective of our review was to determine whether the IRS' process for selecting EITC cases for examination is providing the best effect on compliance and fairness to taxpayers. Specifically, we determined if the Dependent Database<sup>1</sup> examination case selection process for EITC returns results in the greatest benefit at the least cost (cost-benefit)<sup>2</sup> while ensuring taxpayers are treated fairly and uniformly under the law.

The EITC is a major Federal Government effort to assist the working poor. The IRS has the responsibility for administering the EITC, which is a refundable credit available to taxpayers who file returns with certain earned income. Historically, the EITC Program has been vulnerable to high rates of noncompliance (overclaims).<sup>3</sup> Based on an IRS report, an estimated \$8.5 to \$9.9 billion (27 to 32 percent) of the estimated \$31.3 billion in EITC claims made by taxpayers for Tax Year 1999 should not have been paid.

The mission of the EITC Program is to ensure that eligible taxpayers receive the EITC and that unsubstantiated claims are eliminated. One of the major goals of the EITC

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<sup>1</sup> The Dependent Database is a computer system used to, among other things, identify and select for examination tax returns with possible erroneous EITC claims. Selection is based upon criteria developed into a comprehensive set of rules used to score the returns.

<sup>2</sup> Cost-benefit is defined as providing the most benefit to the Federal Government at the least cost (i.e., selecting examinations that use the least resources (costs) while protecting the most revenue).

<sup>3</sup> An EITC overclaim is the amount of the EITC claimed by a taxpayer above the amount to which he or she is entitled.

Program is to “implement a balanced compliance program to increase voluntary compliance.” The Dependent Database examination case selection process is part of that balanced compliance program and is focused on selecting taxpayers whose EITC claims based on qualifying children may be unsubstantiated.

The IRS has a good process for evaluating the results of the Dependent Database case selection process that allows for necessary adjustments to be made. In addition, the types of returns selected for examination through the Dependent Database process are representative of taxpayers who claim the EITC based on qualifying children. However, the IRS cannot determine if the selection process ensures that resources are being used to provide the greatest cost-benefit because it does not use cost data and yield in the evaluation of the case selection process. Use of cost-benefit data in its evaluation process would help assure the IRS that its selection process provides the most productive combination of returns for examination.

We recommended that the Commissioner, Wage and Investment (W&I) Division, complete an analysis of closed Dependent Database examination cases to determine if relationships exist among direct examination time,<sup>4</sup> rules identified, and disposition of the examinations. If a relationship exists, cost-benefit data based on this relationship should be incorporated into the criteria used to score tax returns. If no relationship exists, an average cost of examinations should be used to conduct the cost-benefit analysis. The Commissioner, W&I Division, should also incorporate the cost-benefit analysis into the Dependent Database Risk-Based Scoring Model planned for implementation in January 2004.

Management’s Response: IRS management agreed with our recommendations. The Director, Reporting Compliance, W&I Division, will analyze Fiscal Year (FY) 2003 Dependent Database closed case data and attempt to group returns by rules broken and assign costs to those groups. The Director, Reporting Compliance, W&I Division, also will incorporate a cost-benefit analysis into the Dependent Database selection process; however, IRS management stated that they would be unable to do so until January 2005. Although IRS management agreed with our recommendations, they did not concur with our outcome measure of \$20.9 million in additional overclaims that could have been protected. The IRS stated that it needs to conduct a comprehensive analysis using complete FY 2003 data to make this determination. We agree that we did not use complete FY 2003 data to calculate our outcome. However, the outcome was calculated using a significant portion of the FY 2003 data. We also used cost and examination outcome data provided by the IRS. Therefore, we believe our calculation of the additional overclaims that could be protected is reasonable. Management’s complete response to the draft report is included as Appendix VII.

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<sup>4</sup> Direct examination time is the time that can be directly applied to the examination of a return and does not include time for overhead activities such as mailing, receiving, and delivering correspondence related to the examination.

Copies of this report are also being sent to the IRS managers who are affected by the report recommendations. Please contact me at (202) 622-6510 if you have questions or Michael R. Phillips, Assistant Inspector General for Audit (Wage and Investment Income Programs), at (202) 927-0597.

**The Selection of Earned Income Tax Credit Returns for Examination  
Can Be Improved to Further Prevent Erroneous Payments**

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## The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments

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### Background

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The Earned Income Tax Credit (EITC), a major Federal Government effort to assist the working poor, is a refundable credit available to taxpayers who file returns with certain earned income. The Internal Revenue Service (IRS) is responsible for administering the EITC.

The Congress has long been concerned with the administration of the EITC Program. The IRS estimated that between \$8.5 and \$9.9 billion (27 to 32 percent) of the \$31.3 billion in EITC claimed for Tax Year (TY) 1999 was in error.<sup>1</sup> One of the main causes for these errors was taxpayers claiming children who did not meet the qualifications for the EITC. Children used by taxpayers to qualify for the EITC must meet relationship, age, and residency tests.

In an attempt to address EITC errors, the Congress passed the Taxpayer Relief Act of 1997 (TRA 97),<sup>2</sup> which provided a means for the IRS to improve its examination selection process. The TRA 97 includes a provision that gives the Department of the Treasury access to data collected by the Department of Health and Human Services (HHS).

The IRS developed a computer system, known as the Dependent Database, to incorporate the data acquired from the HHS into the processing of individual tax returns. The IRS also incorporated criteria from its original examination selection process, known as the Electronic Fraud Detection System, which uses common characteristics from past erroneous EITC claims as the basis for selecting tax returns for examination.

The IRS uses the Dependent Database to identify and select for examination those tax returns with possible erroneous EITC claims (EITC overclaims).<sup>3</sup> During the examination selection process, the Dependent Database scoring program first analyzes tax returns that have claimed at least one EITC-qualifying child or dependent child. Using data from several sources, it analyzes each tax return for criteria that

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<sup>1</sup> IRS report titled *Compliance Estimates for Earned Income Tax Credit on 1999 Returns*, dated February 28, 2002.

<sup>2</sup> Pub. L. No. 105-34, 111 Stat. 961 §§ 1090(a) and 1090(b).

<sup>3</sup> An EITC overclaim is the amount of the EITC claimed by a taxpayer above the amount to which he or she is entitled.

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indicate the taxpayer might not be eligible for the EITC and assigns a numeric value to each criterion. These criteria were developed into a comprehensive set of rules used to score the returns. The Dependent Database then produces an overall score for each return based on the rules that apply to that return.

Based on resources available to conduct examinations, the IRS selects certain types and quantities of returns for examination to verify taxpayers' eligibility for the EITC. Appendix V provides additional information on the Dependent Database scoring process.

Once the examination selection process is complete, returns selected by the Dependent Database are examined before a refund is sent to the taxpayer. This is known as a pre-refund examination. The IRS Wage and Investment (W&I) Division conducts examinations of returns on which taxpayers claimed wages to qualify for the EITC, and the Small Business/Self-Employed (SB/SE) Division conducts examinations of returns on which taxpayers claimed self-employment income to qualify for the EITC.

For the most part, EITC examinations are handled as correspondence examinations (i.e., through the mail). Correspondence examinations can be completed in a few hours, are limited in scope to a few issues, and do not include a review of detailed accounting records.

The IRS plans to expand its use of the Dependent Database to include selecting taxpayers who must certify their eligibility for the EITC either before the return is filed or at the time the return is filed for TY 2003. It is also studying the feasibility of developing rules to identify other issues, such as charitable deductions, education credits, child credits, and child care credits, to select non-EITC returns for examination.

We conducted this audit to determine whether the IRS' process for selecting EITC claims for examination provides the best effect on compliance and fairness to taxpayers. Specifically, we determined if the Dependent Database examination case selection process for EITC returns results

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in the greatest cost-benefit<sup>4</sup> while ensuring taxpayers are treated fairly and uniformly under the law. We did not determine if the rules being used by the Dependent Database to select returns are the most efficient, nor did we determine if the Database uses all information available to the IRS when scoring and selecting returns for examination.

This audit was performed between February and June 2003. The review included visits to the Office of Compliance and the EITC Program Office in the W&I Division Headquarters in Atlanta, Georgia, and the Office of Compliance in the SB/SE Division Headquarters in Washington, D.C. The audit was conducted in accordance with *Government Auditing Standards*. Detailed information on our audit objective, scope, and methodology is presented in Appendix I. Major contributors to the report are listed in Appendix II.

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**The Examination Selection  
Process Is Strategically Aligned  
With the Goals of the Program  
and Is Evaluated Regularly**

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The Dependent Database examination selection process supports the mission of the IRS EITC Program and provides a balanced Examination inventory. The IRS also has a good process to evaluate whether the selection process chose the desired types of cases and to make any necessary changes.

### **The examination selection process focuses on the goals and strategies of the EITC Program**

The mission of the EITC Program is to ensure that eligible taxpayers receive the EITC and unsubstantiated claims are eliminated. One of the major goals of the EITC Program is to “implement a balanced compliance program to increase voluntary compliance.” The IRS also has a strategy to develop an enhanced initiative to reduce EITC overclaims by developing cross-divisional Examination strategies that quickly react to changing EITC compliance trends.

IRS employees explained that the goals of the Dependent Database examination selection process are to better identify and select noncompliant EITC returns for examination, provide a balance between the no-change rate and agreed

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<sup>4</sup> Cost-benefit is defined as providing the most benefit to the Federal Government at the least cost (i.e., selecting examinations that use the least resources (costs) while protecting the most revenue).



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rate,<sup>5</sup> and provide coverage of high-risk areas of EITC claims. This supports the mission of the EITC Program to ensure that eligible taxpayers receive the EITC and unsubstantiated claims are eliminated. Selection of the EITC examination case workload through the Dependent Database also results in a cross-divisional Examination program providing returns for examination by both the SB/SE and W&I Divisions.

Analyses of the Dependent Database and EITC claimant population showed the returns selected reflect the characteristics that the IRS has identified as being potentially erroneous. In addition, the returns selected reflect the characteristics of the overall population of taxpayers that claimed the EITC. Both support the IRS' goals to better identify and select noncompliant EITC returns for examination and to provide coverage of high-risk areas of EITC claims.

In its evaluation of compliance on TY 1999 returns with EITC claims, the IRS determined that the largest area of noncompliance was taxpayers who claimed qualifying children that they were not entitled to claim. The Dependent Database is designed to detect this area of noncompliance. An analysis of the IRS Individual Master File<sup>6</sup> for TYs 2000 and 2001 showed that the characteristics of the rules applied during the Dependent Database scoring process are representative of the types of errors made by taxpayers claiming qualifying children when claiming the EITC.

In addition, returns selected for examination through the Dependent Database process generally reflect the makeup of the EITC-qualifying child population. In TYs 2000 and 2001, over 98 percent of the returns filed claiming an EITC-qualifying child also claimed a dependent. For these 2 years, over 97 percent of the returns selected using the

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<sup>5</sup> The no-change rate is the percentage of examinations that did not result in changes to the tax returns. The agreed rate is the percentage of examinations in which taxpayers agreed with the IRS' adjustments to their tax returns.

<sup>6</sup> The IRS database that maintains transactions or records of individual tax accounts.

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Dependent Database claimed an EITC-qualifying child and a dependent.

Although the IRS selects returns that reflect the majority of the EITC-qualifying child population, it also selects returns in categories that have been identified as having a historically high risk for noncompliance (i.e., claiming the EITC when the taxpayer does not qualify). Two categories of return selection include income and filing status issues. Selection of examination case workload is also dependent on the number of resources available to conduct examinations.

### **The examination selection process is regularly evaluated and changes are made when necessary**

The IRS periodically evaluates and refines the Dependent Database scoring and selection processes. Annually, the IRS conducts research on the results of examinations from each tax return processing year and uses these results to determine if the Dependent Database is selecting the desired types of returns for examination. The IRS also monitors and modifies the Dependent Database examination selection process as the filing season<sup>7</sup> progresses.

The IRS uses its annual analyses to make enhancements to the Dependent Database examination selection process. Because examination cases can take several months to complete, changes to the selection process for an upcoming processing year are based on examination results from 2 years prior. For example, enhancements to the Dependent Database process for TY 2002 returns were based on the IRS' analysis of examinations of TY 2000 returns.

The IRS uses its analysis in an attempt to continually improve the Dependent Database examination selection process. In addition to modifying the scoring and selection criteria to choose more returns that break multiple rules, the IRS has also:

- Initiated a study of taxpayers whose returns have broken rules in multiple years but were not selected for examination.

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<sup>7</sup> The period from January through mid-April when most individual income tax returns are filed.

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### Additional Performance Data Are Needed to Ensure the Examination Selection Process Is Selecting the Most Productive Returns for Examination

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- Initiated a project, called the Risk-Based Scoring Model, to better align the number of points a return receives in the Dependent Database scoring process to the likelihood that the EITC or tax liability would be adjusted as a result of an examination.

While the IRS has a good process for evaluating the Dependent Database examination selection process to determine if it is choosing the desired types of returns, the IRS could improve the process by also considering the costs directly associated with and the yield<sup>8</sup> expected from examining the returns (cost-benefit). This would allow the IRS to identify which examinations provide the best cost-benefit and are the most productive (i.e., which examinations cost the least to work while protecting the most revenue). When selecting examinations, the IRS takes into consideration the following factors:

- The historical no-change rate and the agreed rate on tax returns examined for each rule in the scoring process.
- The balance in coverage among the various selection criteria and types of returns being selected.
- The historical compliance patterns for different types of returns.

In addition, the IRS generally incorporates a tolerance into its EITC examination selection process. Specifically, the IRS does not select for examination returns on which the EITC falls below a certain dollar amount.

Currently, IRS systems do not adequately capture the costs or time to examine specific types of returns. Both of these factors are needed to determine how much it costs the IRS to examine specific types of returns. The IRS' financial tracking systems do not adequately capture specific cost data related to conducting various types of examinations, including EITC examinations selected through the Dependent Database. Its Audit Information Management System (AIMS), the automated system the IRS uses for examination case workload management, does capture

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<sup>8</sup> Yield refers to the dollar amount of adjustments made to the tax returns that resulted in EITC overclaims protected.

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examination time applied directly to examining tax returns. However, the IRS does not believe the time captured on the AIMS is a true measure of the time it takes IRS employees to examine tax returns because examiners track their time only in 10-minute intervals. Also, the IRS considers clerical time a key factor in processing cases; however, the AIMS does not track this time.

The IRS stated that should it be able to adequately track the time spent examining returns, time from prior closed examinations still could not be used to predict how much time it will take to examine returns with the same issues. Therefore, it may not be able to introduce cost and time into the examination selection process.

We agree that there are many factors that influence how long it takes to complete an examination of tax returns, including, for example, the number of issues or questions on the returns and taxpayer behavior. Taxpayer behavior is a significant factor in Examination cases. Specifically, IRS examiners work fewer hours examining a tax return when taxpayers do not respond, or do not respond with adequate support for documents requested, than they do when taxpayers make multiple contacts with the IRS or the examiners have to ask for additional information. In addition, taxpayer behavior cannot always be directly linked to issues or the final resolution of cases (i.e., no-change, agreed, disagreed, or with no response from the taxpayer).

However, the IRS does not know if there is any relationship among the time to examine returns, the issue or number of issues questioned on returns, or the disposition of the examination because it has not done an analysis to determine this relationship. This type of analysis might allow the IRS to use historical data to introduce cost-benefit results into the overall scoring for EITC returns.

Although the IRS does not capture specific cost data for the different types of examinations, the IRS was able to provide us with an estimated average cost of \$185.32 for each EITC examination. This amount includes the cost to conduct all EITC examinations, including pre- and post-refund EITC

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examinations, as well as those examinations conducted through other EITC compliance programs.<sup>9</sup>

Using these estimated cost data, we conducted an analysis comparing the cost and yield of the TY 2001 tax returns selected by the Dependent Database for examination between January and August 2002. Our analysis showed that the IRS could have protected approximately \$20.9 million in additional erroneous EITC claims if it had incorporated examination costs and yield into its examination selection process. Detailed information on our analysis can be found in Appendix VI.

General cost data provided by the IRS show that it cost the IRS approximately \$31 million to conduct EITC examinations of TY 2001 returns selected by the Dependent Database process from January to August 2002. Program-specific cost-benefit data would provide the IRS better assurance that its selection process results in the use of those funds to achieve the best outcome from its Dependent Database examinations.

Results of a cost-benefit analysis should be part of the criteria for the rules used by the Dependent Database to score returns for examination selection. Adding cost-benefit data into the criteria used for the rules would not only provide the IRS a better means to determine if it is selecting the cases with the best potential for protecting EITC overclaims, it would also provide the IRS an effective method for integrating its budget with its program performance. The Government Performance and Results Act of 1993 (GPRA)<sup>10</sup> and *The President's Management Agenda, Fiscal Year 2002*,<sup>11</sup> both require Federal Government agencies to link their budgets and their evaluations of program performance. In addition, the General Accounting Office has reported the need to develop reliable cost-benefit data to estimate the tax revenue

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<sup>9</sup> Pre-refund examinations account for the majority of EITC examinations.

<sup>10</sup> Pub. L. No. 103-62, 107 Stat. 285 (codified as amended in scattered sections of 5 U.S.C., 31 U.S.C., and 39 U.S.C.).

<sup>11</sup> Executive Office of the President, Office of Management and Budget, *The President's Management Agenda, Fiscal Year 2002* (Washington, D.C.: August 2001).

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collected by the IRS for each dollar spent pursuing these amounts.<sup>12</sup> The Treasury Inspector General for Tax Administration has also reported the need to develop performance measures linking results to the funds requested.<sup>13</sup>

### Recommendations

The Commissioner, W&I Division, should:

1. Complete an analysis of the historical Dependent Database examination data to determine if there is a relationship among the direct examination time, rules identified, and disposition of examinations. If there is a relationship, cost-benefit data should be incorporated into the criteria used in the rule score for the Dependent Database case selection process. Absent a relationship, an average cost of examinations should be used to conduct a cost-benefit analysis to incorporate into the rule score.

Management's Response: The Director, Reporting Compliance, W&I Division, will analyze Fiscal Year (FY) 2003 Dependent Database closed case data and attempt to group returns by rules broken and assign costs to those groups.

2. Incorporate a cost-benefit analysis into the Dependent Database Risk-Based Scoring Model planned for implementation in January 2004.

Management's Response: The Director, Reporting Compliance, W&I Division, will incorporate a cost-benefit analysis into the Dependent Database selection process; however, IRS management stated that it would be unable to do so until January 2005.

The IRS did not agree with our assessment that an additional \$20.9 million in overclaims could have been

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<sup>12</sup> *Status of GAO Recommendations from Prior IRS Financial Audits and Related Management Reports* (GAO-03-655, dated May 2003).

<sup>13</sup> *The Internal Revenue Service Should Continue to Develop Its Measures Program to Ensure That Its GPRA Measures Cover All of the Major Components of Tax Administration* (Reference Number 2002-10-097, dated May 2002).

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protected. The IRS stated it needs to conduct a comprehensive analysis using complete FY 2003 data, which are not yet available, to make this determination.

Office of Audit Comment: We agree that we did not use complete FY 2003 data to compute the \$20.9 million in overclaims that could have been protected. Complete data were not available at the time of our review. However, our calculation was based on a significant portion of the year's data. Our estimate was also calculated using cost and examination outcome data provided by the IRS. Therefore, we believe our calculation of the additional overclaims that could be protected is reasonable.

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### Appendix I

#### Detailed Objective, Scope, and Methodology

The overall objective of this review was to determine whether the Internal Revenue Service's (IRS) process for selecting Earned Income Tax Credit (EITC) cases for examination is providing the best effect on compliance and fairness to taxpayers. Specifically, we determined if the Dependent Database<sup>1</sup> examination case selection process for EITC returns results in the greatest benefit at the least cost (cost-benefit)<sup>2</sup> while ensuring taxpayers are treated fairly and uniformly under the law.

We conducted the following tests to accomplish the objective:

- I. To determine if the Dependent Database examination selection process focuses on the goals and strategies established by the EITC Examination Program, we identified the IRS' overall goals for the EITC Examination Program. We also interviewed personnel in the Office of Compliance and the EITC Program Office in the Wage and Investment Division Headquarters and the Office of Compliance in the Small Business/Self-Employed Division to determine the Dependent Database examination case selection program's goals.
- II. To determine if the IRS has an effective process to evaluate the results of its Dependent Database examination selection process and make necessary adjustments to the process, we identified and reviewed analyses performed by the IRS to evaluate the results of EITC examinations. We also determined how the IRS calculates program measures and results, including the no-change rate<sup>3</sup> and EITC overclaims<sup>4</sup> protected. We determined the process used to implement changes to the Dependent Database examination selection process.
- III. To determine if the Dependent Database examination selection process ensures resources are being used to provide a balanced compliance program (i.e., the greatest cost-benefit while ensuring taxpayers are treated fairly and uniformly under the law), we:
  - A. Determined whether the Dependent Database examination selection process could provide a greater cost-benefit by analyzing the Tax Year (TY) 2001 data for EITC examination closed cases on the Dependent Database. We obtained related

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<sup>1</sup> The Dependent Database is a computer system used to, among other things, identify and select for examination tax returns with possible erroneous EITC claims. Selection is based upon criteria developed into a comprehensive set of rules used to score the returns.

<sup>2</sup> Cost-benefit is defined as providing the most benefit to the Federal Government at the least cost (i.e., selecting examinations that use the least resources (costs) while protecting the most revenue).

<sup>3</sup> The no-change rate is the percentage of examinations that did not result in changes to the tax returns.

<sup>4</sup> An EITC overclaim is the amount of the EITC claimed by a taxpayer above the amount to which he or she is entitled.



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information from the copy of the Audit Information Management System<sup>5</sup> at the Treasury Inspector General for Tax Administration Data Center Warehouse. We stratified the closed cases by various rule groupings and type of income claimed and determined how the IRS calculates the cost of conducting Dependent Database EITC examinations. We computed the cost-benefit for each group of returns and performed analyses to vary the number of returns selected per group to optimize the benefit.

- B. Determined whether the Dependent Database examination selection process is ensuring taxpayers are treated fairly and uniformly under the law by analyzing and comparing the characteristics of taxpayers selected for examination to the characteristics of the overall population of taxpayers that claimed the EITC for TYs 2000 and 2001.

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<sup>5</sup> The Audit Information Management System is an automated computer system used for examination case workload management.

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**Appendix II**

**Major Contributors to This Report**

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**Appendix III**

**Report Distribution List**

Commissioner C  
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Commissioner, Small Business/Self-Employed Division SE:S  
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Director, Strategy and Finance, Wage and Investment Division SE:W:S  
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    Chief, Customer Liaison, Small Business/Self-Employed Division SE:S:COM

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### Appendix IV

#### Outcome Measures

This appendix presents detailed information on the measurable impact that our recommended corrective actions will have on tax administration. This benefit will be incorporated into our Semiannual Report to the Congress.

##### Type and Value of Outcome Measure:

- Funds Put to Better Use – Potential; \$20.9 million additional Earned Income Tax Credit (EITC) overclaims<sup>1</sup> protected for Tax Year 2001 returns (see page 6).

##### Methodology Used to Measure the Reported Benefit:

This outcome represents the projected additional EITC overclaims protected if the Internal Revenue Service (IRS) incorporated cost-benefit data<sup>2</sup> into its evaluation of the selection of returns claiming the EITC using the Dependent Database.<sup>3</sup>

The IRS used the Dependent Database scoring and selection program to select 168,290 returns for EITC pre-refund examinations from January through August 2002, protecting an estimated \$419.6 million in EITC overclaims.

By incorporating cost-benefit into its selection criteria, the Dependent Database scoring and selection program's selection of 168,290 returns for examination could have protected an estimated \$440.5 million in EITC overclaims (\$20.9 million more in estimated EITC overclaims) during the same processing period.

To develop a cost-benefit selection model using return on investment (ROI) analysis:

- A total of 75,165 closed EITC examination cases were reviewed:
  - The examined returns were stratified into groups based on Dependent Database rule(s) broken.
  - The ROI per return group was computed by dividing the EITC overclaims protected in each group by the cost to examine the group. An average examination cost of \$185.32 provided by the EITC Program Office was used in this computation.

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<sup>1</sup> An EITC overclaim is the amount of the EITC claimed by a taxpayer above the amount to which he or she is entitled.

<sup>2</sup> Cost-benefit is defined as providing the most benefit to the Federal Government at the least cost (i.e., selecting examinations that use the least resources (costs) while protecting the most revenue).

<sup>3</sup> The Dependent Database is a computer system used to, among other things, identify and select for examination tax returns with possible erroneous EITC claims. Selection is based upon criteria developed into a comprehensive set of rules used to score the returns.

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- The ROI per return group was compared to a computed overall ROI group average to compute a relative ROI for each group.
- The cost-benefit selection model used the ROI per group in assigning a desired selection rate per group (i.e., groups with a high ROI were assigned a large selection rate and groups with a low ROI were assigned a low selection rate), resulting in returns from groups with a relatively high ROI being selected more frequently.

Not all 168,290 returns selected for pre-refund EITC examinations by the Dependent Database had been completed at the time of our review. To estimate the total amount of overclaims protected (\$419.6 million) by the Dependent Database selection of returns from January through August 2002, the per group ROI obtained from our closed case analysis was applied using the following computations:

- Total cost to examine per group was computed as the number of examinations (per group) multiplied by the average cost to examine (\$185.32).
- Estimated EITC overclaims protected per group was computed as the total cost to examine per group multiplied by the ROI per group.
- Total estimated EITC overclaims protected was computed as the sum of the estimated EITC overclaims protected per group.

Using the cost-benefit model, the Dependent Database selection of returns (168,290) was redistributed to maximize EITC overclaims protected. The primary emphasis was selecting returns from groups with a greater ROI. This selection resulted in estimated EITC overclaims protected of \$440.5 million and was calculated using the same computations as above.

Appendix VI provides a more detailed explanation of the cost-benefit model that was developed using ROI analysis.

## The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments

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### Appendix V

#### The Dependent Database Scoring Program

The Dependent Database system was developed to add child custody and support data, acquired from the Department of Health and Human Services (HHS), to the processing of individual tax returns. The Internal Revenue Service (IRS) uses the Dependent Database scoring program to identify and select for examination those tax returns with possible erroneous Earned Income Tax Credit (EITC) claims. Between January and August 2002, the Dependent Database scoring program identified approximately 2.9 million returns for possible pre-refund examination. Of those, approximately 168,000 were selected for examination.

During initial tax return processing, all tax returns that have claimed at least one EITC-qualifying child or dependent child are evaluated by this system. Using several data sources, the system analyzes the return for specific criteria. These criteria are based on characteristics that would indicate the taxpayer might not be eligible for the EITC.

There are 25 different sets of criteria used in the Dependent Database scoring program. A numeric value is assigned to each set of criteria, and each of the 25 sets of criteria is applied to every tax return. The Dependent Database produces an overall score for the return based on the outcome of this analysis.

After all tax returns are scored, certain types and quantities of returns are selected for pre-refund examinations based on IRS resources available. If a return is selected for examination, the taxpayer's refund is "frozen" until the examination is completed and all questionable information is verified.

Internal and external data used in the Dependent Database scoring program include:

- Generalized Mainline Framework 15 – Primary file used in the Dependent Database that includes United States (U.S.) Individual Income Tax Return (Form 1040 series) information for each taxpayer.
- Federal Case Registry of Child Support Orders – Database created using information reported from state agencies and the District of Columbia to the HHS, including the identity of the custodial parent, the non-custodial parent, and any person who may be recognized as a parent, such as a legal guardian.
- Kidlink – Database containing information about a child's mother and father as reported to the Social Security Administration (SSA).
- DM1 – Database containing vital statistics for the entire U.S. population as reported to the SSA, such as the date of birth or date of death of an individual.
- DUPTIN – Database containing Social Security Numbers (SSN) and their usage in the IRS' tax return processing system.

## **The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments**

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- National Account Profile – Database containing taxpayer-identifying information including a taxpayer’s SSN, name and address, and information pertaining to the taxpayer’s spouse.
- Individual Returns Transaction File – File that contains tax return information that has completed the IRS’ tax return processing system.
- Duplicate Direct Deposit – Database containing bank account information that associates all taxpayers that used the account for a direct deposit refund.
- Individual Master File On-Line – Files containing the on-line version of taxpayer information and tax return information.

While the primary focus of the Dependent Database process is to verify whether taxpayers that claim children to receive the EITC are meeting residency and/or relationship requirements, other issues are also examined. Those issues include:

- Duplicate claims of children (for the EITC or dependent purposes) by two or more taxpayers.
- Invalid filing status for the EITC.
- Deceased qualifying child or dependent.

## The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments

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### Appendix VI

#### Cost-Benefit Analysis

We conducted a cost-benefit<sup>1</sup> analysis using a standard return on investment (ROI) analysis. Standard accounting procedures define ROI as the income received divided by the investment made. For purposes of this analysis, we defined:

- **Income received** as the amount of Earned Income Tax Credit (EITC) overclaimed by the taxpayer that was disallowed as a result of the examination. (Our analysis did not consider other tax and/or credit adjustments made in the same examinations.)
- **Investment made** as the cost of conducting an examination.

We performed this ROI analysis to determine if the Internal Revenue Service's (IRS) Dependent Database<sup>2</sup> examination case selection process ensures resources are being used to provide the greatest ROI possible. Our analysis included examinations of returns for Tax Year (TY) 2001 that had begun between January and August 2002 and had been completed by November 2, 2002. The details of our analysis follow.

**Step 1:** Conducted a closed case ROI analysis per group based on an IRS estimated average cost per examination.<sup>3</sup>

1. Obtained the TY 2001 Dependent Database Score (consisting of 2,874,550 returns), Issue, and Select Tables (168,290 returns) for all returns scored, all issues identified, and all returns selected for examination by August 31, 2002.
2. Obtained examination closure data through November 2, 2002, by acquiring an additional Dependent Database Select Table to identify closing data for as many of the 168,290 examinations selected by August 31, 2002, as possible.
3. Excluded those returns (288,831) from the total population of scored returns that would not have been selected for examination because of a prior account condition. The actual number of returns eligible for selection through the Dependent Database process was 2,585,719.

Of all returns selected for examination by August 31, 2002 (168,290), there were 75,165 examinations that were completed (Audit Information Management System

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<sup>1</sup> Cost-benefit is defined as providing the most benefit to the Federal Government at the least cost (i.e., selecting examinations that use the least resources (costs) while protecting the most revenue).

<sup>2</sup> The Dependent Database is a computer system used to, among other things, identify and select for examination tax returns with possible erroneous EITC claims. Selection is based upon criteria developed into a comprehensive set of rules used to score the returns.

<sup>3</sup> The IRS currently assumes EITC Dependent Database examinations do not have a large cost variance.



## **The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments**

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disposal code 01-13) by November 2, 2002. The Audit Information Management System is an automated computer system used for examination case workload management.

4. Stratified the returns selected for examination by rule broken or by groups of rules broken. Returns were categorized into 1 of 31 groups based on the types of rules broken (issues) and the data used to score the returns – Federal Case Registry (FCR), Dependent Database (DDb), and Electronic Fraud Detection System (EFDS). The groups used were:  
  
Multiple FCR, DDb, and EFDS rules broken.  
Multiple FCR rules broken.  
Multiple DDb rules broken.  
Multiple FCR and DDb rules broken.  
Multiple FCR and EFDS rules broken.  
Multiple DDb and EFDS rules broken.  
Each individual rule broken (25 different rules).
5. Computed the ROI for each group of closed examinations (75,165) using the following method:
  - a) The total examination cost to conduct examinations for a group was calculated as the count of examinations per group multiplied by \$185.32 (the average cost of EITC examinations provided by the EITC Program Office).
  - b) The EITC overclaims protected by group was calculated by summing the Dependent Database Select Table “EITC change” field for each return in the group.
  - c) The ROI per group was calculated as EITC overclaims protected divided by the total examination cost.

**Step 2:** Projected total EITC overclaims protected on 75,165 TY 2001 examinations closed by November 2, 2002, to the total number of Dependent Database examinations (168,290) selected between January and August 2002 based on the ROI per strata obtained in Step 1.

Assumption: The results of the examinations closed after November 2, 2002, would not vary significantly from those closed prior to November 2, 2002 (i.e., similar EITC overclaim protected per examination).

1. Applied the ROI per group computed in Step 1.5 above to all groups in the Dependent Database Select Table (168,290 stratified in Step 1.4) because not all 168,290 returns selected for examination by August 31, 2002, were closed by November 2, 2002.
2. Calculated the projected total examination cost for each group by multiplying \$185.32 times the count of examinations per group.
3. Calculated the projected EITC overclaims protected for each group by applying the ROI for each group to the total examination cost for each group (i.e., projected total examination cost for each group multiplied by the ROI for each group).

## **The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments**

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4. Computed the total projected EITC overclaims protected by summing the projected EITC overclaims protected for each group. Based on the ROI per group, the IRS model used to select TY 2001 EITC returns for examination (168,290 returns) would result in approximately \$419,617,420 in EITC overclaims protected.

**Step 3:** Selected the TY 2001 Dependent Database examination inventory (selected prior to August 31, 2002) based on the relative ROI for the purposes of maximizing the projected EITC overclaims protected.

This analysis was conducted to determine the change in EITC overclaims protected if examination case selection was based on relative ROI – selecting more returns from groups with larger ROIs and fewer returns from groups with smaller ROIs.

Because we were not able to rescore TY 2001 returns to incorporate ROI analysis into the point-based Dependent Database examination selection process, we opted to use an alternate percentage-based method to select returns for examination. We are not advocating that the IRS adopt this method; it is intended as an illustration of how incorporating ROI could change the amount of EITC overclaims protected using the same number of resources.

### Assumptions:

- The resource level remains the same so only 168,290 examinations can be selected.
  - Each rule must have some amount of coverage.
  - The results of the examinations closed after November 2, 2002, would not vary significantly from those closed prior to November 2, 2002 (similar EITC overclaim protected per examination).
1. Computed an average ROI for all groups – The ROI per group calculated in Step 1.5 was summed and an average ROI for all groups was determined to be 7.68 (238.05 [sum of group ROIs] / 31 [the number of rule groups]).
  2. Calculated a relative ROI – Each group ROI was divided by the average ROI of 7.68 to determine if a group ROI was above or below the average. For example, the group of returns that broke FCR and EFDS rules had an ROI of 17.35. This group ROI was 2.26 (17.35 / 7.68) times the average ROI – that means for every return selected from this group, the expected ROI is 2.26 times greater than that from a return selected from a group with an average ROI.
  3. Used the relative ROI per group (ratio to average) to redesign the selection process – The rule groups were judgmentally put into 6 categories from high to low relative ROI. The high relative ROI groups were judgmentally reassigned a high selection rate, and the low relative ROI groups were judgmentally reassigned a low selection rate.

**The Selection of Earned Income Tax Credit Returns for Examination  
Can Be Improved to Further Prevent Erroneous Payments**

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<u>Category</u>	<u>Relative ROI</u>	<u>Selection Rate</u>
1 – High	2.26	30.23 percent
2 – Adjusted**	2.00 to 2.25	Various based on available volumes
3 – Above Average	1.41 to 1.99	10.00 percent
4 – Mid-Average	1.01 to 1.40	0.5 percent
5 – Low Average	0.75 to 1.00	0.1 percent
6 – Low	below .075	0.05 percent

\*\* Some rule groups with high ROIs (category 2) that should have had a corresponding high selection rate had to be adjusted down because the volume of returns in the Score Table which were eligible to be selected was insufficient.

4. Applied the selection rate from the categories identified in Step 3.3 to the total workload of 168,290 examinations for the filing season<sup>4</sup> as a whole. For example, the multiple FCR and EFDS rules group had a relative ROI of 2.26, which placed it in the high category with a selection rate of 30 percent.
5. Based on the revised selection count per group, computed a total cost per group by multiplying the number of returns selected by \$185.32 (average cost per examination).
6. Used the ROI per group from Step 1.5 and applied it to the total cost per group to obtain the projected EITC overclaims protected.
7. Computed the total projected EITC overclaims protected by summing the projected EITC overclaims protected for each group. The selection of returns (168,290) based on the ROI cost-based model resulted in approximately \$440,498,340 in EITC overclaims protected.
8. Computed the difference in EITC overclaims protected using the IRS selection model and the ROI cost-based selection model.
  - The IRS selection model projected EITC overclaims protected was \$419,617,420 (from Step 2.4).
  - The ROI cost-based selection model projected EITC overclaims protected was approximately \$440,498,340 (from Step 3.7).
  - The difference was \$20,880,920 in projected EITC overclaims protected by examination of the same number of returns (168,290) for the overall filing season.

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<sup>4</sup> The period from January through mid-April when most individual income tax returns are filed.

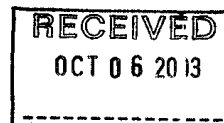
The Selection of Earned Income Tax Credit Returns for Examination  
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Appendix VII

Management's Response to the Draft Report



DEPARTMENT OF THE TREASURY  
INTERNAL REVENUE SERVICE  
ATLANTA, GA 30308



OCT 06 2003

MEMORANDUM FOR DEPUTY INSPECTOR GENERAL FOR AUDIT

FROM:

Henry O. Lamar, Jr.  
Commissioner, Wage and Investment Division

A handwritten signature in black ink that reads "Henry O. Lamar, Jr.".

SUBJECT:

Draft Audit Report: The Selection of Earned Income Tax  
Credit Returns for Examination Can Be Improved to Further  
Prevent Payment of Erroneous Claims (Audit # 200340039)

As your report acknowledges, we have a good process for evaluating the results of the Dependent Database (DDb) case selection, and the returns we select for examination are representative of taxpayers who claim EITC based on qualifying children. Ensuring that only eligible taxpayers receive the EITC, and that we reduce unsubstantiated claims is one of our highest priorities. To accomplish this mission, Wage and Investment Division and Research meet twice each year to analyze statistically valid historical data and DDb business results to ensure we:

- Select the most non-compliant returns, and
- Have a balance between return on investment and coverage.

We held meetings in April and December 2002, to structure and improve the rules to select more non-compliant returns. These improvements, implemented before the January 2003 DDb selection process began, increased the percentage of agreed cases (where the taxpayer agrees with our audit assessment), and decreased no change cases (where our examination does not change the taxpayer's claim). By improving the rules to select more non-compliant returns, we have reduced direct examination costs.

Historically, non-compliant taxpayers tend to agree with our audit assessment or do not respond to it. These cases require the lowest examination cost. Ultimately, the cost of an examination is directly related to the disposition of the case, which is based on taxpayer behavior.

We plan to analyze the FY 2003 DDb closed case data, which will include the DDb rule changes implemented in January 2003. We will attempt to group returns by rules broken and assign direct examination costs to those groups. This will enable us to determine if certain rule breaking groups have a higher associated cost. This analysis will require gathering and reviewing many rule combinations. We cannot concur with

## The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments

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your outcome measures which indicate that an additional \$20.9 million in overclaims could have been protected. We need to conduct a comprehensive analysis using complete FY2003 data, which is not yet available, in order to make this determination.

We thank you for your proposals. We are always looking for innovative ways to improve case selection and hope that you will allow us adequate time to determine if your proposals will have a favorable outcome.

Attached is a detailed response outlining corrective actions that we will take to address your recommendation. If you have any questions, please contact Jim Grimes, Director, Reporting Compliance, at (404) 338-7643.

Attachment

## The Selection of Earned Income Tax Credit Returns for Examination Can Be Improved to Further Prevent Erroneous Payments

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### **RECOMMENDATION #1**

The Commissioner, W&I Division should complete an analysis of the historical Dependent Database examination data to determine if there is a relationship between the direct examination time, rules identified, and disposition of examinations. If there is a relationship, cost-benefit data should be incorporated into the criteria used in the rule score for the Dependent Database case selection process. Absent a relationship, an average cost of examinations should be used to conduct a cost-benefit analysis to incorporate into the rule score.

### **CORRECTIVE ACTIONS**

We plan to analyze the FY 2003 DDb closed case data, which will include the DDb rule changes implemented in January 2003. We will attempt to group returns by rules broken and assign costs to those groups.

### **IMPLEMENTATION DATE**

Proposed: October 31, 2004

### **RESPONSIBLE OFFICIAL**

Director, Reporting Compliance, Wage and Investment Division

### **CORRECTIVE ACTION MONITORING PLAN**

This corrective action will be monitored as part of our internal management control system. The Senior Manager, Strategy and Selection will report progress to the Director, Reporting Compliance.

### **RECOMMENDATION #2**

The Commissioner, W&I Division should incorporate a cost-benefit analysis into the Dependent Database Risk-Based Scoring Model planned for implementation in January 2005.

### **CORRECTIVE ACTIONS**

Based on our analysis, we will incorporate a cost-benefit analysis into our DDb selection process. However, we cannot make these changes until January 2005.

### **IMPLEMENTATION DATE**

Proposed: January 31, 2005

### **RESPONSIBLE OFFICIAL**

Director, Reporting Compliance, Wage and Investment Division

### **CORRECTIVE ACTION MONITORING PLAN**

This corrective action will be monitored as part of our internal management control system. The Senior Manager, Strategy and Selection will report progress to the Director, Reporting Compliance.