U.S. Department of Housing and Urban Development
Office of Policy Development and Research

Quality Control for Rental Assistance Subsidies Determinations

Final Report for FY 2006

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Quality Control for Rental Assistance Subsidies Determinations

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Prepared for:

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

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The contents of this report are the views of the contractor and do not necessarily reflect the views or policies of the U.S. Department of Housing and Urban Development or the U.S. Government.

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Executive Summary

The Department of Housing and Urban Development (HUD) Quality Control for Rental Assistance Subsidy Determinations studies provide national estimates of the extent, severity, costs, and sources of rent errors in tenant subsidies for the PHA-administered Public Housing, Section 8 Housing Choice Voucher, and Moderate Rehabilitation programs; and the owner-administered Section 8, and Section 202 and Section 811 programs with Project Rental Assistance Contracts (PRAC) or Project Assistance Contracts (PAC). These programs account for nearly all of HUD's current housing assistance outlays administered by the Offices of Housing and Public and Indian Housing, as well as the large majority of units assisted by HUD. This study was designed to measure the extent of administrative error by housing providers. The errors we evaluated in this study affect the rent contributions tenants should have been charged. *The findings presented in this report are a result of data collected from February through July 2007 for actions taken by Public Housing Authority (PHA) and project staff during FY 2006 (October 2005 through September 2006).* These findings show that the percent of errors, the average dollars in error and the gross dollar error rate in the Public Housing, Section 8 Housing Choice Voucher, Moderate Rehabilitation, owner-administered Section 8, and Section 202 and Section 811 programs with PRAC or PAC tenant subsidies continues to remain stable when compared with results from previous studies.

HUD's rental housing assistance programs are administered on HUD's behalf by third-party program administrators, including PHAs, public and private project owners, and contracted management agents. In the programs examined, eligible tenants are generally required to pay 30 percent of their income toward shelter costs (rent plus utilities), with HUD providing the balance of the rental payment. New program applicants are required to provide certain information on household characteristics, income, assets, and expenses that is used to determine what rent they should pay. Existing tenants are required to recertify this information annually and also, in some circumstances, when there are significant changes in household income or composition. Applicant or tenant failure to correctly report income may result in HUD's over- or underpayment of housing assistance. The failure of the responsible program administrator to correctly interview the tenant or process, calculate, and bill the tenant's rental assistance may also result in HUD's over- or underpayment of housing assistance.

In 2000, HUD began to establish a baseline error measurement to cover the three major types of rental housing assistance payment errors: 1) program administrator income and rent determination error, 2) intentional tenant misreporting of income, and 3) errors in program administrator billings for assistance payments. Five studies have been conducted to identify program administrator income and rent determination error. In addition to the 2000 study, studies were conducted in 2003/2004, 2004/2005, and 2005/2006 covering (re)certifications conducted in FY 2003, FY 2004, and FY 2005 respectively. The study referenced in this report covers FY 2006, and is being used to update the FY 2005 measurement of errors in program administrator income and rent determinations. The tenant data collected for this study were also used to provide the sample and data for the income match to measure the extent of intentionally unreported tenant income. The findings from this income match study will be published as a separate report. The balance of this report relates solely to program administrator income and rent determination error.

For purposes of this study, "error" is defined as any rent calculation or eligibility determination that differs from what would have occurred if the PHA or other program administrator had followed all HUD income certification and rent calculation requirements during the income certification or annual recertification conducted in FY 2006. When appropriate, study findings are compared with findings from the previous study.

Financial Impact of Identifying Rent Error. Reduction in the rent error associated with the programs included in this study does not mean there will be an overall savings in the costs associated with administering these programs. Given there are large numbers of eligible households on waiting lists, if a household leaves the program because it is no longer eligible for a subsidy, another household will take its place. The replacement household may be entitled to a smaller or a larger subsidy than the household that left the program. Therefore, the most direct benefit of identifying households with rent error is making sure those households who are eligible for the program are receiving the correct subsidy, rather than reducing the amount of funds needed to administer the programs. The most appropriate use of this study is as a tool for strengthening HUD's procedures for ensuring administrative compliance with regulations. The recommendations presented in this report may require greater rather than fewer resources to provide HUD, PHAs, and owners with the written policy guidelines, training, standardized forms, and on-going monitoring needed to assure the programs are administered correctly. HUD's objective of providing the right subsidies to the right families is a worthy one that this study can assist in achieving.

A. Methodology

HUD Requirements and Study Standards. Using the *Code of Federal Regulations* and official HUD handbooks and notices, all HUD requirements relevant to the determination of rent were consolidated into a set of HUD requirements. Nationally recognized experts were involved in establishing and reviewing the standards used in this study.

The Sample. A nationally representative sample of 600 projects in the United States and Puerto Rico was selected for this study. These projects were selected from the universe of the three program types covered by the study—

- Public Housing
- PHA-administered Section 8 (Vouchers and Moderate Rehabilitation)
- Owner-administered Section 8, Section 202 PRAC, Section 811 PRAC, Section 202/162 PAC

A random sample of four households was selected for most projects, but more tenants were selected from unusually large projects. The final study data set includes responses from 2,407 households.

The Data Collection Process. The data collection effort included creating and automating more than 30 data collection instruments, contacting and obtaining information from PHA/owner staff, hiring and training more than 60 field interviewers, and selecting the tenant sample. Field

interviewers obtained data from tenant files, and interviewed tenants using computer-assisted personal interviewing software developed for this study. The automated data collection process included built-in consistency and edit checks that prompted interviewers to probe inconsistent and anomalous responses. Collected data were electronically transferred daily to Macro headquarters for review. Requested third-party verifications related to income and expenses were also processed at Macro headquarters.

Calculation of Rent Error. A quality control (QC) rent was calculated for each household in the sample using the information reported by the PHA/project and household. Rent error was calculated by subtracting the QC rent from the actual tenant rent (the rent from HUD Forms 50058 or 50059 that had been calculated by the project staff). A discrepancy of $5 or less between the actual and QC rent was not counted as an error. This $5 differential was used to eliminate rounding differences and minor calculation discrepancies that have little effect on program-wide subsidy errors.

B. Major Rent Error Findings

National Rent Error Estimates. The analysis of the FY 2006 tenant files, tenant interview, and income verification data indicates that—

- 64 percent of all households paid the correct amount of rent within $5 (51 percent paid exactly the right amount)
- 19 percent of all households paid in excess of $5 less than they should have (with an average error of $67 per month)
- 17 percent of all households paid in excess of $5 more than they should (with an average error of $36 per month)

Rent Error Estimates Varied by Program Type. The highest rate of underpayment of rent (22 percent) was found in the PHA-administered Section 8 program. The rate of overpayment was fairly consistent among all three program types with overpayments of rent in 18 percent of owner-administered, 18 percent in PHA-administered Section 8 households and 15 percent of Public Housing households. Underpayment of rent was found in 19 percent of Public Housing households and 16 percent of owner-administered households. The exhibit that follows summarizes this information.

Exhibit ES-1
Frequency of Rent Error by Program Type

Program	Rent Underpayment (Subsidy Overpayment)	Rent Overpayment (Subsidy Underpayment)
Public Housing	19%	15%
PHA-Administered Section 8	22%	18%
Owner-Administered	16%	18%
Total	19%	17%

Dollar Error Effect of Rent Errors. All summary error estimates represent the summation of net case-level errors. That is, a case is determined to have a net overpayment error, no error, or a net underpayment error. Major findings were—

- *Rent Underpayments of Approximately $648 Million Annually (up from $584 Million in FY 2005).* For tenants who paid less monthly rent than they should pay (19 percent), the average monthly underpayment was $67. For purposes of generalization, total underpayment errors were spread across all households (including those with no error and overpayment error) to produce a program-wide average monthly underpayment error of $13.07 ($157 annually). Multiplying the $157 by the approximately 4.1 million units represented by the study sample results in an overall annual underpayment dollar error of approximately $648 million per year.

- *Rent Overpayments of Approximately $306 Million Annually (down from $341 Million in FY 2005).* For tenants who paid more monthly rent than they should pay (17 percent), the average monthly overpayment was $36. When this error was spread across all households, it produced an average monthly overpayment of $6.17 ($74 annually). Multiplying the $74 by the approximately 4.1 million assisted housing units represented by the study sample results in an overall annual overpayment dollar error of approximately $306 million per year.

- *Aggregate Net Rent Error of $342 Million Annually*. When combined, the average *gross* rent error per case is $19 ($13 + $6). Over- and underpayment errors partly offset each other. The *net* overall average monthly rent error is $7 ($13-$6). HUD subsidies for Public Housing and Section 8 programs equal the allowed expense level or payment standard minus the tenant rent, which means that rent errors have a dollar-for-dollar correspondence with subsidy payment errors, except in the Public Housing program in years in which it is not fully funded (in which case errors have slightly less than a dollar-for-dollar effect). The study found that the *net* subsidy cost of the under- and overpayments was approximately $342 million per year ($648 million - $306 million)[1].

[1] The actual estimate of annual rent underpayments is $648.2 million. The actual estimate of annual rent overpayments is $306.0 million. Therefore the actual estimate of net rent error is $342.2 million ($648.2 - $306.0 = $342.4).

Subsidy over- and underpayment dollars are summarized in Exhibit ES-2. This data responds to study Objective 1 (identify the various types of errors and error rates and related estimated variances).

Exhibit ES-2
Subsidy Dollar Error

Type Dollar Error	Subsidy Overpayment	Subsidy Underpayment
Average Monthly Per Tenant Error for Households with Errors	$67 (19% of cases)	$36 (17% of cases)
Average Monthly Per Tenant Error Across All Households	$13	$6
Total Annual Program Errors	$648 million	$306 million
Total Annual Errors—95% Confidence Interval	$479 – 817 million	$234 – 378 million

Exhibit ES-3 provides estimates of program administrator error by program type. This data responds to study Objectives 3 (estimate national-level net costs for total errors and major error types), 8 (provide information on the extent to which errors are concentrated in projects and programs), and 11 (estimate total positive and negative errors in terms of HUD subsidies).

Exhibit ES-3
Estimates of Error in Program Administrator Income and Rent Determinations (in $1,000's)

Administration Type	Subsidy Overpayments	Subsidy Underpayments	Net Erroneous Payments	Gross Erroneous Payments
Public Housing	$119,472	$53,352	$66,120	$172,824
PHA-Administered Section 8	$354,192	$165,828	$188,364	$520,020
Total PHA-Administered	$473,664	$219,180	$254,484	$692,844
Owner-Administered	$174,540	$86,784	$87,756	$261,324
Total	$648,204	$305,964	$342,240	$954,168
95% Confidence Interval	+/-$168,997	+/-$72,358	+/-$175,004	+/-$192,264

In response to study Objective 5 (determine whether error rates and error costs have statistically significant differences from program to program), multiple regression analyses with design effect adjusted were conducted to compare the three program types included in the study on percentages of proper payment (within $5), gross error, and net error. This analysis indicates the PHA-administered Section 8 program seem to have moderate and statistically significant ($p < .01$) higher gross error and lower proper payment rate compared with the Owner Administered program; whereas no statistically significant difference is found between Public Housing and Owner Administered programs. Note that upon entering covariates that represent household characteristics and financial conditions, these differences between the Section 8 and Owner Administered programs are no longer significant.

Comparison with Prior Studies. Four prior studies, the 2000 baseline, the FY 2003 study, the FY 2004 study, and the FY 2005 study estimated erroneous payments attributed to program administrator rent calculation and processing errors, using the same methodology, sampling procedures, and sample sizes as this FY 2006 study. The 2000 "Quality Control for Rental Assistance Subsidy Determinations" study was published as a final report in June 2001. The FY 2003 final report—"Quality Control for Rental Assistance Subsidies Determinations"—was completed in August 2004. The FY 2004 final report was completed in July 2005. The FY 2005 final report was completed in October 2006. While the FY 2003 and FY 2004 studies demonstrated significant reductions in erroneous payments attributed to program administrator income and rent determinations, the FY 2005 findings indicated a smaller reduction in the gross dollars in erroneous payments that did not represent a statistically significant decrease from FY 2004. The FY 2006 study indicated a small increase in the gross dollars in erroneous payments which also did not represent a statistically significant difference. In other words, when sampling variance is taken into consideration, there is no change in the Gross Erroneous Payments between FY 2006, and FY 2005. Exhibit ES-4 presents a comparison of the gross erroneous payments for 2000, FY 2003, FY 2004, FY 2005 and FY2006.

Exhibit ES-4
Comparative 2000, FY 2003, FY 2004, FY 2005 and FY 2006 Gross* Erroneous Payments

Administration Type	2006 Gross Erroneous Payments (in $1,000's)	2005 Gross Erroneous Payments (in $1,000's)	2004 Gross Erroneous Payments (in $1,000's)	2003 Gross Erroneous Payments (in $1,000's)	2000 Gross Erroneous Payments (in $1,000's)	Percent Reduction in Gross Erroneous Payments from 2000 to 2006
Public Housing	$172,824	$220,464	$242,076	$316,116	$602,556	71.32%
PHA-Administered Section 8	$520,020	$456,240	$521,220	$730,956	$1,096,524	52.58%
Total PHA-Administered	$692,844	$676,704	$763,292	$1,047,072	$1,699,092	59.22%
Owner-Administered	$261,324	$248,580	$224,460	$368,796	$539,160	51.53%
Total	$954,168	$925,232^	$987,744^	$1,415,844^	$2,238,252^	57.37%
	+/-$192,000	+/- $164,000	(+/-$131,000)	(+/-$163,000)	(+/-$275,000)	

* Gross Rent Error is the sum of the absolute value of positive and negative rent error.
^ Numbers do not add exactly due to rounding.

C. Errors Detected Using Information Obtained From Project Files

Rent errors are often a result of a mix of different types of errors. This study also examined administrative and component errors. For purposes of this study, **administrative errors** are analyzed separately from specific **component errors**. Administrative Errors are errors that result from administrative mistakes. They consist of—

- Consistency errors—errors in logical conformity between elements within the 50058 or 50059 Forms
- Calculation errors—arithmetic errors within subsections of the 50058 or 50059 Forms
- Transcription errors—errors in transferring information from documentation in the tenant file to the 50058 or 50059 Forms

- Failure to conduct a recertification in a timely manner
- Failure to verify information

Component errors are related to the income and expense components used to calculate rent. The income components are employment income, Social Security benefits and pensions, public assistance, other income, and asset income. The expense/allowance components are elderly/disabled allowance, dependent allowance, medical allowance, child care allowance, and disability allowance. Component errors often occur when project staff do not conduct a thorough tenant interview or do not verify the information obtained during the interview. However, component error may also occur when the tenant supplies incorrect information, either intentionally or unintentionally. The discussion below responds to study Objectives 2 (identify the dollar costs of the various types of errors), and 6 (determine the apparent cause of significant rent errors).

Administrative Errors. The two most common administrative errors are calculation errors and transcription errors. The HUD PIC and TRACS data systems check the rent calculations on Forms 50058 and 50059. For tenants for whom data are submitted (and corrected if required), these systems virtually eliminate rent determination calculation errors for the items included on the forms. However, not all cases are reported and some cases returned to program sponsors for correction are ignored or are changed in HUD systems but not actually implemented.

PIC/TRACS data system matches were attempted (in an effort to respond to Objective 14) for the 2407 households in the study. Eighty-three percent of these households (93 percent of owner-administered households, and 78 percent of PHA-administered households) were found in the PIC/TRACS data bases. Interestingly enough, there was very little difference in the percent of households with rent error for households for which PIC/TRACS data were or were not available.

Verification Errors. The percentage of income and expense items verified by PHA/owner staff in FY 2006 was slightly less then in FY 2004, and FY 2005. Income items were verified at least 74 percent of the time (compared to 79 percent in FY 2005). In addition, with the exception of asset income, the percentage of written, third-party verification of income and expenses decreased. While in FY 2005, we found that the percentage of items verified remained similar to the percentage verified in FY 2004, there was a downward trend in FY 2006. Failure to use verified income and expense amounts continues to be a problem. And while the percent of items where the verified amounts matched the amount reported on the 50058 and 50059 Forms remained about the same, in 32 percent of the sources of earned income the two amounts did not match.

Obtaining income verification is often difficult. Even when repeated requests are made, employers sometimes do not respond to requests for verification. Some program sponsors do a much better job than others in achieving third-party compliance with written verification. The QC study shows that it is reasonable to expect all program sponsors to have as high a success rate as the current high performers. The study also shows that there is significant room for improvement in using the verification data obtained, which are often collected consistent with procedures but then filed and never used.

Component Errors. Incorrect income and deduction amounts were by far the most significant sources of error in determining rents. Less than one percent of households with rent errors did *not* have an income or expense component error. Earned income (26 percent), pension income (25 percent), and medical allowances (17 percent) continued to have the greatest error frequencies. The following exhibit shows the frequency of the most serious component errors and the average dollar amount for each type. The Percentage of Households represents the households with any rent component error where the specified rent component was responsible for the largest error. The Average Dollar Amount represents the average dollar amount for the specified rent component for households where the specified component was responsible for the largest error. Errors are ordered by their effect on program subsidy levels, which means that both the error cost per case as well as the frequency of that error type was considered. For comparison purposes, findings from FY 2005 are provided in parentheses. Note that both the percentage of household with component errors and the average dollar amount of error have tended to increase.

Exhibit ES-5
Rent Components Responsible for the Largest Dollar Error for Households with Rent Error
(FY 2005 Findings Are Provided in Parentheses)

Rent Component	Percentage of Households	Average Dollar Amount
Earned Income	26% (20)	$4,544 ($3,931)
Pensions	25% (21)	$2,246 ($2,740)
Other Income	10% (12)	$2,488 ($2,365)
Public Assistance	9% (9)	$1,823 ($2,118)
Asset Income	2% (3)	$1,733 ($911)
Medical Allowance	17% (21)	$1,099 ($938)
Child Care Allowance	4% (5)	$2,128 ($2,766)
Dependent Allowance	3% (5)	$703 ($552)
Elderly/Disabled Allowance	2% (2)	$400 ($400)
No Rent Component Error	1% (3)	$0
Total	100%	$2,513 ($2,210)*

* The sum of the dollars associated with the largest component in error divided by the number of households with error.

D. Additional Findings

Eligibility of Newly Certified Households. A separate analysis of newly certified households (16 percent of the sample) was conducted to determine if these households were eligible for HUD housing assistance. Ninety-one percent of these households met all the eligibility criteria (compared to 86% in FY 2005). There were no newly certified households in the sample who were not income-eligible on the basis of the QC income determination.

Three percent of the newly certified households failed to document *Social Security numbers* (or certify non-assignment of a number) for one or more family members (at least 6 years of age), and 5 percent lacked the signed *consent forms* needed to authorize verification of income and assets (for each member of the household at least 18 years of age). Only 2 percent lacked the signed declaration forms or evidence accepted as proof of citizenship. These findings respond to study Objective 9 (estimate the percentage of newly certified tenants who were incorrectly determined eligible for program admission).

Overdue Recertifications. HUD requires that every household be recertified annually. Recertifications for 3 percent of the households were overdue.

Occupancy Standards. Study Objective 7 asks for the extent to which households are over housed relative to HUD's occupancy standards. Fourteen percent of all households occupied a unit with too many or too few bedrooms in FY 2006, according to the guidelines used for this study. This number is up slightly from FY 2005, where thirteen percent of all households occupied a unit with an incorrect number of bedrooms

Rent Reasonableness. Study Objective 10 asks for the extent to which Section 8 voucher rent comparability (reasonableness) determinations are found in the tenant file, and the method used to support the determinations. Eighty-eight percent of new admission files contained rent reasonableness documents, as did 67 percent of the files for households for whom data were collected for an annual recertification. However, the absence of documentation does not necessarily indicate a determination was not completed; only that it was not properly documented. Information was also collected at the PHA level to understand the method used to determine rent reasonableness. About 91 percent of the PHAs in the study used unit-to-unit rent comparison, unit-to-market rent comparison, or a point system when determining if the rent was reasonable. For the remaining 9 percent there was either no information available, the PHA used some other method of determining rent reasonableness, or the units were subject to rent control.

Automated Rent Calculation Systems. Study Objective 12 asks whether error rates in projects that use an automated rent calculation system differ from errors in those that do not. We did not find a statistically difference between PHA/projects that use automated rent calculation systems and those that do not. This is not surprising because nearly 97 percent of all projects use an automated rent calculation system.

50058/59 Rent Calculation Error. The tenant rent was calculated using only data on the 50058/50059 to determine the relationship between errors detected using the 50058/50059 forms and total rent errors found in the study (in response to study Objective 4). When using only the 50058/50059 data to calculate rent, errors were found in 5 percent of the households. This is clearly different then the QC error calculation where errors were found in 37 percent of the households. In addition, error was found in *both* the 50058/50059 and QC calculation in only 3 percent of the households.

Tenant Characteristics, and Project Characteristics and Practices. In response to study Objectives 8 (provide information on the extent to which errors are concentrated in projects and programs), data were collected from PHA/project staff via a structured mail survey. Multivariate analyses were conducted to explore whether project characteristics or practices contributed to

administrative or rent errors. It was found that projects that regularly verified incomes had lower gross rent errors. Also, PHA/projects with minimal education requirements when hiring staff were quite consistently found to have lower rent error, a pattern strongly suggesting that PHA/projects should implement such requirements, even thought the specific educational level may be subject to local judgment.

In response to study Objective 13 (determine whether other tenant or project characteristics on which data are available are correlated with high or low error rates), additional multivariate analyses were conducted. A number of household characteristics were found to be significantly related to administrative errors and gross rent error. Household annual income from different sources (employment, public assistance, pension, and other), the number of household income/expenses, and the number of allowances, were found to be consistently related to higher gross rent error.

E. 2000–2005 Progress

In response to the findings and recommendations of the 2000 Assisted Housing Quality Control Study, HUD initiated a series of aggressive actions to address the causes of erroneous assistance payments, including extensive onsite monitoring. Actions taken by HUD include the following—

- A Rental Housing Integrity Improvement Program committee headed by the Office of the Chief Financial Officer with representatives from the other affected Offices was formed to coordinate and monitor corrective actions. The committee meets to review progress, and identify and resolve impediments to progress in reducing errors.

- The Offices of Housing and Public and Indian Housing developed and issued new handbooks and instructional material that detailed all current HUD program requirements and standardized them to the extent possible without regulatory or statutory change. These handbooks cover nearly all aspects of occupancy policy, from the point of tenant application for admission and rent calculations through ongoing occupancy to lease termination. For Public Housing, the issuance of a Public Housing Occupancy Guidebook represented the first such effort in more than 20 years, and provided a defined methodology for calculating a number of complex requirements (e.g., the Earned Income Disallowance).

- The Offices of Housing and Public and Indian Housing substantially increased training efforts, and have held a number of national and regional training sessions. This contrasts with a less activist role in the 1980's and 1990's.

- The Offices of Housing and Public and Indian Housing initiated comprehensive, large-scale, and onsite occupancy and management reviews, which also represented a major procedural change from the previous two decades for most HUD offices—

    - The Office of Housing primarily used new agreements with Contract Administrators, which are usually State agencies, to perform this function. Contract Administrators

provide technical support in adhering to HUD program requirements and routinely perform detailed monitoring on agency compliance.

- The Office of Public and Indian Housing initiated a system of Rental Integrity Monitoring reviews to detect and reduce errors in income and rent calculations at targeted PHAs, reduce rent under- and/or overpayments by residents, and ensure that HUD's limited housing resources were being used to serve eligible families in a fair and equitable manner as intended by Congress.

- HUD initiated a legislative change that gives it access to the Department of Health and Human Services' New Hires income and wage database for income matching purposes. It will use these data to compare tenant-reported income with State wage data to better ensure that the right subsidy payments are made to the right households in accordance with program statutory and regulatory requirements. This legislation was passed in late 2003 and required implementation of agreements and data systems. HUD also negotiated agreements with some States to obtain access to the same information. Some local agencies have already initiated income-matching systems, and it seems that this has made some contribution to error reductions.

The HUD's performance goals, which were developed in consultation with the Office of Management and Budget, called for reducing the 2000 benchmark assisted housing error levels by 50 percent by the end of 2005. The study of program administrator error for FY 2006 shows that HUD exceeded this goal. It should be noted, however, that the reduction of errors and improper payments is unlikely to have an equivalent effect on budget outlays. HUD's experience indicates that its program integrity improvement efforts are likely to result in some higher income tenants leaving assisted housing and being replaced with lower income tenants requiring increased outlays. Nevertheless, HUD's goal remains to ensure that the right benefits go to the right people.

F. Recommendations

The progress when comparing the 2000 findings to the FY 2006 results is impressive. However, the percent of errors, the average dollars in error and the gross dollar error rate have remained stable since the FY 2004 study. On the positive side, the errors associated with new certifications are decreasing. However, the percent of items that are verified by PHA/project staff are decreasing. Future reduction in rent errors will require timely verification of all rent components and documentation of that verification in the tenant file.

On the basis of the current study's results, the following approaches to further reducing program administrator income and rent determination error rates are recommended:

- HUD should continue its plans to implement use of the Department of Health and Human Service's New Hires income matching database as quickly as possible. However, access to the New Hires income matching database by itself will not result in a reduction in error. PHA/project staff must use this information to assist them in resolving discrepancies between the database and the tenant's declaration.

- HUD should continue to provide PHAs and owners with the forms, training, and other tools required to determine rent correctly. Changes in policy should be reported to PHAs and owners in a timely fashion with the guidance needed to implement those changes in an accurate manner.

- HUD should continue to implement its onsite monitoring program, and PHAs and owners should be held accountable for implementing HUD regulations and calculating rent accurately.

- Federal laws, regulations, and HUD requirements should be simplified to the extent possible.

In addition, it would be extremely useful, both as a way to supplement the findings from this study, and to identify options for reducing error in the future, to collect more information regarding PHA/project policies and practices. Each PHA establishes its own policies, procedures, and forms for collecting the information that is ultimately used to calculate tenant rent. The differentiation in these practices may have some (possibly major) impact on the rent error, yet the analysis of the project practices and characteristics collected in the Project Staff Questionnaire designed for this study do not demonstrate the expected impact. Focus groups and cognitive interviewing could be used to identify additional PHA/project level factors that may impact error. This additional information could be used to revise the Project Staff Questionnaire to include questions focused on the specific practices expected to influence errors.

It would also be useful to gather information to document the outcome of the HUD quality control studies. Overall, the HUDQC studies indicate that both the percent of errors and dollars associated with those errors have decreased in the last six years. However, there is no information on changes in tenant behavior related to the identification and reduction of error. To really understand the overall impact of the quality control studies on subsidy funding, additional information is needed regarding both the tenants receiving the subsidies and the PHA/projects administering the housing benefits.

Recommendations for Modifying the Quality Control Process. The current QC study methodology is developed on the basis of the successes and failures of previous studies, and is generally performed well. Some minor changes in the next study appear desirable. These include continued expansion of computer systems and processes to further automate data collection, processing, and reporting functions; further research related to the characteristics and practices of PHAs and project staff that result in decreased rent calculation error; and continued investigation of the use of TRACS/PIC data to streamline the sampling and data collection process.

I. Introduction

A. Purpose of the Quality Control for Rental Assistance Subsidies Determinations Study for FY 2006

The purpose of this study is to provide national estimates of rent subsidy errors for the U.S. Department of Housing and Urban Development's (HUD's) Public and Indian Housing (PIH)-administered Public Housing (Public Housing), PIH-administered Section 8 Housing Choice Voucher and Moderate Rehabilitation programs (PHA-administered Section 8); and Housing-administered Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC programs (owner-administered). Rent subsidy errors occur during the tenant certification and annual recertification processes, and this study examines the extent, costs, and sources of these subsidy errors.[1] For the purpose of this study, "error" is defined as any rent calculation or eligibility determination that differs from what would have occurred if the PHA/owner had followed all of HUD's income certification and rent calculation requirements. This study focuses on (re)certifications conducted during Federal FY 2006. HUD identified 14 study objectives related to types of errors and cost issues; this report addresses each of these objectives. The analysis also identifies errors in assigning appropriate size units to households and certain procedural errors in the eligibility and rent determination process. In addition, a special analysis was conducted of Utility Allowances, Payment Standards and Rent Reasonableness practices used by the PHAs administering the Section 8 voucher program.

B. Background of the Study

This study is the sixth in a series of studies designed to identify current HUD eligibility, income, and rent determination regulations, translate these regulations into survey instruments, develop an error detection system, and provide nationally representative estimates of rent subsidy errors. In the past three studies, an additional income match of Social Security benefit data was conducted. The results of previous studies were published as follows:

- The final report for the first study, conducted by Macro International Inc., (Macro), and KRA Corporation (KRA) was published in April 1996 (data were collected in 1992).

- The final report for the second study, conducted by Macro[2], was published in June 2001 (data were collected in 2000).

- The final report for the third study, also conducted by Macro and which covered the first half of FY 2003, was published in April 2004. Following the collection of data for the second half of FY 2003 a follow-up report was written and published in August 2004.

[1] PHAs and owners of HUD-assisted housing are required to make an initial determination of eligibility (a "certification") and thereafter an annual recertification of each household's rent (a "recertification"). In this report, the term (re)certification refers to certifications and annual recertifications. Interim recertifications were not included in this study.

[2] From May, 1999 through December, 2006 Macro International was a wholly owned subsidiary of Opinion Research Corporation (ORC) and conducted business under the name ORC Macro.

- The final report for the fourth study, conducted by Macro was published in July, 2005 (data were collected in 2004).

- The final report for the fifth study, conducted by Macro was published in October, 2006 (data were collected in 2006).

Work on the current project began in October 2006 Tasks completed before data collection included designing the research and survey methodology, compiling HUD's regulations for the programs included in the study (Public Housing, PHA-administered Section 8, and owner-administered), and automating the data collection process. Data were collected from a nationally representative sample of HUD-assisted housing projects and project residents whose (re)certifications were conducted from November 2005 through October 2006.

C. Organization of This Report

This report is organized as follows:

- Section I: Introduction
- Section II: Methodology
- Section III: Study Objectives and Analytic Methods
- Section IV: Findings
- Section V: Recommendations
- Appendices
  - A. Rent Calculations
  - B. Weighting Procedures
  - C. Source Tables
  - D. Consistency and Calculation Errors
  - E. Project Staff Questionnaire Analysis
  - F. Multivariate Analysis

D. Definitions of Key Terms

Definitions of key terms used throughout this report are listed below:

Actual Rent—the tenant rent from the 50058 or 50059 Form.

Administration Type—PHA or owner.

Abstract Month—the month in which the data collection process for any given household was initiated.

Calculation errors—arithmetic errors within subsections of the 50058 or 50059 Form.

Case Type—certification, recertification, and overdue recertification.

Component errors—the income and expense components used to calculate rent. The income components are employment income, Social Security and pensions, public assistance, other income, and asset income. The expense/allowance components are elderly/disabled allowance, dependent allowance, medical expenses, child care expenses, and disability expenses.

Consistency errors—errors in logical conformity between elements within the 50058 or 50059 Form.

Dollar Rent Error—is calculated at the household level by subtracting the household's QC Rent from the Actual Rent.

Error Rate—the sum of the dollar amount of Gross Rent Error divided by the sum of the dollar amount of the QC Rent.

Gross Rent Error—the sum of the absolute values of under- and overpayments.

Largest Component Dollar Error—the annual dollar amount of error in the component with the largest error.

Net Rent Error—the arithmetic sum of over- and underpayments.

(Rent) Overpayment—results when the household paid more than it should have paid; HUD's contribution was less than it should have been.

Payment Type—underpayment, proper payment, and overpayment.

Program Type—Public Housing, Section 8 Housing Choice Voucher, Section 8 Moderate Rehabilitation, Section 8 project-based, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC.

Quality Control Month—the month in which the PHA/owner completed the rent calculation.

Quality Control (QC) Rent—calculated by Macro using the tenant file, household interview and verification data.

Rent Component—the five sources of income (earned, pensions, public assistance, other income, and assets) and the five types of deductions (medical, child care, and disability assistance expenses, dependent allowance, and elderly/disabled allowance).

Rent Error—the difference between the monthly Actual Rent and the monthly QC Rent.

Total Component Dollars in Error—the absolute sum (i.e., the sum of the positive and negative amounts, ignoring the plus or minus signs) of all individual income and expense component errors. These errors are combined to provide an overall Total Dollars in Error and are presented as an annual amount.

Transcription errors—errors in transferring information from documentation in the tenant file to the 50058 or 50059 Form.

(Rent) Underpayment—results when the household paid less than it should have paid; HUD's contribution was higher than it should have been.

II. Methodology

A. HUD Requirements and Study Standards

Using the *Code of Federal Regulations* and official HUD handbooks and notices, all HUD rules relevant to the determination of rent were consolidated into a set of HUD requirements. These requirements were used to create a uniform set of rules that could identify errors in eligibility determination, rent calculation, and unit assignment for the housing programs in the study. In general this uniform set of rules, known as the standards, follows the official HUD requirements. However, for some complex requirements, standardized procedures had to be developed so the data could be collected in a uniform manner. A complete list of standards used in this study can be found in the *Data Collection Standards for the FY2006 HUDQC Study, Quality Control for Rental Assistance Subsidies Studies: 2006.*[1]

B. The Sample

The initial sampling design called for a nationally representative sample of 600 projects with four households randomly selected from each project, or 2,400 households. Projects were selected with probabilities proportional to size (PPS), but projects whose size exceeded the sampling interval were selected for eight, twelve, or more households in the project, and were counted as more than one project for purposes of determining the sample size. The sampling design required approximately equal allocations for the three assisted program types: Public Housing, PHA-administered Section 8 (Vouchers and Moderate Rehabilitation), and owner-administered (Section 8, Section 202 PRAC/PAC, and Section 811 PRAC/PAC). PHAs that participated in the Move to Work block grant demonstration program through Public Housing or Section 8 Vouchers were removed from the project-level sample. Because some large projects were selected multiple times, the study sample included 534 distinct projects in 58 geographic areas across the United States and Puerto Rico. We sampled 200 projects from each major program type plus one additional Public Housing project to insure we met the minimum required sample. In addition, in three of the 534 projects, data were collected for one additional household because of changes in the tenant sample selection process. Therefore, the final data set includes responses from 2,407 households in the 534 projects.

The tenant sample was selected from all households that were receiving assistance in Federal FY 2006. A random sample of four households was selected from most projects. An equal number of potential "replacement" households were identified as potential substitutes when selected households did not meet the study requirements or were unavailable to be interviewed. However, as noted above, some large projects had additional households. For example, the New York City Housing Authority Section 8 Voucher program had a household sample size of 20. For additional information on the sampling procedures, see the *Sampling Report: FY2006, Quality Control for Rental Assistance Subsidies.*[2]

[1] Macro unpublished report to HUD dated August 15, 2006.

[2] Macro unpublished report to HUD dated November 22, 2006.

C. Data Collection

This study used a multi-stage data collection process to obtain all required information. Mail surveys provided project-level information from PHA/project staff. Tenant-level information was obtained by field interviewers who abstracted data from the household file, interviewed the tenant, and requested verification for income, expense, and household composition items from third parties.[3] Tenant income, expense, allowance, and third-party verification information were collected using HUD-sanctioned data collection procedures. Macro field interviewers strictly adhered to these procedures to avoid misclassifying errors caused by PHAs/projects that did not follow HUD requirements.

The initial collection of project level data began in November 2006. Field data collection began in January 2007 and ended in June 2007. Because PHA/projects have varying practices, data collection forms and guidelines for data collection were designed to be flexible enough to obtain data from circumstances as found in the PHA/project. The major tasks accomplished during data collection and the forms used to accomplish them are discussed below.

Creating the Data Collection Instruments. More than 30 data collection forms were used for this study to collect data on both the project and tenant levels. These forms were similar to those used for the previous data collection efforts, though modifications were made to all forms to improve the data collection process. Project-level forms were used to gather information to facilitate data collection, collect data elements necessary to calculate Quality Control (QC) rent, and gather information about certification and recertification practices. The tenant-level data collection forms were created to collect data and determine whether: 1) there were errors in the eligibility determination, 2) the household rent was calculated correctly, and 3) units were correctly assigned according to the study standards. Each form was created by a survey research specialist and reviewed by a HUD policy expert. The Office of Management and Budget (OMB) approved all data collection forms.

Automating the Data Collection Process. This study used an enhanced version of the data collection system used in previous studies. While project-level data were collected on paper and the data entered upon receipt at Macro, data from tenant files were entered directly into laptop computers, and a computer-assisted personal interviewing (CAPI) system was used to interview tenants. This system, referred to as the HUDQC Data Collection Software (HDCS) system, was developed by a special team of Macro survey specialists and computer systems experts.[4]As sections of the instruments were collected by field interviewers, the HDCS system compared the data with a range of acceptable responses and data previously entered, allowing data entry errors to be corrected in the field. The system required that the data be collected in the correct order, and that all the appropriate skip patterns be followed.

The automated system also alerted the field interviewer if key pieces of information used to calculate rent were missing and needed to be located and documented. This structured, automated process greatly reduced the need to edit, code, and clean the data after data collection

[3] Verification is a process of obtaining information about income or expenses from a third party who can attest to the accuracy of the information provided by the household. HUD requires that most information provided by the household be verified by a third party or substantiated from documents (e.g., print-outs from EIV system).

[4] The base of HDCS is the CSPRO software system used to collect demographic and health information in many countries, in conjunction with the U.S. Agency for International Development (USAID).

was completed. HDCS data were transferred to Macro electronically on a daily basis. The incoming data were reviewed in an ongoing quality control process. This continual review of data during data collection ensured the accuracy of the data and permitted headquarters staff to resolve issues or request further clarifying documents while the field interviewers were still in the field.

Contacting the PHA/Project. PHA/project contact names were obtained from HUD headquarters staff. Letters were sent to PHA/project staff advising them of the study and requesting their participation. Prior to field interviewer training and data collection, each project in the study was sent a form requesting background information essential to the data collection process and specific data used in the calculation of QC rent. The rent calculation information requested varied by program but included such items as passbook rate, utility allowance schedules, payment standards, minimum rent and flat rent. PHA/project staff verified the project type and size, and the location of project offices and files. Projects were also requested to indicate if the selected project had been designated a "special demonstration project" by HUD. If a project answered in the affirmative to this question, the status was confirmed and the project was replaced in the study. Public Housing projects were also requested to identify any income exclusions that had been adopted in addition to those specified by HUD. The data requested from the PHA/project were essential in preparation for interviewers to begin the process of collecting data and for the calculation of the QC rent. For these reasons, a 100 percent response rate to our request for information was necessary. Rigorous strategies were employed to ensure compliance and completeness of requested information prior to field data collection.

After data collection in the field had begun, a second mail survey was sent to a PHA/project staff person knowledgeable about certification and recertification procedures. This survey requested information about local policies and procedures that might help explain the rent error findings. Questions included staff training practices, verification procedures, workload of staff who conduct certifications and recertifications, and quality control practices used to review the work of this staff.

Hiring and Training Field Interviewers. More than 60 field interviewers were hired to complete the field data collection. Each field interviewer was assigned a group of projects. Field interviewers typically lived in the same general area as the projects selected for the study. Nine-and-a-half-day training sessions were held for 36 field interviewers who had not worked in the FY 2005 study, and one three-day training was conducted for 25 interviewers who had completed the FY 2005 study. The nine-day training covered:

- Project background
- HUD programs and requirements
- Survey procedures
- Automated data collection
- Administrative procedures

The three day training covered a review of the background and procedures and focused particularly on changes implemented for the 2006 study.

Abstracting from Tenant Files. At certification and recertification, PHAs/projects must complete a HUD Form 50058 for each household in Public Housing and PHA-administered Section 8 programs. A HUD Form 50059 is required for all other programs in the study. Data from the HUD Forms 50058/50059 (50058/50059 Form) were entered directly into the HUD Data Collection Software (HDCS) on each field interviewer's laptop computer. As the data were entered, the system identified potential data entry errors, such as incorrect codes or numbers, on the basis of internal calculations and consistency checks. If key data used in the rent calculation formula were missing from the 50058/50059 Form, the system alerted the interviewer and the interviewer obtained the information from another document in the tenant file or project office. These electronic checking procedures enabled field interviewers to make immediate corrections and updates.

HDCS was designed to collect data in the same formats as the official 50058 and 50059 Forms published by HUD. Because the Office of Housing created a new Form 50059 that was implemented during the middle of FY 2006, two versions of the 50059 form were available in HDCS. In addition, New York City Public Housing Authority uses a format for the 50058 that differs from this standard format. Due to the large number of NYC Public Housing cases in the study, data entry screens that reflected the NYC Public Housing format were specifically developed to be used by field interviewers who collected data in NYC Public Housing projects. In other projects where the 50058 or 50059 Forms differed from the official HUD format, paper crosswalks were developed by Macro. Quality Specialists examined the data elements on the atypical form and developed a plan that illustrated which fields corresponded to the standard 50058/50059 Form reflected in HDCS. A paper crosswalk was developed for approximately four percent of projects in the study.

In addition to the data collected from the 50058/50059 Form, field interviewers collected data from the tenant files to document the determination of tenant eligibility and the calculation of rent. A series of Documentation Forms were created for this purpose. The Documentation Form data were entered directly into the HDCS system. The Documentation Form module also collected information indicating whether the income, asset, household composition, or expense information used by the PHA/owner was verified. HDCS compared data from the 50058/50059 Form with that entered into the Documentation Forms module and alerted the field interviewer to possible data entry errors so that data could be reviewed and any necessary corrections made immediately, while the file documents were easily accessible.

During the Documentation Form data entry phase, documents from the file were photocopied when appropriate and sent to Macro weekly. In addition to earned income documentation, field interviewers were requested to photocopy file documents that provided information that was missing from the 50058/50059 Form if that information was necessary to calculate QC rent (i.e., number of bedrooms), any Earned Income Disregard documentation in the file, and the 50058/59 itself when appropriate. The photocopies were used to insure the accuracy of QC rent.

Interviewing Tenants. An adult household member (preferably the head of the household) was interviewed in person using CAPI for this study. Interview questions focused on family composition, sources and amounts of income, assets, and applicable expenses. Data were collected for the same point in time as when the (re)certification was conducted. HDCS compared data from the 50058/50059 Form with that entered during the interview to alert the interviewer to possible errors.

Requesting Verification from Third-Party Sources. When there was no evidence in the tenant file that the PHA/owner verified the information used for calculating rent, or the existing verification information did not meet requirements agreed to for this study,[5] Macro requested verification from the appropriate third-party sources. Verification was also requested from third parties when household interviews resulted in the identification of sources of income that were not shown in the tenant files. Tenants signed release forms during the household interview so that third-party verification of income and expenses could be obtained. Third-parties completed the forms and returned them to Macro.

Matching Social Security Data. Sample household members were matched with Social Security Administration (SSA) files by HUD. Using the output from this match, the Social Security and SSI benefit, and Medicare premium data for all household members were identified. These data were considered third-party verification during the final QC rent determination.

D. Field Data Collection Time Periods

Data were collected in the field between January 2007 and June 2007 for the certification or annual recertification that occurred during FY 2006 (October 2005 through September 2006)[6]. Field interviewers collected data related to actions that may have occurred up to 20 months prior to the file abstraction and household interview. One of the challenges of collecting data to document actions taken in the past is developing methodologies to ensure data are collected for the situation that existed at the selected point in time. For the respondent in the household interview, recalling details of life situations at a past point in time presents difficulties. This may be complicated by the fact that some respondents in this population may have unstable situations resulting from inconsistent income or changing numbers of household members. In light of this, strategies were developed to ensure consistent and accurate collection of data across program types, projects, and households in the study. Two of the strategies developed that were of primary importance to the data collection are described in this section.

Quality Control Month. The month for which data were collected is referred to as the Quality Control Month (QCM). This month represents the date the rent calculation for the certification or annual recertification (conducted in FY 2006) was completed. For most households in the owner-administered programs, the QCM is the month in which the project manager (or other authorized housing project staff member) signed the 50059 Form, certifying that the information contained on the form was correct. The rent calculation date on the 50058 Form was the "date modified" printed on the form. If these pieces of information were not available on the 50058/50059 Form, the field interviewer used other documentation in the tenant file to determine when the action was taken.

After the QCM was established, the data from the 50058/50059 Form corresponding to the QCM was entered into HDCS. The data from the documents used by the project staff to verify information on the 50058/50059 Form in the QCM were also entered in a separate HDCS module. The household interview was conducted with frequent reminders to the respondent that questions were being asked as of the QCM.

[5] For purposes of this study, verification was acceptable if it was in writing, received from the third party, and dated 60 days before or 30 days after the (re)certification was completed.

[6] To account for delays between the time the work is completed by the PHA/project staff and the effective date of the (re)certification, actions effective in October 2006 were included in the FY 2006 study.

Note: If the recertification was overdue by more than 12 months, the QCM was moved forward in 12-month intervals to a point in time within FY 2006. In this situation, during the household interview, the respondent was questioned about circumstances for the month in which the recertification would have been completed had the housing project staff completed it on time. In rare situations, when the rent was calculated after the effective date of the action (because of retroactive adjustments) the QCM is the earlier of the two dates—the rent calculation or the effective date of the action.

Third-Party Verification Rules. Occasionally the verifications found in the file for household composition, income, asset, and expense items were different than those required by HUD. In addition, files were likely to contain verification documents other than those intended to support the (re)certification corresponding to the QCM. To ensure that the data from the right documents (those that had been gathered to verify the information on the 50058/50059 Form being reviewed) were entered in to HDCS, and to apply rules fairly and consistently across all households in the study, a set of rules defining acceptable verification were developed. For purposes of this study, verification was considered acceptable if it was *in writing, was received from a third party, and was dated 60 days before or 30 days after the date the (re)certification was completed*. Field interviewers were given detailed instructions on the various types of documents they were likely to find in the file and how to classify them. The date and type of verification for each household, income, and expense item was entered in to HDCS during file abstraction. The HDCS system informed the interviewer if any items did not meet the verification requirements of the study. For the items that did not meet the requirements, the field interviewer requested written verification from the appropriate third party.

E. Constructing the Analysis Files

The initial database consisted of five separate files that included abstracted 50058 and 50059 Forms, tenant file information from the Documentation Form module, information from the household interview, and the third-party release forms. Data fields were at both the member and household levels, with income and expense items in hourly, weekly, monthly, or annual amounts. Macro constructed an analysis file that annualized all income and expense data at the household level. For some items, such as stable income from Social Security, this calculation was relatively easy. For other items, such as seasonal employment or medical expenses, annualizing income or deductions was more complicated. A unique linking variable was created to compare information abstracted from the 50058/50059 Form and other file documentation with information obtained in the household interview and received from third-party verification. This variable specifically identified the income/asset/expense and household member to which it belonged.

For the calculation of rent error, the final analysis files contained income and expense/allowance data aggregated at the household level in annual amounts. Rent data were in monthly amounts. Separate files were created for the analysis of issues such as verification, internal 50058/50059 Form errors, and occupancy standards.

F. Rent Formulae

HUD uses specific formulae for determining tenant rents for each of its programs. The formula for determining the Total Tenant Payment (TTP) is the same for all programs except Sections 202 PRAC, 811 PRAC, and 202/162 PAC. The TTP is the greater of:

1) 30 percent of a household's adjusted monthly income, which is one-twelfth of the total of all household members' earned and unearned income (other than those amounts specifically excluded by HUD or PHA policy), less allowances for elderly/disabled households and for household dependents, and deductions for disability, medical, and child care expenses.

2) 10 percent of a household's gross monthly income with no allowances or expense deductions.

3) The welfare rent in as-paid states (New York was the only as-paid state in this study).

4) The minimum rent ($25 for owner-administered projects, or an amount established by the PHA, not to exceed $50).

The formula for determining the TTP for the Sections 202 PRAC, 811 PRAC, and 202/162 PAC programs includes steps (1) through (3) above, but there is no minimum rent requirement for these programs.

There are five different rent calculations used to calculate the actual amount of the household's rent depending on the program type. For the Section 8 Voucher program, household-specific characteristics also affect the calculation. These five rent calculations include:

- Public Housing
- Section 8 Project-Based (including Moderate Rehabilitation), Sections 202 PRAC, 811 PRAC, and Section 202/162 PAC
- Section 8 Vouchers
- Section 8 Enhanced Vouchers (there were no Enhanced Voucher households in the study)
- Manufactured Home Space Rental for Section 8 Vouchers (there were no households in the study sample that met this criterion)

The household rent was calculated after data from all sources were collected. When calculating rent, a cap was placed on the maximum amount of rent the tenant was required to pay. For all Section 8 programs, this is the *Gross Rent*. In the Public Housing program, this is the *Flat Rent*. If the Flat Rent was not available, the *Ceiling Rent* was used to cap the rent. The rent is not capped for the Section 202 PRAC or Section 811 PRAC programs.

Additional rent calculations were necessary for households with ineligible noncitizens. Determining the correct rent for these households is a multi-part process that first determines whether the household is entitled to continued assistance, or temporary deferral of termination of assistance, and then prorating the rent if appropriate. Two proration formulae were used—one for Public Housing and one for all Section 8 programs.

The algorithms for the rent calculation formulae can be found in Appendix A.

G. Calculation of Rent Error

The monthly rent algorithms used by Macro to calculate the national estimates of error are the following:

- **Actual Rent:** The monthly rent indicated on the 50058/50059 Form. If this item was missing on the 50058/50059 Form, the Actual Rent was taken from another official document in the file.[7]

- **Quality Control Rent:** The monthly rent calculated by Macro using all of the verified household information.[8]

Rent error was calculated by subtracting the QC Rent from the Actual Rent. A discrepancy of $5 or less between the monthly Actual and QC Rent was not considered to be an error. The $5 window was used to allow for minor calculation and rounding errors, and to focus the data analysis on major sources of error.

H. Quality Control Rent

Macro calculated QC Rents using the best available information. Every effort was made to use data that would have been available to the PHA/project when determining which data to use in the QC rent calculation. Each income and expense item was processed individually. For each item, Macro first used available verification from the project files. If acceptable verification was not available from the tenant file, verification was requested from an appropriate third party (see Section II-D for a discussion of acceptable verification). If the verification was not returned by the third party and the tenant file did not include verification, information obtained during the household interview was used. The following special procedures were followed when calculating the QC Rent as appropriate:

- Income that started after the QCM was not counted when calculating the QC Rent.

- Income that ended after the QCM was counted for the full year unless it was clear that the PHA/owner knew that this income was going to end.

- Earned income bonuses were not counted unless it was clear that the bonus was paid on a regular basis.

- Temporary Assistance to Needy Families (TANF) and Other Welfare income were treated as the same source of income so that income listed as TANF on one form (e.g., the household questionnaire), and Other Welfare on another form (e.g., the Documentation Forms) would not be counted twice.

[7] Rent Roll data was not used as a substitute for Actual Rent because a previous study found that the Rent Roll sometimes included amounts to make up for previous unpaid rent, fines, or damages, etc.

[8] Attempts were made to verify items that were not verified by PHA/owner staff; however, verification was not always obtained. If verification was not available, other information from the tenant file or information obtained during the household interview was used to calculate the QC rent. When calculating QC rents, codes were assigned to indicate which rents were based on verified information and those for which the income/expense information was only partially or not verified.

- Welfare (TANF and Other Welfare) income, Child Support income, and Child Care expenses were treated at the household level instead of the member level so that the same source of income associated with one member (e.g., the head of household) on one form, and another member (e.g., a child) on another form would not be counted twice.

- Disability status is not identified in the Social Security match data for household members receiving Social Security benefits. It is, however, provided for household members receiving Supplemental Security Income (SSI) benefits. Therefore, if unreported Social Security benefits were identified, the disability status code from the SSI section of the data was used to determine the disability status for the recipient of the Social Security benefit.

- Passbook rates (for determining the imputed income from assets) for PHA-administered programs were taken from the project-level information provided by PHA/owner staff. The passbook rate for owner-administered programs is 2 percent.

- For new certifications, the low and very low income limits were obtained from HUD's Web site.

- When determining the prorated rent for Public Housing households with ineligible noncitizens, if the Maximum Rent was not present on the 50058 Form, the Fair Market Rent (FMR) was used instead of the 95th percentile of Gross Rent because the 95th percentile of Gross Rent was not available.

- The values from the 50058 Form were used for Minimum Rent, Gross Rent, Payment Standard, and Flat Rent unless the value was missing, in which case the missing value was taken from the PHA/project-level information provided by PHA staff.

- The values from the 50059 Form were used for Gross Rent and Contract Rent unless the value was missing, in which case the missing value was taken from the project-level information provided by owner staff.

- Welfare rent for the State of New York was taken from the project-level information provided by PHA staff.

- A separate verification code was used to identify verification obtained from the Enterprise Income Verification (EIV) system. When Social Security, SSI, or Black Lung benefits were verified with EIV, the verification was considered third party, in writing (this is also true for verification obtained through TASS). If EIV information was in the file for earned income or unemployment benefits, the dates associated with the form were examined to determine if the PHA/project staff had access to the EIV information at the time of the (re)certification. Copies of EIV (as well as other types of verification of earned income found in the tenant file) were sent to Macro headquarters and reviewed by data quality specialists to prevent mistakes in calculating the QC earned income value.

I. HUD Requirements Complicating the Analysis

Several HUD requirements affected the data collection methodology and subsequent analysis. As noted in Section II-A, relevant HUD requirements were incorporated in the study standards

used to determine error. All data collection procedures and analyses were developed on the basis of these study standards. Though most standards were easily implemented, several were more problematic and they complicated the data collection or analysis, as discussed below.

Anticipated Income. The amount of rent a household will pay is determined on the basis of *anticipated* household income and deductions for the 12 months following (re)certification. For households with a stable income source like Social Security or steady employment, annual income estimates for the next 12 months are relatively accurate. However, many assisted households have members with seasonal employment or members who move in and out of the household. Also, certain expenses such as medical expenses (for elderly/disabled households) and child care costs may be very difficult to anticipate. Determining whether such income and expense amounts were figured correctly at the time of recertification is very difficult when data are collected after the changes occurred. Every effort was made to treat questionable income or expenses in the same manner as PHA/project staff treated them. Several of the special procedures described in Section II-H were created for this purpose.

Third-Party Verification. HUD regulations require that the information supplied by residents at (re)certification be verified by third parties (e.g., employers, the Social Security Administration, banks, medical personnel). Field interviewers obtained release forms from the households when evidence of verification was not present in the tenant's file and they then requested verification from the appropriate third parties. However, some third parties did not respond, others returned information for incorrect time periods, others required payment for the information requested, and other problems were encountered in obtaining the correct verification. Follow-up requests for missing verification were not made in all cases due to time constraints.

Macro and HUD established a set of verification rules to determine whether an item was verified. Section II-D shows the rules used to determine if verification was acceptable and for each matched item used in the rent calculation. Verification rates for different rent components are in Tables 1a–1f (in Appendix C) and Exhibit IV-1 in Section IV-B.

Earned Income Disregard. The regulations governing the Public Housing and the Section 8 Voucher programs require PHAs to exclude a portion of earned income for households meeting certain criteria. Only participants in these programs—not applicants entering the programs—are eligible for this income exclusion.

To identify households eligible for the earned income disregard, tenants were asked about training and self-sufficiency programs during the household interview. Ninety-two household members were identified as possibly being entitled to an earned income disregard.

For these household members, we examined the tenant file information on the 50058 and the Documentation Forms. We compared the QC calculated earned income exclusion (using the household questionnaire information) with the earned income used by the PHA when calculating the total annual income. When determining whether a household member was entitled to an earned income disregard because of unemployment, we reviewed income match data available from the NDNH.

In 64 (of the 92) cases, the PHA/project did *not* give an earned income disregard. In 60 of these cases, the QC calculated earned income disregard also indicated that the disregard was not

applicable. In 28 (of the 92) cases the PHA/project did give an earned income disregard. In 26 of these cases, the QC calculated earned income disregard also indicated that the disregard was applicable. When both the PHA *and* the QC calculation indicated an EID was appropriate, the actual amount of the EID matched in 15 of the 26 cases. However, given the complexity of the earned income disregard determination and the possibility that the QC data collection process missed critical information necessary to determine the EID, no error was attributed to the EID. If the PHA disregarded earned income, the same exclusion was used when calculating the QC earned income.

It should be noted that the policy related to the earned income disregard requires the PHA staff to keep and verify a historical record of household member's employment and participation in self-sufficiency incentive programs. The policy is hard to follow and subject to interpretation by the staff involved. This makes reviewing and determining whether the policy has been followed correctly extremely difficult.

Training Programs. The regulations governing all housing programs included in this study require PHA/owners to exclude all amounts received under training programs funded by HUD, and the incremental earnings and benefits resulting to any family member from participation in qualifying State or local employment training programs.

To identify households eligible for the training program exclusions, the field interviewers documented training program information found in the tenant file and provided during the tenant interview. Seventeen household members claimed to have been enrolled in training programs. Only one of these 17 household members was found to be eligible for a training program income exclusion. This exclusion was applied by both the PHA and during the QC process.

Permissible Deductions. Public Housing programs may adopt deductions from annual income in addition to HUD's required deductions. To make sure that the appropriate additional permissible deductions were taken into consideration when determining the adjusted annual income, we looked at two sources. First, we looked at items 8b through 8e on the 50058 Form where the type and amount of permissible deductions were recorded. Second, we asked a question in the Project Specific Information request to identify additional exclusions adopted by the Public Housing PHAs. We found that many PHAs use the Permissible Deduction section (items 8b through 8e) of the 50058 Form to record all kinds of information that have nothing to do with permissible deductions. Therefore, we had to rely on the Project Specific Information request to determine whether the items listed on the 50058 Form were in fact additional permissible deductions. On the basis of the information obtained through the Project Specific Information requests and the 50058 Forms, eight households representing six PHAs were entitled to permissible deductions. In three cases the net earned income was used instead of the gross earned income; in one case the percent of FICA tax (7.65%) was deducted from gross earned income; in one case 10 percent of earned income was subtracted from earned income; in one case $1000 was subtracted from earned income; in one case child support payments were not counted; and in one case $580 for transportation costs was subtracted from earned income. The permissible deduction applied for QC purposes was exactly the same as the permissible deduction allowed by the PHA.

Flat Rent. Households that elected to pay a flat rent rather than an income-based rent were included in the study. For these households there is no rent error. The QC rent is the same as the Flat Rent used by the PHA. There are 50 flat rent cases in the study sample. It should be noted

that determining if a household is paying the flat rent is not always easy because of contradicting data within the 50058 Form. For most cases, items 2a-Flat Rent Annual Update, and 10u-Type of Rent Selected could be used to identify whether the household is paying the flat rent instead of income-based rent. However, if these two items contradicted one another, notations from other documents in the file were taken into consideration.

Ineligible Noncitizens. HUD regulations require that rent be prorated for households with ineligible noncitizens unless the household meets certain criteria that allow continuation of full assistance. Macro reviewed all households with ineligible noncitizens to ensure that the rent was calculated correctly. No households with ineligible noncitizens were entitled to continuation of full assistance. Less than one percent of the households in the study included an ineligible noncitizen.

Reduced or Terminated TANF Benefits. The regulations governing Public Housing and PHA-administered Section 8 programs included in the study require using the amount of the TANF benefit before reduction or termination, resulting from fraud or failure to cooperate with the welfare family self sufficiency program. To identify households with reduced or terminated TANF benefits, tenants were asked during the household interview about previous receipt of TANF and whether their TANF benefits were reduced during the household interview.

If the TANF benefits were reduced or terminated due to fraud or failure to comply with the welfare family self sufficiency requirements, the value of the TANF benefit before the reduction or termination was used in the QC Rent calculation.[9] The TANF benefits in 48 households were reviewed and in all cases the PHA/project was accounting for TANF correctly.

Students. The regulations governing PHA-administered programs included in the study require that students age 18 or over but under age 24 meet certain criteria. If these criteria are not met, the student's parent's income must be included when determining if the student meets the program's financial requirements. For households with students, field interviewers documented student enrollment and member characteristics found in the tenant file and provided during the tenant interview. These households were reviewed to determine if the student met the special student criteria as defined by HUD regulations. Eighteen cases were reviewed and all were correctly receiving housing assistance.

[9] The value of this reduced or terminated TANF is offset by the amount of additional income the family received that started after the time the sanction was imposed.

III. Study Objectives and Analytic Methods

This section presents the 14 study objectives and a brief description of the methodology used to meet them.[1]

Objective 1: Identify the various types of rent errors, rent error rates, and calculate their variance estimates.

The types of errors and error rates in the 2000 through FY 2005 studies are replicated in the FY 2006 analyses. These errors include percent of households paying correct and incorrect rent, dollar error amounts, and dollar error rates. Variance estimates (standard errors) are provided for selected error rates. Errors are determined by recalculating the tenant rent on the basis of verified QC information and subtracting this amount from the tenant rent indicated on the 50058/50059 Form (Actual Rent). The following three types of dollar rent error estimates were calculated:

Dollar Rent Error—The difference between the *monthly* Actual Rent and the *monthly* QC Rent (i.e., Actual Rent minus QC Rent). A household rent is found to be in error if the difference between the Actual Rent and QC Rent is greater than $5, while "proper" rent payments reflect differences of $5 or less. Rates of exactly matching Actual and QC rents (within $1) are also presented. Simple percentages of the number of households paying the proper and exact rents are reported, as well as the percentage of households in error per program, the average gross dollars in error, and the percentage of rent dollars in error. For households who were ineligible when initially certified, the QC Rent is the flat rent for Public Housing households, or the Housing Assistance Payment (HAP) for Section 8 programs. The dollar error is this amount minus the Actual Rent.

Total Component Dollars in Error—The absolute sum (i.e., the sum of the positive and negative amounts, ignoring the plus or minus signs) of all individual income and expense component errors. These errors are combined to provide an overall Total Dollars in Error and are presented as *annual* amounts[2]. A dollar amount of rent overpayment and underpayment was calculated for each component with identified error; however, some of these errors were overlapping or offsetting. For example, earned income may have been underreported while—perhaps because of a calculation error—Supplemental Security Income may have been overstated. The net difference could be zero, or a positive or negative amount.

Largest Component Dollar Error—The *annual* dollar amount of error for the income or expense components with the largest error. Income and expense components include the five sources of income (earned, pension, public assistance, other income, and assets) and the five types of deductions (medical, child care, and disability assistance expenses, dependent allowance, and elderly/disabled allowance). If the component with the largest error is earned income, the largest dollar error would reflect the difference between the earned income used by the PHA/project, and the earned income used in the QC rent calculation.

[1] See *Analysis Plan for the FY2006 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations*, an unpublished Macro report to HUD, dated August 30, 2006, for a more detailed description of the methodology.

[2] Because dollar component errors (CE) are reported on an annual basis while dollar rent errors (RE) are reported on a monthly basis, and rents are generally set at 30 percent of adjusted income, component errors are usually 40 times the corresponding rent error (.30 * CE = 12 * RE, or CE = (12/.30) * RE = (120/3) x RE = 40 * RE).

The dollar error rate is used for other error calculations, including the National Rent Error Rate and Net and Gross Error Rates. The latter error calculations link errors in the rent determination process to dollar error rates, sparking new oversight practices to better manage HUD subsidies.

Objective 2: Identify the dollar costs of the various types of errors.

Five types of administrative errors are linked to rent errors. Data obtained directly from the 50058/50059 Form as well as project and tenant information from the tenant file are used to identify and measure each of the following error types:

- Calculation errors
- Consistency errors
- Transcription errors
- Incorrect determination of allowances and income sources
- Overdue recertifications

Calculation errors are detected by recalculating section subtotals and the final rent based on the exact information on the 50058/50059 Form. The tenant rent is calculated using the detailed information on the 50058/50059 Form and compared to the actual tenant rent on the 50058/50059 Form. If the two rents differ, there is a calculation error.

Consistency errors are determined when there is a lack of logical conformity between elements within the 50058/50059 Form. For example, the Effective Date of Action must be on or after the Date of Admission. Elderly status information must be consistent with information about the age of the head of household or spouse.

Transcription errors are detected by comparing 50058/50059 Form data with information in the tenant file. If the 50058/50059 Form data for a specific income or expense item does not match the tenant file data, a transcription error exists.

Incorrect determination of allowances and income sources are identified by taking tenant file information and comparing it with the 50058/50059 Form data. Allowance errors are detected by calculating the allowances based on the tenant file information and comparing this QC allowance with the Actual Allowance on the 50058/50059 Form. Similarly, income is calculated based on the types and amounts of income reported in the tenant file. The improper application of allowances and incorrect calculation of income are a subset of transcription errors.

Overdue Recertifications produce rent errors because rents are based on out-of-date information. For households with overdue recertifications, the QC information is based on the month the recertification should have been completed rather than when it was completed.

Objective 3: Estimate the national-level costs for total error and major error types.

This analysis includes determining the National Rent Error Rate, the numbers and proportions of households found to be in error, and the dollar amount of rent error and the proportion of total dollars found to be in error. Sample data are weighted to provide national estimates.

Objective 4: Determine the relationship between errors detectable using the HUD 50058 and HUD 50059 Forms and total errors found in the study.

As discussed under Objective 2, calculation and consistency errors identify mistakes made by the housing project staff. Under Objective 4, households with calculation and consistency errors are compared to households with QC errors to determine if error found within the 50058/50059 Form can be used to predict QC error.

Objective 5: Determine whether error rates and error costs have statistically significant differences from program to program.

This analysis presents differences in error rates by program type. Data are provided for three program groups: Public Housing, PHA-administered Section 8 (Section 8 Vouchers and Moderate Rehabilitation programs), and owner-administered (Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC). The gross and net error rates are provided for each of these program types. The gross error rate is the sum dollar amount of gross error divided by the sum dollar amount of QC Rent, and the net error rate is the sum dollar amount of net error divided again by the sum dollar amount of QC Rent.

Objective 6: Determine the apparent cause of significant rent errors, either on a sample or a comprehensive basis, to provide HUD with information on whether the error was caused primarily by the tenant or by program sponsor staff.

As was done in the previous studies, we provide descriptive information on the sources of discrepancies between housing file information and verified information, and describe the incidence of administrative errors and their impacts. We also examine whether failure to verify sources of income and expenses contributes to QC error. Multivariate analyses using administrative errors and income components as independent variables are performed to identify how these errors affect the QC Dollar Rent Error.

Objective 7: Determine the extent to which households are overhoused relative to HUD's occupancy standards.

This objective addresses whether households reside in units with the correct number of bedrooms. Generally acceptable HUD guidelines specifying the appropriate size unit for assisted households are shown in Exhibit III-1.[3]

For most programs, the rules are not based solely on household size and allow discretion on the part of the project staff. All programs allow exceptions to these rules. This study replicates the

[3] Local projects have discretion in determining unit size, and may determine unit size differently than shown.

analyses in the previous studies that identified bedroom size and program, and the proportion of households in compliance with and in violation of occupancy standards according to the guidelines in the table below.

Exhibit III-1
PHA-Administered Section 8 Unit Size Standards

Number of Bedrooms	Number of Persons in Household	
	Minimum	Maximum
0	1	1
1	1	2
2	2	4
3	3	6
4	5	8
5	7	10

Objective 8: Provide information on the extent to which errors are concentrated in projects and programs.

Further descriptive analyses are conducted to examine whether errors are concentrated within or are randomly distributed across PHAs/projects. Multivariate analyses are conducted with the tenant as the unit of analysis. Tenant and PHA/project characteristics were analyzed as independent variables predicting error rates. This analysis identified how each of these variables contributes to rent error. The results will help guide HUD's management of error rates and elaborate relationships between management practices and project/tenant characteristics that affect error rates.

Objective 9: Identify the percentage of newly certified tenants who were incorrectly determined eligible for program admission.

Incorrect initial eligibility determinations create long-term problems for assisted-housing programs. Newly certified households are reviewed to determine whether they met the eligibility requirements for assisted housing.

Five eligibility requirements reviewed at initial certification are not a part of the recertification process (and thus not confirmed on an ongoing basis): definition of family, citizenship, verification of Social Security numbers, signing consent forms, and low and very low income limits. This study did not investigate the definition of family because it is determined by the PHA or owner. Therefore, findings are provided on four of the five initial certification criteria. This study also did not include suitability factors that PHA/owners may use in selecting tenants—factors such as tenant histories, histories of drug use or criminal activity.

Objective 10: Determine the extent to which Section 8 voucher rent comparability determinations are found in the tenant file, and indicate the method used to support the determination. Determine whether voucher payment standards are within 90-110 percent of fair market rents, and determine whether the correct utility allowances are being used.

To comply with the rent reasonableness requirement, housing authorities must determine that Section 8 voucher rents are reasonable in comparison with rents for similar housing in the private, unassisted market. Using information collected from tenant files, we estimated the proportion of Section 8 voucher recipients with comparable documentation. For those with documentation, we classified the type of evidence cited in the tenant file documentation (e.g., no evidence, cited market estimates for comparable units, or the rents of one or more units considered to be comparable). We present weighted proportions of voucher recipients with rent comparability data.

Additionally, payment standard data from the 50058 Form are compared with FMR data to identify the households whose payment standards fall outside the 90–110 percent FMR band. Utility allowance schedules are likewise matched to tenant files to evaluate the issues associated with independently evaluating utility allowances as a potential component of rent error.

Objective 11: Estimate the total positive and negative errors in terms of HUD subsidies.

Proper payments are those in which the Actual Rent equals the QC Rent. Errors can be either overpayments (Actual Rent greater than QC Rent) or tenant underpayments (Actual Rent less than QC Rent). Overpayment error rates were calculated by dividing the total amount of overpayment by the total QC Rent; underpayment error rates were calculated similarly by dividing the total amount of underpayments by the total QC Rent.

Objective 12: Determine the extent to which error rates in projects that use an automated rent calculation system differ from errors in those that do not.

We investigated the relationship between using an automated rent calculation system and project-level gross error rate using an Analysis of Variance. We also examined whether gross rent error differed significantly by computer use between programs.

Objective 13: Determine whether other tenant or project characteristics on which data are available are correlated with higher or lower error rates.

To respond to this objective, we use multivariate analysis to conduct more detailed analyses of differences among PHA/projects and provide HUD with more information for identifying projects and tenants likely to exhibit high error rates.

Objective 14: Determine whether cases for which 50058/50059 Form data had been submitted to HUD were more or less likely to have errors than those for which data had not been submitted.

The QC sample was matched to the TRACS/PIC data. Analysis was conducted to compare the average dollars in error for households included in TRACS/PIC with those that are not.

IV. Findings

A. Overview

Analyses were conducted using weighted sample data for the 2,407 households in the sample.[1] Data are presented by the three program types that were the basis for the sampling design—Public and Indian Housing (PIH)-administered (Public Housing), PIH-administered Section 8 Housing Choice Voucher, and Moderate Rehabilitation programs (PHA-administered Section 8); and Housing-administered Section 8, Section 202 PRAC, Section 811 PRAC, and Section 202/162 PAC programs (owner-administered). Each of the major study findings, the reasons for the errors, and other background information concerning these errors are discussed below. In many of the exhibits throughout the report, the data collected during the current study (referred to as the FY 2006 data) are compared with the data collected in a previous study. The data were collected and the analysis was completed for this earlier study (referred to as the FY 2005 data) in 2006.

This discussion is divided into ten parts: the errors in the rent amount based on the QC data (rent error), the errors in sources of income and expenses (component errors), the errors found using only project file data (administrative error), occupancy standards, analysis of the responses received from PHA/project staff regarding PHA/project practices (based on the Project Staff Questionnaire), multivariate analysis, findings related to rent reasonableness determinations, utility allowance analysis, payment standard analysis, and comparisons with PIC/TRACS data. The first three parts present different types of error.

Rent error is error that results in an actual dollar error. A dollar error means the household paid too much rent (an overpayment) or the household paid less rent than it should have paid (an underpayment).

Component errors are the income and expense components used to calculate rent. The income components are employment income, Social Security and pensions, public assistance, other income, and asset income. The expense/allowance components are elderly/disabled allowance, dependent allowance, medical expenses, child care expenses, and disability expenses.

Administrative Errors are errors that result from administrative mistakes. They consist of the following:

- Consistency errors—errors in logical conformity between elements within the 50058 or 50059 Form
- Calculation errors—arithmetic errors within subsections of the 50058 or 50059 Form
- Transcription errors—errors in transferring information from documentation in the tenant file to the 50058 or 50059 Form.

[1] Appendix B presents the procedure used in weighting the data.

- Failure to conduct a recertification in a timely manner
- Failure to verify information.

Component and administrative errors may or may not result in rent errors. Administrative errors tell us at what point during the rent determination process an error occurred, while the component errors tell us which income or expense caused the error. Data supporting the discussion are presented in the source tables found in Appendix C.

B. Rent Error

Overview. Rent errors were identified by subtracting the QC Rent from the Actual Rent.[2] The QC Rent was calculated using third-party verification whenever possible. If third-party verification was not available, information from the Documentation Forms or Household Questionnaire was used. The Actual Rent is the Tenant Rent from the 50058/50059 Form. As noted above, a household was considered to be correct (proper payment) if the QC Rent and the Actual Rent matched within $5. All exhibits included in this report (except IV-2) and all tables in Appendix C define households whose Actual and QC Rents matched within $5 as proper payments, except for the supplemental tables (designated by the letter "S"), which are based on exact matches between these two rents.

Definitions of Rent Errors. Dollar error can be determined by comparing the rent the household should have paid with what it was paying, or by identifying the percentage of the Federal subsidy that was paid in error. In this study, error was determined by the first method. The rent errors presented throughout this report were calculated in the following manner:

- **Dollar Rent Error** was calculated at the household level by subtracting the household's QC Rent from the Actual Rent. Note that these are *monthly* rents. A negative number indicates an underpayment, meaning the household paid less than it should have paid, and that HUD's contribution was higher than it should have been. A positive number indicates a household overpayment, meaning HUD's contribution was less than it should have been.

- **Gross Rent Error** is the absolute value (i.e., the sum of the absolute value of positive and negative Rent Error) of the Dollar Rent Error for the sample as a whole or a specified group of households. The Gross Rent Error functions simply as a measure of the magnitude of the errors. The dollar amounts presented in the tables are Gross Rent Error values, unless otherwise indicated.

- **Net Rent Error** is the arithmetic value (i.e., the sum of the negative and positive values of over- and underpayments) of the rent error.

- **Error Rate** is calculated by dividing the sum of the Gross Rent Error by the sum of the QC Rent, for the entire sample or a specified group of households.

[2] Rent error is determined on the basis of Tenant Rent, not TTP. Error based on TTP may differ from Tenant Rent because of the program specific rent formulas applied when calculating Tenant Rent. These rent formulas are listed in Section II-F and presented in detail in Appendix A.

Financial Impact of Identifying Rent Error. Reduction in the rent error associated with the programs included in this study does not mean there will be an overall savings in the costs associated with administering these programs. Given there are large numbers of eligible households on waiting lists, if a household leaves the program because it is no longer eligible for a subsidy, another household will take its place. The replacement household may be entitled to a smaller or a larger subsidy than the household that left the program. Therefore, the most direct benefit of identifying households with rent error is making sure those households who are eligible for the program are receiving the correct subsidy, rather than reducing the amount of funds needed to administer the programs. The most appropriate use of this study is as a tool for strengthening HUD's procedures for ensuring administrative compliance with regulations. The recommendations presented in this report may require greater rather than fewer resources to provide HUD, PHAs, and owners with the written policy guidelines and training, standardized forms, and on-going monitoring needed to assure the programs are administered correctly.

Verification Used in Determining the QC Rent. As indicated above, a set of rules was established for third-party verification (see Section II-D). If an income or expense component was used for a rent calculation and was not verified by the PHA/owner, Macro staff sought third-party verification. However, Macro verification could not be obtained for all PHA/owner unverified items despite considerable effort and expense[3].

Exhibit IV-1 shows the percentage of each rent component that was verified by either the PHA/owner or Macro.

Exhibit IV-1
Percent of Households Fully Verified by Either the PHA/Owner or Macro

	Third party Verbal or In-Writing, Documentation, or EIV		Third-Party In-writing	
Rent Component	**2005**	**2006**	**2005**	**2006**
Earned Income	90%	89%	76%	73%
Pensions, etc.	99%	99%	94%	91%
Public Assistance	91%	86%	71%	65%
Other Income	85%	83%	65%	65%
Asset Income	92%	86%	65%	66%
Child Care Expense	74%	75%	69%	68%
Disability Expense	40%	15%	40%	15%
Medical Expense	75%	74%	53%	54%

Source: Tables 1a and 1b, Appendix C

The first two columns present the percentage of rent components that were verified with third-party in-writing, third-party verbal, Documentation[4] or Enterprise Income Verification (EIV).

[3] If third-party verification was not available, documentation from the tenant file was used to calculate the QC rent. If neither third party nor file documentation was available, information collected during the household interview was used to calculate the QC rent.

[4] Documentation means documents submitted by the family such as pay stubs or bank statements, or a statement in the file indicating the project staff viewed an acceptable verification (but there was no copy in the file).

The remaining two columns present the percentage of rent components that were verified with the more stringent verification requirements for this study (i.e., third-party in-writing). As the table indicates, while primarily the percentage of households where the rent component was fully verified remained the same, there were some rent components (primarily Public Assistance) where the percentage of households where the rent component was fully verified decreased. It should be noted that since the sample size is quite small for Disability Expenses, the findings are not reliable national estimates and the apparently large decrease in verification should be considered with that in mind.

Tables C-1c, C-1d, and C-1e in Appendix C provide additional verification information by rent component. They present the number of households for which the income or expense component was not verified (i.e., no component items verified), partially verified (i.e., some component items verified), or fully verified (i.e., all component items verified). Table C-1c includes items that were verified verbally by a third party. Table C-1d provides data for items verified by file documentation, and Table C-1e provides data for items verified through the EIV system.

Proper Payments. Exhibit IV-2 shows the percentage of households with proper payments by program, for households where the Actual and QC Rents matched within $5 and where the Actual and QC Rents matched exactly. At (re)certification, the rent was calculated correctly (within $5) in 64 percent of the households, the same percentage as in FY 2005. There was an exact match of rent payment in 51 percent of households in FY 2006, compared to 50 percent in FY 2005. Given the standard error for the percent of households with proper payments is 1.2 percent for households where the Actual and QC Rents matched within $5, and 1.6 percent for households where the Actual and QC Rents match exactly, there is no change in the findings between these two years. In other words, the differences were likely due to random variation of the statistical estimates rather than actual changes across years. One significant cross-year difference was identified. The proper payment rate based on exactly-matched rent error for owner-administered projects in FY 2006 (52.5%) was significantly higher than that in FY 2005 (46.0%) at $p < .01$ level.

Exhibit IV-2
Percent of Households with Proper Payments

Administration Type	Percent of Households Within $5			Standard Error	Percent of Households Matched Exactly			Standard Error
	2004	2005	2006	2006	2004	2005	2006	2006
Public Housing	70%	66%	65%	2.0%	55%	53%	54%	2.0%
PHA-Administered Section 8	64%	63%	61%	2.0%	51%	51%	49%	2.0%
Total PHA-Administered	66%	64%	62%	1.0%	53%	51%	51%	2.0%
Owner-Administered	67%	63%	66%	2.0%	53%	46%	53%	2.0%
Total	66%	64%	64%	1.0%	53%	50%	51%	2.0%

Source: Table 2 and 2S, Appendix C

Households with QC Rent Error. Exhibit IV-3 shows the percentage of households in error, the average dollar amount in error, and error rate by program. Thirty-seven percent of the households have a rent error greater than $5, compared to 36 percent in FY 2005. The average gross dollars in error, calculated by dividing the sum of the dollar amount of gross error (i.e., the

sum of the absolute values of under- and overpayments) by the total number of households is $19 in FY 2006 matching the $19 average gross dollar error in FY 2005. The gross dollar error rate, calculated by dividing the sum of the dollar amount of Gross Rent Error by the sum of the dollar amount of the QC Rent, was 10 percent in FY 2006 compared to 9 percent in FY 2005.

Exhibit IV-3
Percent of Households with Error, Average Dollars in Error, and Dollar Error Rate for All Households with Error

Administration Type	Percent of Households with Error		Average Gross Dollars in Error		Gross Dollar Error Rate	
	2005	2006	2005	2006	2005	2006
Public Housing	34%	35%	$19	$15	9%	7%
PHA-Administered Section 8	37%	39%	$20	$23	10%	11%
Total PHA-Administered	36%	38%	$20	$21	10%	10%
Owner-Administered	37%	34%	$16	$17	8%	9%
Total	36%	37%	$19	$19	9%	10%

Source: Table 3, Appendix C

Underpayment and Overpayment Households. Exhibits IV-4a and IV-4b show the percentage of households and average dollar amount of error for all households when errors of $5 or less are excluded from calculations. Exhibit IV-4a and IV-4b present the error for underpayment and overpayment households, respectively. Nineteen percent of all households paid in excess of $5 less than they should have in FY 2006, as did 19 percent in FY 2005 and 18 percent in 2004. For the FY 2006 households, the average monthly payment error was $67, higher than the mean of $63 in FY 2005 but lower than the mean of $72 in 2004.

Exhibit IV-4a
Underpayment Households
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households In Error			Average Dollar Amount of Error: For Underpayment Households (with errors > $5)			Average Dollar Amount of Error: For All Underpayment Households		
	2004	2005	2006	2004	2005	2006	2004	2005	2006
Public Housing	17%	17%	19%	$81	$59	$54	$14	$10	$10
PHA-Administered Section 8	21%	20%	22%	$74	$70	$73	$15	$14	$16
Total PHA-Administered	19%	19%	21%	$76	$67	$67	$15	$13	$14
Owner-Administered	15%	18%	16%	$59	$55	$68	$ 9	$10	$11
Total	18%	19%	19%	$72	$63	$67	$13	$12	$13

Source: Table 3 and 4, Appendix C

As shown in Exhibit IV-4b, 17 percent of all households paid in excess of $5 more than they should have in FY 2006, compared to 18 percent in FY 2005, and 16 percent in FY 2004. The

average monthly overpayment for households with overpayment error was $36 in FY 2006, down from $39 in FY 2005 and $37 in FY 2004.

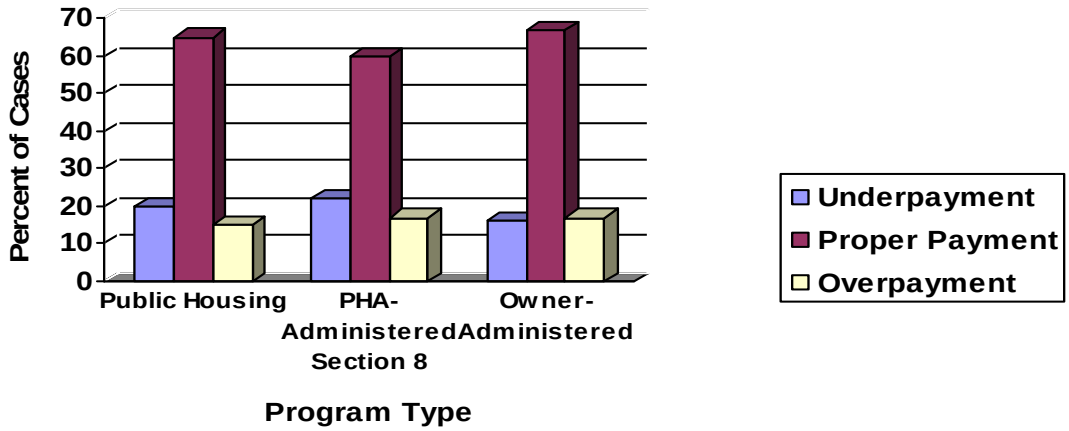
Exhibit IV-4b
Overpayment Households
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households In Error			Average Dollar Amount of Error: For Overpayment Households (with errors > $5)			Average Dollar Amount of Error: For All Overpayment Households		
	2004	2005	2006	2004	2005	2006	2004	2005	2006
Public Housing	14%	17%	15%	$40	$53	$31	$5	$9	$5
PHA-Administered Section 8	15%	17%	18%	$42	$38	$42	$6	$7	$7
Total PHA-Administered	15%	17%	17%	$41	$43	$39	$6	$7	$6
Owner-Administered	18%	19%	17%	$29	$31	$31	$5	$6	$5
Total	16%	18%	17%	$37	$39	$36	$6	$7	$6

Source: Table 3 and 4. Appendix C

Figure IV-1 shows the percentage of underpayments, proper payments, and overpayments by program type. Programs were grouped into three categories—Public Housing, PHA-administered Section 8, and owner-administered. Note that the majority of cases fall in the proper payment category for all program types. As indicated above, a household was considered to be correct (proper payment) if the Actual Rent and the QC Rent matched within $5.

Figure IV-1: Payment by Program Type



Gross and Net Dollars in Error. Exhibit IV-5 presents the gross and net average dollars in error and their associated standard error. To obtain the Gross and Net Rent Error, the dollar amount of overpayments is added to the dollar amount of underpayments, first using the absolute values for gross error, and then the arithmetic values for the net error. The net error measures the dollar cost of the errors and is -$7 (indicating a tenant underpayment) for FY 2006; the average

gross dollar error is $19 for FY 2006 and represents the dollars associated with the errors (the magnitude of the errors).

Exhibit IV-5
Gross and Net Dollar Rent Error (Monthly) for All Households

	Gross Rent Error				Net Rent Error			
	Average Dollars in Error		Standard Error		Average Dollars in Error		Standard Error	
Administration Type	2005	2006	2005	2006	2005	2006	2005	2006
Public Housing	$19	$15	$4.10	$1.54	-$1*	-$6	$2.94	$1.94
PHA-Administered Section 8	$20	$23	$2.33	$2.85	-$7	-$8	$2.68	$2.86
Total PHA-Administered	$20	$21	$2.11	$1.88	-$5	-$8	$2.15	$1.97
Owner-Administered	$16	$17	$1.49	$2.69	-$4	-$6	$1.57	$2.71
Total	$19	$19	$1.66	$1.79	-$5	-$7	$1.50	$1.79

Source: Table 5, Appendix C
* Difference at significance p < .05

Error Rates by Program. Differences in error rates by program were investigated and the results are summarized in Exhibit IV-6. Differences include Gross Error Rate, which is the sum dollar amount of gross error divided by the sum dollar amount of QC Rent, and the Net Error Rate, which is the sum dollar amount of net error divided again by the sum dollar amount of QC Rent. The Gross Error Rate is slightly higher for PHA-administered Section 8 programs than for either Public Housing or owner-administered programs.

Exhibit IV-6
Gross and Net Dollar Error Rates (Monthly) for All Households

	Error Rates	
Administration Type	Gross Error Rate	Net Error Rate
Public Housing	7.4%	-2.8%
PHA-Administered Section 8	11.2%	-4.1%
Total PHA-Administered	9.9%	-3.6%
Owner-Administered	8.7%	-2.9%
Total	9.6%	-3.4%

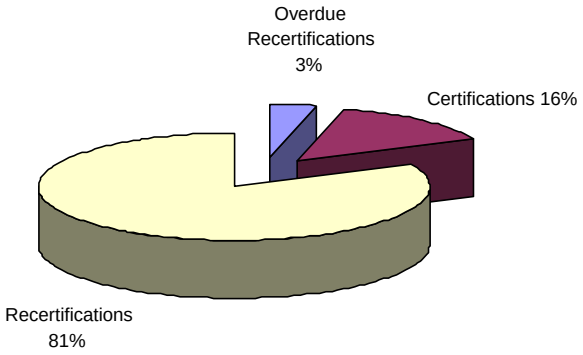
Source: Table 5, Appendix C

To determine whether error rates and error costs had statistically significant differences from program to program, multiple regression analyses with design effect adjusted were conducted to compare the three program types included in the study on percentages of proper payment (within $5), gross error, and net error. This analysis indicates the PHA-administered Section 8 programs seem to have moderate and statistically significant ($p < .01$) higher gross error and lower proper payment rate compared with the Owner Administered program; whereas no statistically

significant difference is found between Public Housing and Owner Administered programs. Note that upon entering covariates that represent household characteristics and financial conditions, these differences between Section 8 and Owner Administered programs become no longer significant.

Certifications/Recertifications. The sample households included both certifications (i.e., newly admitted households) and recertifications. Certifications were analyzed to determine if these households were eligible for HUD housing assistance and recertifications were analyzed to determine if they were overdue. Figure IV-2 presents the breakdown of cases by case type—certifications, recertifications, and overdue recertifications.

Figure IV-2: Case Type



Source: Table 6, Appendix C

Exhibit IV-7 shows the breakdown of the percentage of certifications, recertifications not overdue, and recertifications overdue, by program type. The exhibit indicates that in FY 2006 16 percent of the households were certifications, and 3 percent of the households were overdue recertifications. The findings indicate an increase in the percentage of certifications from FY 2005 (from 14 to 16%) and a slight decrease in the percentage of overdue certifications (from 4 to 3%).

Exhibit IV-7
Certifications and Recertifications by Administration Type

	Certifications		Timely Recertifications		Overdue Recertifications		Row Total By Year*
Administration Type	**2005**	**2006**	**2005**	**2006**	**2005**	**2006**	
Public Housing	16%	14%	80%	81%	4%	5%	100%
PHA-Administered Section 8	10%	15%	85%	81%	5%	4%	100%
Total PHA-Administered	12%	15%	83%	81%	5%	4%	100%
Owner-Administered	18%	17%	81%	82%	2%	1%	100%
Total	14%	16%	82%	81%	4%	3%	100%

Source: Table 6, Appendix C *Rounding error may result in totals not equal to 100%.

Certifications. Exhibit IV-8a presents a summary of the findings related to eligibility criteria and Exhibit IV-8b shows the percentage of newly certified households meeting the certification criteria by program type. The results indicate general improvement since the FY 2005 estimate.

The reviewed criteria included citizenship, Social Security number, signing the appropriate consent form, and qualifying as low income or very low income households. However, only those households that do not meet the appropriate low or very low income limit are ineligible for assistance. One hundred percent of the households (according to the QC Rent calculation) fell within the low-income limit for total gross income.

A household met the citizenship or Social Security number criteria if there was evidence in the tenant file that the citizenship or Social Security number was verified. The data indicate that a citizenship code (indicating whether each household member was a citizen, eligible noncitizen, or ineligible noncitizen) and a Social Security number was available (from either the tenant file or the household interview) for each household member. According to the citizenship codes, only two percent of the households had at least one household member for whom there was no verification of citizenship. This is a substantial improvement over the findings in the FY 2005 study. To meet the citizenship verification requirement, the file must have contained (for each household member) a signed declaration of U.S. citizenship or eligible immigration status; proof of age documentation; an INS card; or INS system verification of citizenship status, or documentation that the member was in process for verification or an INS hearing.

Three percent of the households had at least one member age six or over for whom there was no verification of their Social Security number. To meet the Social Security number verification requirements the file must have contained (for each household member six years of age or older) a copy of the Social Security card, or statement from the Social Security Administration verifying the Social Security number or a certification indicating the member does not have a Social Security number.

In 95 percent of the households, there was a signed consent form, dated within 15 months of the QCM (the date for which data were collected), for all members age 18 or over. Note that not meeting the Social Security number, citizenship, and consent form criteria may not mean the household was not eligible for assistance; rather, the project did not follow the HUD requirements in documenting the information.

Exhibit IV-8a
Percent of Newly Certified Households
Meeting Certification Criteria

Certification Criteria	Met Criterion	
	2005	2006
Citizenship	92%	98%
Social Security Number	95%	97%
Consent Form	93%	95%
Low and Very Low Income	100%	100%
Meets All Eligibility Criteria	86%	91%

Source: Table 7, Appendix C

Exhibit IV-8b
Percent of Newly Certified Households
Meeting Certification Criteria by Program Type

Certification Criteria	Percent of Households Meeting the Criteria		
	Public Housing	PHA-Administered Section 8	Owner-Administered
Citizenship	97%	100%	95%
Social Security Number	99%	98%	96%
Consent Form	92%	94%	98%
Low and Very Low Income	100%	100%	100%
Meets All Eligibility Criteria	88%	92%	92%

Source: Table 7b, Appendix C

Underpayments and Overpayments for Certifications, Recertifications, and Overdue Recertifications. Exhibit IV-9 presents a summary of the households with overpayments and underpayments by the type of case—certification, timely recertification, and overdue recertification. The Average Dollar Amounts are based on the sum of the dollar amounts for payment errors (either underpayment or overpayment) for the type of household (certification, overdue recertification, or timely recertification) divided by the number of households with that payment type (for whom a QC Rent could be calculated). For example, the sum of the dollar amounts for new certifications with monthly underpayments ($7.4M) was divided by the total number of certifications for whom QC Rent could be calculated (.65M). The result is an underpayment average dollar amount of $11.

The data indicate that the amount of underpayment dollar error in new certifications in FY 2006 is slightly less than the amount for recertifications. Overpayment dollar error in new certifications and recertifications is equivalent. As might be expected, there is a very large difference in the underpayment error for overdue and timely recertifications ($34 and $13, respectively).

Exhibit IV-9
Average Monthly Underpayment and Overpayment Dollar Amount
Averaged Across All Households

Household Type	Underpayment Average Dollar Amount		Overpayment Average Dollar Amount	
	2005	2006	2005	2006
Certifications	$8	$11	$6	$6
Timely Recertifications	$11	$13	$7	$6
Overdue Recertifications	$30	$34	$12	$20
Total	$12	$13	$7	$6

Source: Table 8, Appendix C

Subsidies. The actual cost of errors to HUD is expressed in terms of subsidy payments. For purposes of this study, HUD subsidies for the Section 8 voucher program equal the lower of the Gross Rent or the applicable Payment Standard minus the Tenant Share. For Public Housing, the subsidy is the applicable Payment Standard minus the TTP, and for Housing programs, the subsidy is the Gross Rent minus the TTP. The subsidy is correct if the Actual Rent equals the QC Rent (within $5). A negative subsidy error occurs when the tenant pays too much rent (QC Rent < Actual Rent). A positive subsidy error occurs when the tenant pays too little rent (QC Rent > Actual Rent). These subsidy errors by program type are summarized in Exhibit IV-10a and 10b, below. The subsidy errors by certification status are summarized in Exhibit IV-11.

Exhibit IV-10a
Negative Subsidy Households (Tenant Overpayment)
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error		Average Dollar Amount of Error: For Negative Subsidy Households (with errors > $5)		Average Dollar Amount of Error: For All Households	
	2005	2006	2005	2006	2005	2006
Public Housing	17%	15%	$53	$31	$9	$5
PHA-Administered Section 8	17%	18%	$38	$42	$7	$7
Total PHA-Administered	17%	17%	$43	$39	$7	$6
Owner-Administered	19%	17%	$31	$31	$6	$5
Total	18%	17%	$39	$36	$7	$6

Source: Tables 3 and 4. Appendix C
Note: Table results replicate Exhibit IV-4b for the convenience of the reader.

Exhibit IV-10b
Positive Subsidy Households (Tenant Underpayment)
Percent of Households and Average Monthly Dollar Amount of Error

Administration Type	Percent of Households in Error		Average Dollar Amount of Error: For Positive Subsidy Households (with errors > $5)		Average Dollar Amount of Error: For All Households	
	2005	2006	2005	2006	2005	2006
Public Housing	17%	19%	$59	$54	$10	$10
PHA-Administered Section 8	20%	22%	$70	$73	$14	$16
Total PHA-Administered	19%	21%	$67	$67	$13	$14
Owner-Administered	18%	16%	$55	$68	$10	$11
Total	19%	19%	$63	$67	$12	$13

Source: Tables 3 and 4, Appendix C
Note: Table results replicate Exhibit IV-4a for the convenience of the reader.

Exhibit IV-11
Average Monthly Dollar Amounts of Error for Negative (Tenant Overpayment) and Positive (Tenant Underpayment) Subsidies Averaged Across All Households

Household Type	Negative Subsidy Average Dollar Amount of Error		Positive Subsidy Average Dollar Amount of Error	
	2005	2006	2005	2006
Certifications	$6	$6	$8	$11
Timely Recertifications	$7	$6	$11	$13
Overdue Recertifications	$12	$20	$30	$34
Total	$7	$6	$12	$13

Source: Table 8, Appendix C
Note: Table results replicate Exhibit IV-9 for the convenience of the reader.

C. Sources of Error

Additional analyses examined which income and expense components contributed the most to rent error. It should be noted that the component dollar amounts are *annual* income and expense dollars, rather than the monthly figures used to present rent error data, and that rents are generally computed at 30 percent of adjusted income. Therefore, every $100 of income or expense error generally translates into $2.50 of rent error. In addition, the sum of the component errors is greater than net rent errors because of off-setting errors. For example, the household presented in the chart below has earned income and child care costs with errors in both components. The total component error is $1000 ($800 + $200); however, the adjusted net income error (the amount used to determine the household's rent) is only $600.

Example:

Component	File Data	QC Data	Dollar Error
Earned Income	$2,200	$3,000	$800
Child Care	$400	$600	$200
Adjusted Income	$1,800	$2,400	$600

Exhibit IV-12 presents each income and expense component included in the rent calculation and the percent of the households in error[5] where this component contributed the most to the gross error. The exhibit indicates that the largest average dollar error continues to be in earned come, with an average error of $4,544, in the 26 percent of households in error where earned income is the largest component error. Pensions were a component of error 25 percent of the time, with an average associated dollar error of $2,246. Medical expense was the next most frequent component, 17 percent of the errors with an average dollar error of $1,099. Other income was the largest component of error in 10 percent of households in error, with the associated average dollar amount being $2,488.

Between FY 2004 and FY 2005, average dollar error amounts had decreased substantially for all income rent components. In FY 2006, average dollar error amounts have shown modest

[5] The denominator in the percentage is the number of households with any component error, which was 36 percent of total households in FY 2006.

increases in all components except childcare, public assistance, and pensions. The largest component increase was in asset income which went up by over $800 in FY 2006 to an average dollar error amount of $1,733 compared to $911 in FY 2005. The largest component decrease was seen in childcare. In the 4 percent of households where child care expense was the largest component in error, the average dollar amount of error was $2,128 in FY 2006 compared to $2,766 in FY 2005, a decrease of over $600.

Exhibit IV-12
Rent Components Responsible for the Largest Dollar Error
for Households with Rent Error

Rent Component	Percent of Households in Error		Average Dollar Amount	
	2005	2006	2005	2006
Earned Income	20%	26%	$3,931	$4,544
Other Income	12%	10%	$2,365	$2,488
Pensions	21%	25%	$2,740	$2,246
Asset Income	3%	2%	$911	$1,733
Public Assistance	9%	9%	$2,118	$1,823
Child Care Allowance	5%	4%	$2,766	$2,128
Medical Allowance	21%	17%	$938	$1,099
Dependent Allowance	5%	3%	$552	$703
Elderly/Disabled Allowance	2%	2%	$400	$400
No Rent Component Error	3%	1%	$0	$0
Total	100%*	100%*	$2,210	$2,513

Source: Table 9, Appendix C *Numbers do not add up to 100% due to rounding.

Note that for some households the rent error is not caused by one of the ten components listed. Rather, it is caused by other arithmetic errors or using the wrong rent calculation formula. The number of households in this category decreased slightly from 3 percent in FY 2005 to 1 percent in FY 2006. The percent of households in error stayed the same or changed slightly for most rent components, with the largest increase in percent of households with earned income error, from 20 percent in FY 2005 to 26 percent in FY 2006.

Total and Largest Component Dollar Error by Program Type. Exhibit IV-13 shows the dollar amounts associated with the total dollars in error (the sum of the absolute value of errors in all rent components) and the largest dollars in error (the largest error attributable to a specific source for each household), by program type. There were increases in Average Total Dollars in Error from FY 2005 to FY 2006, with Owner Administered Housing showing the largest increase of $764. The Average Largest Dollars in Error only showed a slight increase in FY 2006, with the total for all programs increasing in average by $303 between FY 2005 and FY 2006.

Exhibit IV-13
Total and Largest Component Dollars in Error
for Households with Rent Error

Administration Type	Average Total Dollars in Error		Average Largest Dollars in Error	
	2005	2006	2005	2006
Public Housing	$2,677	$2,839	$2,197	$2,216
PHA-Administered Section 8	$2,989	$3,344	$2,512	$2,752
Total PHA-Administered	$2,889	$3,187	$2,411	$2,586
Owner-Administered	$2,072	$2,836	$1,786	$2,340
Total	$2,626	$3,083	$2,210	$2,513

Source: Table 10, Appendix C

QC Rent Components by Payment Type and Administration Type. Exhibit IV-14 shows the percentage of the total number of households with (and without) component error by component type and payment type. For example, seven percent of all households with underpayment rent error had errors in earned income, four percent of households with proper payment had errors in earned income and five percent of households with overpayment rent had errors in earned income. It also shows this information for PHA- and owner-administered households.

Exhibit IV-14
Rent Component Error by Payment Type for All Households

Rent Component	Underpayment			Proper Payment			Overpayment		
	PHA	Owner	Total	PHA	Owner	Total	PHA	Owner	Total
Earned Income	9%	4%	7%	6%	2%	4%	5%	4%	5%
Pensions	8%	7%	8%	9%	13%	10%	6%	8%	7%
Public Assistance	3%	2%	3%	3%	1%	2%	2%	1%	2%
Other Income	5%	3%	4%	4%	3%	4%	2%	3%	2%
Asset Income	2%	3%	2%	6%	5%	6%	3%	4%	3%
Dependent Allowance	2%	1%	1%	3%	<1%	2%	2%	1%	2%
Elderly/Disabled Allowance	2%	3%	1%	<1%	2%	2%	1%	--	1%
Child Care Allowance	1%	1%	1%	1%	<1%	1%	2%	1%	2%
Disability Allowance	--	--	--	<1%	--	<1%	--	--	--
Medical Allowance	4%	7%	5%	4%	11%	7%	6%	8%	6%
No Rent Component Error	<1%	<1%	<1%	36%	41%	38%	<1%	--	<1%

Source: Table 11, Appendix C

Exhibit IV-14 reflects component errors in proper payment households when the component dollar error results in a tenant payment error of $5 or less. The exhibit indicates that pension income is the rent component that has the highest percentage of error (15 percent = 8 percent underpayment + 7 percent overpayment), followed by earned income (12%) and medical allowances (11%). The components with the highest error remain the same.

Allowances. Elderly/disabled and dependent allowances were examined to determine whether these allowances were being applied correctly.[6] The findings are summarized in Exhibit IV-15. The exhibit shows the percentage of elderly/disabled and nonelderly/disabled households for which allowances were correctly or incorrectly applied. Elderly/disabled allowances were incorrectly used in five percent of the households in FY 2006. Seven percent of the elderly/disabled households received an incorrect allowance, while two percent of non-\elderly/disabled households received an allowance.

The exhibit also shows the percentage of households with and without dependents for which a dependent allowance was correctly or incorrectly applied. The dependent allowances were incorrect in six percent of the households. In less than one percent of the households, a dependent allowance was given to a household that did not have dependents. For the remainder of the households with dependents in error (12%), either a dependent allowance was not given when it should have been or the wrong allowance amount was given.

Exhibit IV-15
Elderly/Disabled Allowances and Dependent Allowances

	Elderly Allowance			Dependent Allowance		
Allowance	Non-Elderly/ Disabled Households	Elderly/ Disabled Households	All Households	Households Without Dependents	Households With Dependents	All Households
No Allowance	98%	<1%	45%	99%	--	52%
Incorrect Allowance	2%	8%	5%	1%	12%	6%
Correct Allowance	--	92%	50%	--	88%	42%
Total	100%	100%	100%	100%	100%	100%

Source: Tables 12a and 12b, Appendix C

D. Errors Detected Using Information Obtained From Project Files

To respond to HUD's interest in understanding the cause of errors, tenant rent was recalculated using only income and expense items documented in the tenant file. The source of information used for this analysis only included items that were clearly documented in the tenant file in a location other than the 50058/50059 form worksheet. If an item was recorded on the 50058/50059 form worksheet but not documented elsewhere in the tenant file, it was not included when the tenant file tenant rent was calculated for this analysis. Therefore, it is possible that some of the discrepancies identified between 50058/50059 rents and rents calculated solely based on file data were not, in fact, due to incorrect determinations but rather due to program sponsor failure to maintain information supporting income or expense items.

The outcome is that relying solely on information in tenant files may result in misstating the basis for the program sponsor income and rent determination and could lead to a determination that an error existed when the determination was actually correct. The fact remains that, even if a program sponsor made the correct income determination, failure to document the determination

[6] Households with an elderly or disabled head or spouse are entitled to one $400 allowance (i.e., deduction from gross annual income) in calculating rent. Households are entitled to a $480 allowance for each dependent (defined as children under 18, full-time students, and disabled members other than the head or spouse).

is and should be treated as a serious administrative problem. Also, in practice, it appears that these types of discrepancies are often suggestive of subsidy determination errors even if they cannot be assumed to prove the existence of such errors.

The findings from this analysis were compared to the quality control findings where tenant rent was calculated based on *all* the information collected during the study (including household interview data, and verification obtained by Macro through third party sources). Exhibit IV-16 shows the percent of households in error and the average dollar error with and without income and expense items identified during the household interview and verified by Macro through third party sources.

The data indicate that the income and expense items documented in the tenant file identify only about half of the cases with tenant underpayments (subsidy overpayments). The data regarding subsidy underpayments (tenant overpayments) indicate the tenant file more closely predicts the percent of households with subsidy underpayments, but overestimates the average dollar error associated with those households.

Exhibit IV-16
Findings With and Without Information Obtained from Sources Other Than the Tenant File

Error Source	Percent of Households in Error		Average Dollar Error	
	Subsidy Overpayment	Subsidy Underpayment	Subsidy Overpayment	Subsidy Underpayment
Error Based on *All* Income and Expense Items Identified During the Study	19%	17%	$67	$36
Error *Without* Income and Expense Items Identified during the Household Interview	9%	14%	$44	$71

Source: QC Tables 2 and 4, and Tenant File Table 2 and 4, Appendix C

Analysis of the errors on the 50058/50059 Form examined whether the errors identified using the 50058/50059 Form as a sole source of information are representative of the total errors in the program. The analyses focused on calculation and consistency errors:

Calculation error was identified from income, expenses, and allowances used to calculate the rent amount and recorded on the 50058/50059 Form. This calculation did not take into account whether dollar amounts were verified or whether the recertification was conducted on time. This analysis identified errors due to arithmetic mistakes, the incorrect use of a formula, and items that were not completed but should have been. This analysis did not identify households where items were recorded in the wrong place on the 50058/50059 Form, although improper use of a field on the 50058/50059 Form can result in a calculation error. Table C-13 in Appendix C presents the number of households with 50058/50059 Form that contained calculation errors by the rent component contributing to the error. The items considered when determining calculation error, are listed in Appendix D.

Consistency errors were based on the logical conformity of elements in the 50058/50059 Form. For example, the effective date of action must be on or after the date of admission, elderly status information should be consistent with household head and spouse ages, and number of dependents should not exceed the number of household members. Table C-14 in Appendix C

shows the number of households with consistency errors on the 50058/50059 Form, summarized by form subsections. Appendix D lists the data items by subsection that were included in this analysis.

Exhibit IV-17 shows the percentage of households with calculation and consistency errors by 50058/50059 Form subsections. It is important to emphasize that the 50058 Form is formatted differently and has more line items of information than the 50059 Form. Consequently, the number and types of calculation and consistency errors on the forms differ, and *findings from the two forms are not directly comparable*. In addition, the Office of Housing implemented a new version of the 50059 form in FY2006. This new form contains more information than the older version and in some instances is more comparable to the 50058 form. However, because the new 50059 form was not implemented until the middle of the fiscal year, the analysis in this section continue to categorize the data using the older version of the form. The large number of calculation errors (particularly on the 50058 Forms) may be a contributing factor to QC errors, though a calculation or consistency error does not necessarily lead to a rent error. The PHA/owner may make an error when completing one section of the form, and still calculate the rent correctly.

Exhibit IV-17
Percentage of Households with Calculation and Consistency Errors

50058/50059 Item	Percentage of Households					
	Calculation Errors			Consistency Errors		
	50058	50059	Total	50058	50059	Total
General Information	n/a	n/a	n/a	1%	4%	2%
Household Composition	13%	5%	10%	12%	5%	10%
Net Family Assets and Income	7%	7%	7%	8%	<1%	5%
Allowances and Adjusted Income	49%	6%	35%	13%	1%	9%
Family Rent and Subsidy Information	9%	4%	7%	9%	<1%	6%

Source: Tables 13 and 14, Appendix C

Comparison of 50058/50059 Errors to QC Error. A comparison was made between the rent calculation errors on the 50058/50059 Form and errors identified through the QC Rent calculation process. The purpose of this comparison was to determine if errors identified using only the 50058/50059 Form data could predict the rent errors found in a QC review. When using only the 50058/50059 Form data to calculate the Actual Rent, errors were found in 5 percent of the households in FY 2006, a small decrease from FY 2005's figure of 8 percent. The QC error calculation found errors in 37 percent of the households in FY 2006 up slightly from FY 2005's 36 percent. The results are quite different from the individual and joint comparison methods. Error was found in both the 50058/50059 Form calculation and QC rent calculation in only 3 percent of the households. In 39 percent of the households, rent calculation error was found in either the 50058/50059 Form or the QC rent calculation, but not in both. This emphasizes that data from the 50058/50059 Form alone cannot accurately identify rent error. Exhibit IV-18 summarizes these results for FY 2005 and FY 2006.

Exhibit IV-18
50058/50059 Rent Calculation Error Compared with QC Rent Error

Rent Calculation	Percentage of Households Correct		Percentage of Households Incorrect	
	2005	2006	2005	2006
Using Information on the 50058/50059 Form	92%	95%	8%	5%
According to the QC Rent Calculation	64%	64%	36%	37%
Both 50058/50059 Form Calculation and QC Rent Calculation	59%	61%	4%	3%

Verification errors were identified by whether an item was verified by the project and, if it was, whether the correct information was transferred to the 50058/50059 Form. An error occurs when the verified amount obtained by the project is not recorded properly on the 50058/50059 Form (and, presumably, not used in the rent calculation). When determining whether a verified income or expense item matched the amount used on the 50058/50059 Form, we assumed a variance of $100 to accommodate potential rounding errors when annualizing data.

Table C-15a in Appendix C shows the number of households where verification (of any type) was not obtained, where it was obtained but did not match the amount used on the 50058/50059 Form, and where the verified amount did match the 50058/50059 Form. Table C-15b provides the same information but only includes the number of households where verification was obtained from third parties in-writing (as required by the study). Tables C-15e and C-15f provide the same data by program type.

Exhibit IV-19 summarizes the findings in Table C-15a. The percentage of items not verified by the PHA/owner increased slightly in all rent components between FY 2005 and FY 2006 with the largest percentage decline of verification seen in Public Assistance (23 percent without verification in FY 2006 compared to 16 percent in FY 2005) and Other Income (26 percent not verified in FY 2006 compared to 21 percent in FY 2005). The percentage of items where the verification matched within $100 tended to be slightly lower in FY 2006 compared to FY 2005, with only Medical Expense and Asset Income verification showing increases in percent of cases matching the 50058/59 within $100. In FY 2006, the number of households where verification was obtained by the PHA/owner declined by a few percent in all rent components. For example, earned income, one of the main sources of error, was verified 88 percent of the time in FY 2006, compared with 89 percent in FY 2005. However, the correct amount of earned income was only used 68 percent of the time compared to 71 percent of the time in FY 2005. Child care expense was verified 88 percent of the time in FY 2006 compared to 92 percent in FY 2005. Additionally the verification was used less frequently, declining from 76 percent in FY 2005 to 71 percent in FY 2006. Verified information for medical expense information was used 67 percent of the time in FY 2006, up from 63 percent in FY 2005. Verified information for pensions, earned income, public assistance, other income and child care expense was used slightly less often in FY 2006 than in FY 2005.

Exhibit IV-19
Verification of 50058/50059 Rent Components by PHA/Owners

Rent Component	No Project Verification		Item Verified by Project		Verification Matched 50058/50059 Within $100	
	2005	2006	2005	2006	2005	2006
Earned Income	11%	12%	89%	88%	71%	68%
Pensions	6%	9%	94%	91%	79%	78%
Public Assistance	16%	23%	84%	77%	67%	65%
Other Income	21%	26%	79%	74%	64%	63%
Asset Income	7%	9%	93%	91%	83%	84%
Child Care Expense	8%	12%	92%	88%	76%	71%
Medical Expense	8%	11%	92%	89%	63%	67%

Source: Table 15a, Appendix C

Exhibit IV-20 shows verification results by program type, again showing the verification rate for each rent component and the proportion that matched within $100 of the 50058/50059 Form amounts. When comparing the FY 2006 results to the FY 2005 findings, the following changes are of note:

- In the Public Housing program, there were declines in the verification rate for four out of the seven rent components in FY 2006 when compared to FY 2005 with the largest drop occurring in child care verification (74 percent in FY 2006 compared to 87 percent in FY 2005). Percentage verified for medical expenses remained the same (90 percent). Asset income was verified more often in FY 2006, 94 percent of the time compared to 85 percent in FY 2005. Verification rate for earned income increased slightly from 84 percent in FY 2005 to 85 percent in FY 2006. The percentage to which rent components were used in the rent calculation was mixed, with declines evident in pension income (71 percent in FY 2006 compared to 76 percent in FY 2005), and child care expense (59 percent in FY 2006 compared to 62 percent in FY 2005). Asset income and medical expense showed increases in the percentage of verifications used in rent calculation between FY 2005 and FY 2006 (86 percent and 62 percent respectively in FY 2006 compared to 62 percent and 56 percent respectively in FY 2005).
- In the PHA-administered Section 8 programs, there were declines in percentages of all rent components verified comparing FY 2005 and FY 2006 The greatest slides were seen in public assistance, from 86 percent verified in FY 2005 to 78 percent verified in FY 2006, and other income, with 83 percent verified in FY 2005 compared to 75 percent verified in FY 2006. Not only was there a decrease in percentages verified, but verifications were less used in FY 2006 than in FY 2005. The most notable drop was in use of child care expense verification which fell from 78 percent of verifications matching in FY 2005 to 68 percent in FY 2006. Medical expense was the only verification which showed a higher level of use, 65 percent in FY 2006, compared to 59 percent in FY 2005. All other rent components evidenced declines in the use of verification ranging from a 1 percent drop (pension) to 7 percent (earned income).

- In the owner-administered programs, slight declines in percentages verified were seen in all rent components in FY 2006, except for other income which remained at 75 percent. Earned income verifications declined the least, 90 percent in FY 2006 compared to 91 percent in FY 2005 and public assistance showed the greatest drop, 79 percent in FY 2006 compared to 84 percent in FY 2005. However, the percentage of verifications actually *used* in rent calculation actually increased slightly for all components, except asset income, with the greatest increase in verification use occurring in other income from 56 percent matching in FY 2005 to 63 percent matching in FY 2006. Asset income was verified 91 percent of the time in FY 2006 compared to 95 percent in FY 2005 and verification use decreased by 6 percentage points in FY 2006, 85 percent compared to 91 percent in FY 2005.

Exhibit IV-20
Verification of 50058/50059 Rent Components by PHA/Owner Staff by Program*

	Public Housing		PHA-Administered Section 8		Owner-Administered	
Rent Component	**Verified**	**Matched****	**Verified**	**Matched****	**Verified**	**Matched****
Earned Income	85% (84%)	64% (64%)	88% (90%)	67% (74%)	90% (91%)	74% (72%)
Pensions	88% (94%)	71% (76%)	90% (93%)	80% (81%)	93% (96%)	81% (80%)
Public Assistance	75% (79%)	65% (65%)	78% (86%)	60% (66%)	79% (84%)	76% (72%)
Other Income	70% (74%)	54% (56%)	75% (83%)	65% (70%)	75% (75%)	63% (56%)
Asset Income	94% (85%)	86% (62%)	89% (94%)	81% (83%)	91% (95%)	85% (91%)
Child Care Expense	74% (87%)	59% (62%)	90% (92%)	68% (78%)	92% (96%)	81% (78%)
Medical Expense	90% (90%)	62% (56%)	90% (96%)	65% (59%)	88% (91%)	69% (68%)

Source: Table 15g, Appendix C

* Findings from FY 2005 are in parentheses.
** Matched within $100

Tenant File Verification Compared with QC Error. Errors identified through the QC process were investigated to determine whether they were associated with sources of income and expenses. Exhibit IV-21 presents the percentage of households with QC error for which verification was missing in the tenant file. Each error is presented by rent component. The data indicate that missing verification does have a major impact on error. Verification for most rent components was missing in at least 64 percent of all households with QC error. Data from PHA administered programs show that 14-percent had a QC error in earned income with 68 percent of the cases in error missing verification for earned income. There were minor changes in these findings when compared to 2005 data, particularly in the Public Housing administered program percentages of missing verifications by rent component error. The exceptions were in the owner-administered program with large increases in missing verifications between FY 2005 and FY 2006 for public assistance, from 78 percent to 96 percent, and child care expense from 63 percent missing verification to 82 percent.

Exhibit IV-21
QC Error Households with Missing Verification in the Tenant File

Rent Component	50058				50059			
	Households with QC Error		Households with QC Errors and Missing Verification		Households with QC Error		Households with QC Errors and Missing Verification	
	2005	2006	2005	2006	2005	2006	2005	2006
Earned Income	11%	14%	67%	68%	7%	8%	62%	69%
Pensions	13%	15%	85%	86%	15%	15%	85%	84%
Public Assistance	6%	5%	56%	73%	3%	3%	78%	96%
Other Income	7%	7%	67%	80%	7%	6%	79%	83%
Asset Income	5%	5%	80%	73%	7%	6%	73%	81%
Child Care Expense	3%	3%	78%	81%	2%	2%	63%	82%
Disability Expense	<1%	<1%	100%	100%	<1%	0%	100%	--
Medical Expense	9%	10%	88%	90%	16%	15%	92%	80%
No Component Error	67%	64%	--	--	66%	68%	--	--

Source: Tables 16a and 16b, Appendix C

Summary of 50058/50059 Form Errors. Exhibit IV-22 provides a summary of the errors identified from the 50058/50059 Form. These include consistency errors, calculation errors, and overdue recertifications. The exhibit shows the percentage of households in error, the average dollar error, and the standard errors for both households with recalculated 50058/50059 Form error (error determined using only the 50058/50059 Form), and households with QC Rent error. This information is provided for households with error for each error type. Beginning with the FY 2005 study, transcription error for any household was added to this exhibit and the data that was described as an unduplicated count of 50058/50059 Form error has been revised to an unduplicated count of any type of administrative error. The exhibit shows that individual types of 50058/50059 Form errors are not closely associated with QC rent error. However, 50058/50059 Forms with transcription error are associated with QC rent error in 63 percent of households and any type of administrative error (transcription, consistency, calculation, or overdue recertifications) are associated with QC Rent Error in 73 percent of the households.

When the findings in this exhibit are compared with the FY 2005 findings, there are no major changes in percentage of households in error for any error type for both recalculated 50058/59 error and QC rent error.

The average dollar error for households with QC rent error remains stable relative to the FY 2005 figures, while the average dollar error for recalculated 50058/50059 error show significant declines particularly in average amounts associated with transcription, consistency, and allowance calculation error. In households with recalculated 50058/50059 error, the average dollar error was lower for households with transcription error ($35 in FY 2006 and $85 in FY 2005), consistency error ($32 in FY 2006 and $172 in FY 2005), allowance calculation error ($85 in FY 2006 and $173 in FY 2005), and other calculation error ($71 in FY 2006 and $154 in FY 2005).

There were moderate increases in average dollar error amounts for overdue recertifications ($86 in FY 2006 and $75 in FY 2005) and income calculation error ($189 in FY 2006 and $152 in FY 2005). For all households with recalculated 50058/50059 data, total average dollar error averaged for all error types shows a decline from $70 in FY 2005 to $23 in FY 2006. To understand the reason for the change in the average dollar error for households with recalculated 50058/50059 error, it is important to review how this number is calculated. It is the average dollar rent error for all cases (based on recalculated 50058/50059 Form rent error—not QC rent error) that have error in the category identified in the row header. So, for example, although the average rent error dollars for households with income calculation errors is $189, because many of these cases have a large rent error (which may have nothing to do with the income) and the number of cases with income calculation error is small (3% of households in error), the average dollar error is large.

Exhibit IV-22
50058/50059 Administrative Error: Percent of Households, Average Dollars in Error

	Households with Recalculated 50058/9 Error				Households with QC Rent Error			
Error Type Based on 50058/59 Recalculation	Percent of Households in Error	Standard Error of Percent	Average Dollar Error	Standard Error of Mean	Percent of Households in Error	Standard Error of Percent	Average Dollar Error	Standard Error of Mean
Households with Transcription error	53%	5.9%	$35	$12.97	63%	2.7%	$51	$5.69
Households with Consistency Error	37%	5.8%	$32	$10.51	26%	3.4%	$58	$6.03
Households with Allowance Calculation Error	12%	3.1%	$85	$43.95	8%	2.2%	$60	$9.59
Households with Income Calculation Error	3%	1.4%	$189	$62.32	3%	0.8%	$32	$3.86
Households with Other Calculation Error	19%	4.0%	$71	$30.41	14%	1.9%	$60	$9.25
Overdue Recertifications	8%	2.5%	$86	$64.00	6%	1.3%	$72	$17.39
Unduplicated Count, Any Type of Administrative Error	68%	5.2%	$31	$10.25	73%	2.2%	$51	$5.17
Total Households	100%		$23	$7.46	100%		$53	$4.25

Source: Table 17, Appendix C

Summary of Administrative Errors. As outlined in the study objectives, calculation errors, consistency errors, transcription errors, failure to recertify on time, and failure to apply allowances appropriately produce administrative errors. Exhibit IV-23 shows the Gross and Net Rent Errors for households with each type of administrative error. Starting in FY 2005, two major changes were made to this exhibit. First, the category of consistency errors was added to illustrate inconsistencies found within the 50058/50059 Form. Second, the findings are based on QC error rather than recalculated 50058/59 error. Percent of households in error is virtually unchanged from FY 2005 for all error types. Gross average dollars in error for overdue

recertifications increased from $42 in FY 2005 to $54 in FY 2006, otherwise the gross average amounts by error type are comparable to FY 2005. Net average dollars in error remained the same for allowance calculation errors and overdue recertifications and increased slightly for most other error types.

Exhibit IV-23
Administrative Error: Percent of Households, Average Dollars in Error
For All Households

Error Type	Percent of Households in Error	Gross Rent Error		Net Rent Error	
		Average Dollars in Error	Standard Error of Mean	Average Dollars in Error	Standard Error of Mean
Transcription Errors	42%	$28	$3.29	-$6	$3.48
Consistency Errors	23%	$25	$2.51	-$9	$3.19
Calculation Errors—Allowances	5%	$33	$5.08	-$12	$7.71
Calculation Errors—Income	2%	$14	$3.13	$4	$3.26
Calculation Errors—Other	10%	$30	$5.47	-$4	$4.47
Overdue Recertifications	3%	$54	$14.11	-$14	$10.61
Any Administrative Errors	55%	$26	$2.64	-$6	$2.81
Total	100%	$20	$1.79	-$7	$1.79

Source: Table 18, Appendix C

E. Occupancy Standards

Exhibit IV-24 presents a summary of the analysis that determined whether households are assigned units with the correct number of bedrooms. It shows the percentage of households by actual number of bedrooms and correct number of bedrooms according to the guidelines used in the study. Note that the guidelines used in this study are generally acceptable HUD guidelines. All programs allow exceptions to HUD's rules. The Section 8 Voucher program sometimes allows households to rent units with fewer or more bedrooms than specified by the guidelines.

Fourteen percent of all households occupied a unit with too many or too few bedrooms in FY 2006, according to the guidelines used for this study. This number is up slightly from FY 2005, where thirteen percent of all households occupied a unit with an incorrect number of bedrooms. Thirteen percent of Public Housing households, seven percent of owner-administered households, and nineteen percent of Housing Choice voucher program households were over- or under-housed in FY 2006.

Exhibit IV-24
Percentage of Households in Units with the Correct Number of Bedrooms According to Study Guidelines

Number of Bedrooms	PHA-Administered				Owner-Administered		Total	
	Public Housing		HCVP					
	2005	2006	2005	2006	2005	2006	2005	2006
0	99%	98%	95%	77%	96%	98%	97%	94%
1	100%	100%	97%	100%	99%	99%	99%	99%
2	78%	80%	76%	70%	82%	85%	78%	77%
3	75%	83%	84%	85%	92%	84%	83%	84%
4	52%	55%	60%	45%	56%	53%	57%	48%
5+	64%	35%	35%	34%	--	--	45%	31%
All Units	85%	87%	83%	81%	93%	93%	87%	86%

Source: Table 19a, Appendix C

Exhibits IV-24a and IV-24b show the percentage of households that met these guidelines for each bedroom size for FY 2005 and FY 2006, respectively. The shaded cells indicate the percentage of households that fall within study guidelines.

Exhibit IV-24a
Percentage of All Households in FY 2005 by Number of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2005 Number of Household Members							
	1	2	3	4	5	6	7	8+
0	97%	2%	1%	1%	--	--	--	--
1	90%	9%	1%	--	--	--	--	--
2	20%	46%	25%	7%	2%	1%	--	--
3	4%	10%	34%	32%	14%	4%	2%	<1%
4	2%	2%	13%	24%	25%	19%	11%	5%
5+	16%	--	5%	--	18%	17%	8%	37%

Source: Table 19b, Appendix C

Exhibit IV-24b
Percentage of All Households in FY 2006 by
Number of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2006 Number of Household Members							
	1	2	3	4	5	6	7	8+
0	94%	3%	--	--	3%	--	--	--
1	91%	9%	1%	<1%	--	--	--	--
2	22%	47%	23%	7%	1%	--	--	--
3	5%	10%	37%	31%	13%	4%	1%	<1%
4	1%	5%	17%	24%	19%	19%	8%	6%
5	4%	--	10%	14%	16%	10%	16%	31%

F. Project Staff Questionnaire Analysis

The purpose of the Project Staff Questionnaire (PSQ) was to obtain information on project and PHA practices and procedures, in order to better understand how work is carried out in projects and PHAs, and to identify difficulties and potential areas for improvement. The executive directors or managers of the PHA/projects in the FY 2006 study were surveyed, using a self-administered, paper questionnaire that examined in detail such topics as the number and type of PHA/project staff, training received by staff on how to conduct (re)certifications, communicating information about changes in HUD policies to the staff, quality control monitoring of work done by (re)certification staff, methods of obtaining household information, automation use when processing (re)certifications, various verification procedures employed in the process of (re)certifications, and difficulties in verifying tenants' information. The results were analyzed separately for three major program types: Public Housing, PHA-administered Section 8, and owner-administered.

A brief summary of the key findings from this analysis are presented below. A more detailed summary of the Project Staff Questionnaire information is found in Appendix E.

- Number and Type of Staff. Overall, PHA/projects indicated an average of 56 units per each staff member and 169 units per each full-time (re)certification staff. However, there was a wide diversity of responses with respect to the ratio of staff per unit within, as well as between, different types of PHA/projects. PHA Section 8 reported the highest number of units per staff (102 units per staff member, on average) and highest number of units per full-time (re)certification staff (238 on average). Owner-administered projects had the lowest number of units per staff (38) and units per full-time (re)certification staff (104). New (Re)Certification Staff.

  About 39 percents of PHA/projects had new staff assigned to conduct (re)certifications in the past 12 months. These PHA/projects reported 3 new staff members being assigned to conduct (re)certifications in the past 12 months, on average. More PHA Section 8 projects assigned new staff to (re)certifications compared to Public Housing and owner-administered projects (61% versus 36% and 32%, respectively). PHA-administered

Section 8 projects also assigned the most new staff to conduct (re)certifications (4 new staff, on average). Fewer owner-administered projects assigned new staff members to (re)certifications, compared to projects in the other programs. They also assigned the fewest new staff to (re)certifications (1 staff, on average).

- New (Re)Certification Staff Training. PHA/projects provided on average 113 training hours to new (re)certification staff in the past 12 months. Three methods of training new staff were most prevalent – working one one-on-one with experienced staff; reading manuals, watching videos, or asking questions; and attending training sessions conducted by the supervisor. PHA-administered Section 8 projects provided the most hours of training (187 hours, on average). Owner-administered projects provided the fewest hours of training (65 hours, on average).

- Training of Experienced (Re)Certification Staff. About 71 percent of PHA/projects trained experienced staff in the past 12 months. PHA-administered Section 8 projects provided more training to experienced staff, compared to projects in the other two programs. Among all projects, an average of 5 experienced staff members received an average of 32 training hours. Most PHA/projects usually or always trained using self-training, training sessions conducted by the supervisor, and training conducted by other experienced staff.

- Communicating Information about Changes in HUD Policies. PHA/projects used a variety of methods to communicate with staff about changes in HUD PHA/Owner policies affecting eligibility or rent calculations. One-on-one discussions between the managers and the staff was used most frequently, followed by distributing copies of HUD announcements to staff, and distributing a memo that described the changes and provided instructions for implementation. PHA/projects found answers to staff questions by referring to HUD PHA/owner memos or manuals, asking HUD field office or other HUD staff, and asking questions at a HUD training session. Many PHA/projects reported that they had to figure out the answers themselves by conducting internal meetings, talks, or training with supervisors, directors, or other senior staff.

- Quality Control via Work Monitoring. Most PHA/projects conduct quality control monitoring of (re)certification work. PHA/projects typically have the supervisor conduct work monitoring. PHA/projects most frequently randomly spot checked a percent of all cases, but other methods were also used, such as reviewing cases of new staff and reviewing cases with anomalies. During the review process PHA/projects often (67%) found mistakes in calculating rent, and missing or incomplete verifications of income (61%). The most commonly stated reason for errors was tenants providing inaccurate or incomplete information.

- Issues in Conducting Tenant Interviews. The average duration of the typical initial certification interview was 41 minutes, while the average duration of a typical recertification interview was 31 minutes. PHA-administered Section 8 projects reported longer initial and recertification interviews, while public housing projects reported the shortest. Tenants had difficulties in answering recertification interview questions about sporadic or intermittent income, income from self-employment, assets, and income from absent family members.

- Using Computers and Software Programs. Almost all PHA/projects are using computers to support processing (re)certifications, as well as a wide variety of purposes. The most frequently reported uses for the computers were to calculate rent, print 50058/50059 forms, print letters to the tenants, and maintain demographic information about residents. Interestingly, one of the least frequently reported use of computers was to interview tenants and record answers.

- Use of PIC/TRACS. Ninety-six percent of PHA/projects transmit 50058/50059 data via PIC/TRACS, and about 95 percent of all 50058/50059 data were transmitted to HUD via PIC/TRACS. Owner-administered projects transmitted only about a half of their 50058/50059 data to HUD directly and slightly less than a half through another agency or using other methods.

- Verification Procedures. More than 82 percent of PHA/projects (down from 90% in FY 2005) verify the components of tenant information at least occasionally, and more than 70 percent (down from 75% in FY 2005) always verify tenant information. (Re)certification staff are usually responsible for keeping track of verification requests and returns. Most PHA/projects keep track of outstanding verification in the tenant file. PHA/projects reported that the most difficult information to verify included sporadic, infrequent, or seasonal employment; sources of income other than employment; value of assets; and medical expenses. Most PHA/projects use various procedures to get verification information, including calling the third party, sending letters to the third party, calling the tenants, and sending letters to the tenants. When none of these procedures produced the verification information, most PHA/projects resorted to accepting other, less preferred verification information. When asked to name the causes of problems that emerged when obtaining complete verifications, the two major causes reported by PHA/projects were tenants providing incomplete or inaccurate information, and employers not responding to requests in a timely manner.

G. The Relationship between Tenant Characteristics and Project Practices, and Error

Multivariate analysis was conducted to further examine gross rent error and different types of error that occurred in the certification/recertification process. The goal was to identify and estimate the relationship between tenant characteristics, project characteristics, and project practices and gross rent error. This analysis, which addressed study objectives 5, 6, 8, 12, and 13, confirmed major findings in previous studies. A brief summary of these analyses is provided below. A more detailed description of the analyses is found in Appendix F.

To address Objective 5 (difference in error by program), results from bivariate tabulation, HLM modeling, and regression analysis indicated that PHA-administered Section 8 programs had higher average gross rent error than the owner-administered programs; but the difference was due to differences in tenant characteristics because once tenant variables were held constant, the program difference was no longer statistically significant. This finding requires closer research. If substantiated, it may imply inherent difficulties in running the PHA-administered Section 8 program because the estimate of relatively high rent error for the program *only appeared after controlling for verification efforts,* which PHAs administering the Section 8 programs were found to have undertaken at high rates.

To address Objective 6 (impact on error by tenants vs. project/staff), this analysis found that, consistent with previous results, the impact of tenant characteristics on rent error was apparently greater than program sponsor staff characteristics. As shown in variance partitioning with the HLM unconditional model and the sequential OLS models, tenants' high incomes and multiple sources of incomes and allowance items were related to both higher gross rent error and different types of error. These tenant variables should be seen as important indicators of risk for rent errors and be targeted by program intervention.

To address Objective 8 (error concentration in program/project), this analysis found that, to a varying extent, a number of program/project features did relate to rent error and different types of error. Specifically, projects that regularly verified incomes had lower rent errors. Projects with minimal education requirements in hiring consistently had lower rent error, a pattern strongly suggesting that projects should implement such requirements, even though the specific educational level may be subject to local judgment.

To address Objective 12 (rent errors differentiated by use of automated systems), the analysis provided evidence that computer application in certification operation helped reduce different types of processing error. Use of the TASS or EIV systems, however, was not yet clear in relation to rent error or different types of error.

To address Objective 13 (other tenant or project characteristics related to errors), the analysis found, as mentioned above, project minimal education requirements in hiring were consistently related to lower rent error. This education requirement, however, was found to be related to some, rather than all, types of process error. While further studies are necessary, a possible implication is that staff education qualification may have broader impact on quality control than coping with particular process errors.

Based on this analysis, we foresee possibilities to advance the study of HUD quality control efforts. Analyzing the interaction between tenant "risk factors" and certification activities in connection to rent error should be promising. This analysis failed to identify significant interaction effects, likely due to lack of systematic research and testing of alternative scaling for predictor variables. Further, the tenant-nested-within-project structure is an important feature of the housing program operation. In order to further our understanding of this structure, the HLM technique should be used to analyze tenant and project factors by specifying models to partition and account for the variance of both the average rent error (the intercept) and the differentials by key predictor variables (slopes).

H. Rent Reasonableness

The Housing Choice Voucher Program (HCVP) assists low-income families in obtaining housing in the private market. Public housing authorities are responsible for administering the program and ensuring that the rents paid for dwellings leased by participants in the HCVP are reasonable in comparison with rental units in the private, unassisted local market. High rents can waste government funds and inadvertently raise private market rents. HUD regulations require PHAs to conduct a rent reasonableness determination before units are leased, before rent increases are granted to owners, and when Fair Market Rents decrease by at least 5 percent. This analysis examines whether PHAs fulfilled the requirement for documenting rent reasonableness determinations, but does not investigate whether rents were in fact reasonable.

Methodology[7]. Each of the 132 PHAs, administering the Section 8 Voucher program for households participating in the study, were asked to describe their standard rent reasonableness processes and provide copies of the forms used when determining rent reasonableness. This information was used to classify the methods used by PHAs to determine rent reasonableness.

In addition, field interviewers were instructed to search the tenant files for each of the 795 voucher households in the tenant sample to locate the documents supporting the rent reasonableness certification. For new certifications (there were 123), field interviewers searched the file for the initial rent reasonableness certification and recorded its date. For annual recertifications (672), field interviewers examined case files for evidence of when the current rent to owner became effective. If the rent became effective within the past two years, the case file was searched for a rent reasonableness certification and the date of certification. The owner's rent certification on the Request for Tenancy Approval (RTA) form was considered a rent reasonableness certificate.

Findings Pertaining To Rent Reasonableness Methods Used By PHAs. The most common method of determining rent reasonableness is the unit-to-unit comparison (see Exhibit IV-25). Fifty six percent of the housing authorities reported using this method as either the only method used or the predominant method. Nineteen percent reported using unit-to-unit methodology as a component in combination with other methods. The unit-to-unit method is similar to the standard real estate appraisal technique of comparing a unit to similar private, unassisted units. Rent amounts are sometimes modified for differences in unit characteristics, such as size, age, amenities, housing services, maintenance, and utilities.

Exhibit IV-25a
PHAs by Predominant Rent Reasonableness Method (unweighted)

Method	Number	Percent
Unit-to-Unit Comparison	74	56%
Unit-to-Market Comparison	11	8%
Point System	19	14%
Other or Rent Control	9	7%
No Single Predominant Method	17	13%
No information	2	2%
Total	132	100%

The unit-to-market comparison approach estimates the average and/or range of "market" rents for units with similar characteristics in the private, unassisted market. Valuation adjustments are based on typical units in the private market. Eight percent of housing authorities reported using this method solely or primarily. However, 17 percent of the PHAs used the unit-to-market method in combination with other methods. Fourteen percent of housing authorities indicated that their primary method of making rent reasonableness determinations was based on a point

[7] The methodology for identifying the rent reasonableness methods used by PHAs changed in this study. In previous studies, each PHA sent a description of the procedures used to determine rent reasonableness, and Macro staff assigned codes based on interpretation of the information provided. For FY 2006, the PHAs were asked to identify the methods used, and were allowed to identify multiple methods.

system; nine percent reported using the point system in combination with other methods. Using this system, units are assigned points based on their condition and attributes and comparisons are made to unassisted units.

Thirteen percent of the PHAs used a combination of methods equally, meaning no predominant method was identified. Seven percent of PHAs used some other method to determine rent reasonableness or the rents for their properties were restricted by rent control.

The frequency of various combinations of rent reasonableness methodologies are addressed in Exhibit IV-25b. Each methodology is considered based on its proportion in the mix of methods. The total times cited refers to the number of PHA's which used the rent reasonableness method to any extent. When the mix of methods sum to a number higher than the times cited in the column subheading, it indicates that there were more than two methods involved. For example, unit-to-unit methodology is cited by 98 PHA's and is used as a sole method of rent reasonableness determination in 45 Section 8 voucher programs. It is the predominant method in 29 voucher programs. In 21 of the 29 programs, project staff report using professional judgment as a component of their rent reasonableness methodology. Eight of these 29 voucher programs include unit-to-market analysis and four include point ranking. Without identifying specific mixes and proportions, one can see that the 29 voucher programs which primarily use the unit-to-unit method often include a mix of two or more other methods for determining rent reasonableness with professional judgment being the most frequent associated method.

Exhibit IV-25b

PHAs using Rent Reasonableness Method Combinations (unweighted)

	100 % Method	Predominant Method	Equivalent Method	Lesser Component
Unit-to-Unit				
Total times cited =98	**45**	**29**	**12**	**12**
Unit-to-Unit and Unit-to-Market		8	6	5
Unit-to-Unit and Point Ranking		4	4	7
Unit-to-Unit and Professional Judgment		21	2	7
Unit-to-Market				
Total times cited =33	**6**	**5**	**9**	**13**
Unit –to-Market and Unit-to-Unit		3	8	12
Unit-to-Market and Point Ranking		2	1	3
Unit-to-Market and Professional Judgment		2	0	8
Point Ranking				
Total times cited = 31	**13**	**6**	**6**	**6**
Point Ranking and Unit-to-Unit		5	4	6
Point Ranking and Unit-to-Market		1	2	5
Point Ranking and Professional Judgment		4	0	2
Other and Rent Control				
Total times cited =10	**3**	**6**	**0**	**1**
Other and Unit-to-Unit		2	0	1
Other and Unit-to-Market		5	0	0

Findings Pertaining To Rent Reasonableness Documentation Found In Tenant Files for New Admissions. In FY 2006, 88 percent of new admission files contained rent reasonableness documents compared to 80 percent in FY 2005 (see Exhibit IV-26a). The absence of documentation does not necessarily indicate a determination was not completed, only that it was not properly documented. Of those files that had documentation, more than 68 percent contained a statement signed by the PHA staff certifying that the rent is reasonable (see Exhibit IV-26b).

Exhibit IV-26a
Rent Reasonableness Documentation for New Admissions

Status	2005	2006
Determination Documented	80%	88%
No Determination Documented	20%	12%
Total	100%	100%

Exhibit IV-26b
Type of Rent Reasonableness Documentation for New Admissions

Type	2005	2006
A signed statement certifying that the rent is reasonable	81%	68%
Comparable units documented by the property owner in section 12a of HUD 52517	4%	10%
Comparable units documented on other documents	11%	16%
Any other reference to rent reasonableness	4%	6%
Total	100%	100%

HUD requires that rent reasonableness determinations be conducted before signing the contract and lease. The timeliness of the rent reasonableness determination was evaluated by comparing the lease date with the rent reasonable certification date in the case file. Exhibit IV-27 provides a summary of how the date of the rent reasonableness determination relates to the initial lease date for those households where reference to the rent reasonableness determination was found in the file. If the lease effective date occurred before the determination, the rent reasonableness determination had no impact on the rent charged. The percent of rent reasonable determinations made after the rent had been established as part of the initial lease agreement increased slightly from FY 2005 (7%) to FY 2006 (11%).

Exhibit IV-27
Timing of Most Recent Rent Reasonableness Determination—New Admissions

Determination-Certification Chronology	2005	2006
More than 4 months before lease date	2%	3%
Up to 4 months before lease date	85%	75%
After lease date—up to 2 months	3%	9%
After lease date—greater than 2 months	4%	2%
Date missing	6%	12%
Total	100%	100%

Findings Pertaining To Rent Reasonableness Documentation Found In Tenant Files for Annual Recertifications. Annual recertifications require rent reasonableness documents only when owners increase rental rates. We examined case files to determine when the current rent to owner first became effective. The case file was searched for the rent reasonableness determination when rent reasonableness determinations were performed in the previous two years. In FY 2006, about 69 percent of these case files had certified rent reasonableness documents within the past two years compared to 65 percent in FY 2005 (see Exhibit IV-28a).

Exhibit IV-28a
Rent Reasonableness Documentation for Annual Recertifications

Status	2005	2006
Determination Documented	65%	69%
No Determination Documented	35%	31%
Total	100%	100%

Type of reference to rent reasonableness documentation was recorded for households where documentation of the rent reasonableness determination was found. Of the files that had documentation, 68 percent contained a statement signed by the PHA staff certifying that the rent is reasonable (see Exhibit IV-28b)[8].

[8] These findings are not comparable to the findings in the FY 2005 study, because the FY 2005 findings only included rent reasonableness determinations made four months before or two months after the effective date of the rent to owner. In FY 2006 findings were based on all determinations found in the tenant file during the past two years.

Exhibit IV-28b
Type of Rent Reasonableness Documentation for Annual Recertifications Where Documentation of the Rent Reasonableness Determination Was Found

Type	2006
A signed statement certifying that the rent is reasonable	68%
Comparable units documented by the property owner in section 12a of HUD 52517	4%
Comparable units documented on other documents	16%
Any other reference to rent reasonableness	12%
Total	100%

The current rents to owner in the lease agreements were compared with the dates of the rent reasonable documents. If the lease effective date occurred before the determination, the rent reasonableness determination had no impact on the rent charged. In FY 2006, about 22 percent of the rent reasonable determinations were made after rents had been established, compared with 16 percent in FY 2005 (see Exhibit IV-29).

Exhibit IV-29
Timing of Most Recent Rent Reasonableness Determination—Annual Recertifications

Determination-Certification Chronology	2005	2006
More than 4 months before lease date	11%	8%
Up to 4 months before lease date	42%	47%
After lease date—up to 2 months	3%	3%
After lease date—greater than 2 months	13%	19%
Date missing	31%	23%
Total	100%	100%

Conclusion. PHAs are not fully documenting rent reasonableness determinations as required by HUD regulations, and a large percentage of existing rent determinations have been made on the basis of less formal means of evaluating rents. These findings may be partially attributable to the PIH notice issued May 16, 2003 (notice PIH 2003-12) that supports a more streamlined rent reasonable process. For example, a PHA need not consider all nine criteria cited in 24 CFR 982.507(b) to fully comply with the regulation. PIH 2003-12 also asserts that "each PHA should use appropriate and practical procedures for determining rental values in the local market." This statement may also be intended to justify less formal methods of rent determination.

I. Utility Allowance Analysis

As part of the FY 2006 HUDQC study, an analysis was conducted of the Utility Allowances assigned to Section 8 Voucher households in the study sample. The purpose of this analysis was to report on whether there was documentation in the tenant file indicating how the utility allowanced used in the rent determination was calculated; and identify discrepancies between the utility allowance on the 50058 Form (AC), and the utility allowance determined by using the utility allowance schedules provided by the PHA staff (QC). The QC utility allowance was calculated by using the PHA utility allowance worksheet found in the tenant file to identify the utilities for which the tenant was responsible; using the utility allowance schedule provided by the PHA to identify the values for the utilities for which the tenant was responsible; and summing those values.

To support analysis, field interviewers were asked to copy the utility allowance worksheet found at the PHA office, and indicate whether the Housing Assistance Payment contract was found in the tenant file. PHAs provided utility allowance schedules used for actions effective in FY 2006 and answered questions regarding how the utility allowance was calculated.

One-hundred and twenty-two PHAs administering Section 8 Voucher programs, representing 132 counties, participated in the HUDQC study. According to information provided by the PHAs, 70 percent used HUD Form 52667 – Allowances for Tenant Furnished Utilities, and 21 percent used a PHA created worksheet (in many cases similar to HUD 52667) to record and calculate the utility allowance for the tenant. Exhibit IV-30a provides the information on the type of form used to calculate the utility allowance value.

Exhibit IV-30a
Type of Document Used by the PHA to Calculate the Utility Allowance Value

Type of Document	Number of PHAs	Percent of PHAs
HUD Form 52667	85	70%
HUD Form 52641 – HAP contract	0	0%
PHA Created Form	26	21%
HUD Form 52517 – Tenancy Approval	0	0%
Combination of Above	11	9%
Total	132	100%

Data in this section are not weighted.

Field interviewers were able to locate worksheets documenting how the utility allowance was calculated for 91 percent of the Section 8 Voucher households in the sample. For households for which a worksheet was available, the utility allowance from the 50058 Form was matched with the QC utility allowance. The QC utility allowance was unable to be calculated in 4 percent of the cases because the worksheet did not include utility or other critical information, and for 6 percent of the cases because the appropriate utility schedule was not available. For 3 percent of the households where the AC and QC utility allowance values did not match, we were unable to determine the reason for the discrepancy. We were able to determine the actual cause of the discrepancy for 4 percent of the households. Exhibit IV-30b below presents the findings from this analysis.

Exhibit IV-30b
QC Utility Allowance Comparison Findings

Number	Percent	Outcome
562	71%	QC UA Matched Amount on 50058
69	9%	No Worksheet Was Available
44	6%	Appropriate Schedule Not Available
51	6%	Worksheet Was Missing Critical Information
11	<1%	Discrepancy in Number of Bedrooms or Address
23	3%	Discrepancy Due to Math Error
10	<1%	Discrepancy – Incorrect Schedule Used
25	3%	Discrepancy – Unable to Determine Reasons
795	100%	Total

Data in this section are not weighted.

J. Payment Standard Analysis

As part of the FY 2006 HUDQC study, a special analysis was conducted to determine if PHAs are using correct Payment Standards. This analysis consisted of two parts. First, the Payment Standard on the 50058 Form was compared to the Payment Standard schedules provided by the PHA. Second, the Payment Standard on the 50058 Form (AC) was compared to Fair Market Rents for the appropriate geographical area. The findings from these two comparisons are presented below.

Background. Payment Standards are used in the Section 8 Voucher Program when determining the tenant's portion of the rent-to-owner. They must be kept current and set between 90 and 110 percent of the Fair Market Rent (FMR). If a PHA does not ensure that their payment standards are within this range, or they misunderstand how new FMRs affect exception payment standards, errors in tenant rent determinations will result.

PHAs may apply payment standards incorrectly resulting in errors in tenant rents. A PHA may have several Payment Standard areas with complex borders, sometimes making it difficult to select the correct Payment Standard for any given address within the jurisdiction. PHAs may also err by applying the family-size Payment Standard (the size authorized for the family as shown on the voucher) in lieu of the lesser of either the family-size Payment Standard or the Payment Standard for the unit size (number of bedrooms in the unit). Other potential areas for error include whether a PHA has been authorized to use FMRs based on the 50th percentile of rents in the area; whether the PHA has been authorized to use success rate payment standards based on the 50^{th} percentile of rents; and whether the PHA continues to be eligible for these higher subsidy standards. Another complication allows PHAs to change the Payment Standard only at the time of the annual recertification or before moving to a new address. Thus, even if a change in family composition requires an interim recertification with several family members moving in or out, the Payment Standard used in determining the rent should not be changed at the interim recertification. The complexity of the Payment Standard guidelines increases errors, but most of the errors found were not due to these complex guidelines.

Comparison of the Payment Standard on the 50058 Form to the Payment Standard Schedules Provided by the PHA. The first analysis consisted of comparing the Payment Standard on the 50058 Form (AC) to the Payment Standard schedules provided by the PHA (QC). For all voucher household in the study, the appropriate QC payment standard was selected and compared to the AC payment standard. The selection of the QC payment standard from the schedules provided by the PHA was based on:

- the lower of either the number of bedrooms in the unit, or the number of authorized bedrooms for the household on the voucher,
- the effective Date of Action, and
- determining and applying any exception listed on the information provided by PHA staff.

For every household where the AC and QC Payment Standard did not match, a call was placed to the PHA staff for clarification and if appropriate to gather Payment Standard schedules for previous years. Through the calls, often other complications were discovered and taken into consideration when selecting the QC Payment Standard. Types of complications included:

- A decrease in the Payment Standards for units, requiring the PHA and Macro to use the previous (higher) Payment Standard for the first recertification after the decrease. Many PHAs only sent the Payment Standards for a specific time period. Calls were made to get the historical Payment Standard Schedules.
- Households that were granted exceptions for special circumstances such as living in a house with additional amenities, or setting the Payment Standard to the gross rent for Enhanced Vouchers
- Housing Authorities using higher Payment Standards for Exception Rent Areas
- Housing Authorities using Payment Standards from a previous Housing Authority for Port-in households understanding the rates would be adjusted at the next annual re-certification.
- PHAs whose computer software systems filled the Payment Standard field with the lesser of the gross rent or the Payment Standard.

There were 795 Housing Choice Vouchers households in the study. For the majority (77%) of the households, the AC Payment Standard matched the QC Payment Standard. Of the 186 households with discrepant Payment Standards, 85 (46%) were elderly or disabled households. Elderly/disabled households are identified separately because they are often entitled to individual exemptions to the Payment Standard rules. One hundred fifty-six (83%) of the total discrepancies were attributable to one of the 5 common reasons, with usage of new, lower payment standard amount in the first recertification after the decrease as the most common error. The remaining 30 (17%) were due to other reasons such as limitations of software, enhanced rates, usage of FMR instead of Payment Standard, typos, etc.

Exhibit IV-31 below summarizes the number and percent of household where the QC and AC Payment Standard did not match by reason.

Exhibit IV-31
Number and Percent of Households with Payment Standard Discrepancies

Reason	Number of Households (Elderly /Disabled)	Number of Households (Non-Elderly /Disabled)	Percent of Households
Wrong Number of Bedrooms was Used	15	11	14%
Gross Rent instead of the Payment Standard was Used	14	14	15%
Old Payment Standard Amount was Used	14	18	17%
New, lower Payment Standard amount was used in the first recertification after the decrease.	14	28	23%
Overdue re-certifications with Payment Standard Amount not matching the FY 2006 Payment Standard	12	14	14%
Other Reasons; Decrease in Payment Standard, Typos, Used the FMR, Limitation of the Computer Software System	16	16	17%
Total	85	101	100%

*Data provided in this section are not weighted.

Comparison of the Payment Standard on the 50058 Form to the Fair Market Rent for the Appropriate Geographical Area. The second analysis consisted of comparing the AC (50058) Payment Standard to the Fair Market Rents for the appropriate area. The Payment Standard for 85 percent of the households fell within the 90 to 110 percent FMR band; 4 percent of the Payment Standards were lower than 90 percent of the FMR; and 11 percent were higher than 110 percent of the FMR. For less than 1 percent, the band could not be determined because the Payment Standard was not used in the rent calculation. Exhibit IV-32 below summarizes the number and percent of households by the relationship of the Payment Standard to the acceptable FMR rental rate.

Exhibit IV-32
Percentage of Households Meeting Payment Standard Requirements When Comparing Payment Standard to Fair Market Rent

Type of Household	Fair Market Rent			Cases Outside the 90–110% Band
	Under 90%	90–110 %	Over 110%	
Non-Elderly or Disabled	17	375	50	8.4%
Elderly or Disabled	16	297	38	6.8%
	33	**672**	**88**	**15.2%**

The analysis of the households that fell outside the 90 to 110 percent Fair Market Rent band indicated that 29 percent (35) were either assisted by a PHA that was granted an exemption by HUD, consisted of an elderly or disabled household member, or were entitled to a higher older Payment Standard amount because there was a decrease in the amount of the Payment Standard for the appropriate year. Fifty-six percent of the households fell outside the 90 to 110 percent band for four general reasons –an older payment standard amount was incorrectly used; the wrong number of bedrooms was used; the Gross Rent was used instead of the Payment Standard;

the case was an overdue recertification. Fifteen percent of the discrepancies were unexplained. Exhibit IV-33 summarizes the number and percent of households that fall outside the 90-110 percent FMR band by categories.

Exhibit IV-33
Details of Cases falling outside the 90-100% of FMR band

	Fair Market Rent		Percent of Cases Outside the 90–110% Band
	Under 90%	Over 110%	
Households Assisted by a PHA Granted an Exemption by HUD	0	7	5.78%
Households with Elderly or Disabled Members Receiving an Exemption	1	2	2.48%
Households Where an Older Payment Standard Amount Was Correctly Used on the 50058 Form	1	24	20.66%
Households Where an Older Payment Standard Amount Was I**ncorrectly** Used on the 50058 Form	10	15	20.66%
Discrepancy Due to Incorrect Number of Bedrooms	8	15	19.01%
Discrepancy Due to Use of Gross Rent Instead of Payment Standard	5	11	13.22%
Discrepancy Due to Overdue recertification	1	3	3.31%
Others	7	11	14.88%
Total Number of Cases outside 90-110% FMR Band	**33**	**88**	**100%**

*Data provided in this section are not weighted.

With 86 cases that were not ratified by any exemptions, 4 percent had a Payment Standard less than 90 percent of the Fair Market Rent, and 7 percent had a Payment Standard exceeding 110 percent of the FMR. Therefore, a total of 11 percent of the households did not meet HUD's Payment Standard requirements.

K. PIC/TRACS Analysis

The households included in this study were matched against the PIC/TRACS data files using identifying information (a combination of the Social Security Number, name, and date of birth) for the head of each household. Because this study covers FY 2006, an attempt was made to use historical PIC/TRACS files to identify the 50058/59 data for the specific effective date and type of action for which study data were collected.

However, PIC/TRACS data were received for any household (in the study sample) that were in the historical databases used by HUD analysts even if the specific study effective date and type of action did not match. When matching on the specific study effective date and type of action, only 1293 of the 2407 households in the study were represented. Therefore, most of the PIC/TRACS analysis for this report was based on the broader match (PIC/TRACS data received for any household in the study sample). Using these criteria, PIC records were found for 78 percent of the households in PHA-administered projects; TRACS records were found for 93 percent of the households in owner-administered projects. Of the 2407 households sampled,

1989 households (or 83%) were matched against PIC/TRACS. Note that because of the methods used to match the study households with the PIC/TRACS data, the findings from this analysis are not comparable to the findings in the FY 2005 PIC/TRACS analysis presented in the FY 2005 final report.

Analysis was conducted to compare the average dollars in gross rent error for households that matched PIC/TRACS with those that did not. Exhibit IV-34a provides the percentage of households in each of the three program types by presence or absence in PIC/TRACS, and the average dollars in error based on all households in the study. Exhibit IV-34b provides the same information, but uses only households with rent error as its base. These exhibits demonstrate that proportionally an equal number of households in error matched against PIC/TRACS data.

As presented in Exhibit IV-34b the average dollars in error for households in error is about the same whether PIC/TRACS data is present or absent.

Exhibit IV-34a
PIC/TRACS Data by Program Type
and Average Gross Dollars in Error for all Households

	PIC/TRACS PRESENT		PIC/TRACS ABSENT	
Administration Type	Percent of Households	Average Dollars in Error	Percent of Households	Average Dollars in Error
Public Housing	73%	$17	27%	$10
PHA-Administered Section 8	80%	$23	20%	$24
Total PHA-Administered	78%	$21	22%	$18
Total Owner-Administered	93%	$16	7%	$20
Total	83%	$19	17%	$18

Source: Table 20a

Exhibit IV-34b
PIC/TRACS Data by Program Type
and Average Gross Dollars in Error for Households in Error

	PIC/TRACS PRESENT		PIC/TRACS ABSENT	
Administration Type	Percent of Households	Average Dollars in Error	Percent of Households	Average Dollars in Error
Public Housing	76%	$47	24%	$33
PHA-Administered Section 8	80%	$58	20%	$61
Total PHA-Administered	79%	$55	21%	$51
Total Owner-Administered	92%	$49	8%	$52
Total	83%	$53	17%	$51

Source: Table 20b

Exhibit IV-35 presents the percentage of households and average dollars in error for households matched/not-matched with PIC/TRACS by payment type. Essentially the same proportion of households with and without matched PIC/TRACS data had proper payments.

Exhibit IV-35
Average Gross Dollars in Error by Payment Type and PIC/TRACS Data

	PIC/TRACS PRESENT		PIC/TRACS ABSENT	
Payment Type	**Percent of Households**	**Average Dollars in Error[1]**	**Percent of Households**	**Average Dollars in Error[1]**
Underpayment	20%	$69	17%	$55
Overpayment	17%	$34	19%	$47
Proper Payment	63%	n/a	64%	n/a
Total	100%	$19	100%	$18

[1]Average dollar error per under- and overpayment subgroups.

Exhibit IV-36 examines net and gross errors by program type and matched PIC/TRACS data. This table provides no new insights about the impact of matching PIC/TRACS data but highlights the importance of reviewing both gross and net rent errors.

Exhibit IV-36
Average Net and Gross Dollars in Error by Payment Type and PIC/TRACS Data

	Average Net Rent Error		Average Gross Rent Error	
Payment Type	**PIC/TRACS Present**	**PIC/TRACS Absent**	**PIC/TRACS Present**	**PIC/TRACS Absent**
Public Housing	-$6	-$4	$17	$10
PHA-Administered Section 8	-$11	$2	$23	$24
Total PHA-Administered	-$10	-$.43	$21	$18
Total Owner-Administered	-$6	-$2	$16	$20
Total	-$8	-$.62	$19	$18

For households where PIC/TRACS data matched on specific study effective date and type of action, further analysis was conducted to determine if certain key variables matched. The key variables included gross income, net income, total tenant payment, and tenant rent. Exhibit IV-37 provides the percentage of households where the data gathered through the QC process matched that in PIC/TRACS.

Exhibit IV-37
Percentage of Matched and Non-Matched Dollar Amounts for Key Variables
Matching Variables from the 50058/59 Form and PIC/TRACS

	Gross Income		Net Income		Total Tenant Payment		Tenant Rent	
Match Status	**PIC**	**TRACS**	**PIC**	**TRACS**	**PIC**	**TRACS**	**PIC**	**TRACS**
No Match	**3.5%**	**4.0%**	**6.7%**	**3.7%**	**7.2%**	**8.4%**	**21.6%**	**21.2%**
Match	**96.5%**	**96.0%**	**93.3%**	**96.3%**	**92.8%**	**91.6%**	**78.4%**	**78.8%**
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

V. Recommendations

This section discusses recommended changes to the study that will improve the data collection process or the quality of the data used in the analysis, as well as policy actions that could be taken to reduce error. Section A discusses changes to the quality control process itself. Section B addresses policy recommendations. Note that these recommendations have not changed significantly from recommendations made in previous final reports. It is even more important now (because the error rate is stabilizing) to learn more about local policies and procedures that impact error, and methods of changing those processes to reduce error. One additional recommendation has been made about gathering information related to the outcome of the quality control studies. It would be useful to know how improvements in program administration impact the characteristics of the tenants receiving assistance.

A. Modifying the Quality Control Process

The current methodology used by Macro to conduct its quality control study is based on the successes and failures of previous studies, and meets the established objectives. However, there are some recommendations that would be helpful for expanding the utility of data products as well as improving the overall efficiency of ongoing quality control studies. These include the following:

1) *Continue the HUD quality control studies as a regular, ongoing effort to monitor and manage HUD rent determination processes.* Ongoing evaluation of the subsidy programs administered by HUD is essential to the management of those programs. The primary goal of the quality control studies is to measure rent errors. However, these studies also give HUD the opportunity to learn more about alternatives to reducing rent errors, and better management of current and changing conditions at PHAs/projects. Annual evaluations facilitate more accurate cross-year comparisons of rent errors. They also allow for data collection and analysis staff to develop specific expertise with HUD policy areas, and develop tailored solutions for improving data quality. Further, other HUD-related topics could be investigated (e.g., the changing demographics of HUD tenants) and piggybacked on to the rent error data collection processes.

   Data collected through the quality control studies provides detail not available through other HUD sources (e.g., PIC/TRACS) that could be used to track such trends as the extent to which income and expense items are verified, or the number of sources of employment income received by a particular household or household member.

2) *Gather information to document the outcome of the HUD quality control studies.* Overall, the HUDQC studies indicate that both the percent of errors and dollars associated with those errors have decreased in the last six years. However, there is no information on changes in tenant behavior related to the identification and reduction of error. One might want to assume that reducing error should save HUD money. However, because the housing programs managed by HUD are not entitlement programs (meaning not everyone who is eligible for the program is entitled to benefits), as soon as an ineligible household is removed from the roles, another household takes that household's place.

The subsidy for the replacement household could be even higher than the subsidy for the previously subsidized household. The existing quality control studies identify the dollars associated with error, but do not identify an overall reduction in subsidy dollars. To really understand the overall impact of the quality control studies on subsidy funding, additional information is needed regarding both the tenants receiving the subsidies and the PHA/projects administering the housing benefits.

3) *Expand contractor access to verification obtained through inter-agency agreements.* Despite increasing rates of third-party verification, a large proportion of tenant income and expenses are not being verified. This is especially important given the study results indicate a significant relationship between third-party verification of certain types of income and rent errors.

   During the current study, household-level information was used to match sample household members with Social Security data files through the Enterprise Income Verification (EIV) system. Through this electronic match, verification was obtained for most sample household members' Social Security and Supplemental Security Income (SSA/SSI) benefits. However, there were many household members where a match between the study electronic files and the SSA/SSI electronic files was not found when expected and other situations where irresolvable discrepancies were identified. If Macro as the contractor for the HUDQC study could have access to the SSA/SSI database, these mismatches and discrepancies could be investigated further.

4) *Collect more information regarding PHA/project policies and practices.* Each PHA establishes its own policies, procedures, and forms for collecting the information that is ultimately used to calculate tenant rent. The differentiation in these practices should have some (possibly major) impact on the rent error, yet the analysis of the project practices and characteristics collected in the Project Staff Questionnaire designed for this study does not demonstrate the expected impact. Therefore, we recommend that focus groups and cognitive interviewing be used to identify additional PHA/project level factors that may impact error. This additional information could be used to revise the Project Staff Questionnaire to include questions focused on the specific practices expected to influence errors. As the data are already starting to reflect, as rent error decreases it will become increasingly difficult for HUD and PHA/project staff to continue to make changes that will reduce the error. Analysis of more detailed project-level data will assist in this process.

5) *Continue to investigate PIC/TRACS data for sampling and other purposes*. Ideally PIC/TRACS data would be used to select the quality control sample, and provide the actual data used by the PHA/project staff when calculating rent (in place of abstracting 50058/50059 Form data from the tenant file). However, the most recent match of the study sample households (using FY 2006 data) with PIC/TRACS data indicated that only 83 percent of the sample households are included in the PIC/TRACS databases. This is an improvement over the findings from the match using the FY 2005 study sample households which indicated that 76 percent of the sample households were included in the PIC/TRACS databases. However, this information continues to confirm that consideration should *not* be given to using these data for selecting the household sample until there is some assurance that the databases are all inclusive. Even if it is determined that PIC/TRACS data include

all households receiving assistance, using the PIC/TRACS data for selecting the household sample may not be appropriate unless the data are available for the specific period of time covered by the study.

6) *Continue to expand existing computer systems and processes that further automate data collection, processing, and reporting functions*. Most of the data for the current study were collected using an automated data collection system. This system continues to be enhanced for each study so it now, not only simplifies the data collection process and reduces the number of data collection errors, but also allows for review of the data at Macro headquarters as the data are being collected. While the existing systems work well, there are additional improvements that can be made to the data collection software, the field monitoring software, and the processing and tracking of third-party verifications. The next series of improvements should be aimed at reviewing the quality of the data as it is received, and increasing the amount of third party verification obtained by the contractor. Expanding and investing in better automated systems will yield large dividends in terms of costs, time required to collect and process data, as well as the breadth, depth, and quality of data.

B. Policy Actions

This study was not designed to provide recommendations regarding basic program objectives and policies. However, the findings from this study suggest that some major procedural changes should be considered when establishing and revising policy. Again, the recommendations in this section remain essentially the same. While HUD has initiated several initiatives in the last few years, the errors associated with the programs included in this study are no longer decreasing. Additional action is needed. The suggestions below are examples of the type of actions that need to be taken. Overall PHA/projects must be held accountable for their work, but HUD must provide the tools needed to accomplish the work accurately.

1) *HUD should continue its plans to implement use of the Department of Health and Human Services' "New Hires" income matching database as quickly as possible.* The Congressional authorization giving HUD access to HHS' "New Hires" income matching database provides the opportunity to correct errors associated with reported and unreported income. The majority of subsidy overpayment errors are associated with earned income determination errors, and the large majority of tenant income underreporting also relates to earned income. However, our experience working with the "New Hires" data indicates that caution needs to be taken when estimating the level of effort involved in the implementation of an income matching system. The data are extremely helpful in identifying unreported sources of income. However, the data are not current and often contain errors. Great care needs to be taken when using these data to insure that income is only counted when it is clear that it is received by the tenant and not simply because it is identified through the New Hires database.

2) *HUD should continue expanding support of the occupancy function and conducting outreach campaigns to PHAs and owners informing them of the Department's occupancy-related resources.* Provision of detailed, current occupancy handbooks is essential in addition to providing a mechanism for answering questions as they surface. Specifically,

HUD should develop a nationwide, consistent, reliable approach for providing guidance and support to both PHAs and owners.

It is also critical that there be a close link between the team that responds to field concerns and the staff responsible for writing HUD notices and guidance documents. The team responding to field questions and concerns knows what the problems are that face the field. These problems should be the subject of the guidance that comes from HUD.

3) *HUD should provide the PHA/owners with the forms, training, and other tools needed to determine rent correctly.* Rent calculation error could be reduced if HUD would provide structured forms for interviewing tenants, obtaining verifications, and calculating rent. Ideally, these tools would be provided in the form of computer-assisted interview software that minimizes the number of questions that need to be asked. Such systems would ensure that tenants are asked about all income sources and expenses that affect their rent. Manuals and training materials explaining how to implement requirements correctly and calculate rent accurately should be provided. To the extent that HUD program rules can be simplified, provision of automated and manual tools would be easier.

   HUD experts and local housing staff should be given an opportunity to work together to develop these tools and systems needed to reduce rent error. Many local PHA/owners have already developed forms, training materials, manuals, automated systems, and monitoring processes that have enabled them to provide accurate, efficient service to the tenants they serve. HUD should learn from these PHA/owners and develop materials that will help those PHA/owners who for one reason or another have not been as successful.

4) *HUD should continue to implement its on-site monitoring program, and PHA/owners should be held accountable for implementing HUD regulations and calculating rent accurately.* An on-site monitoring system that includes reviews at both the local and Federal level is essential to improving accountability. PHA/owners with excessive errors should be required to develop corrective action plans and show improvement within specified time periods. HUD has initiated extensive on-site monitoring efforts since the 2000 QC study, in contrast with its policies of most of the previous two decades. The most obvious explanation for the magnitude of error reductions in subsidy determinations between 2000 and 2006 is improved HUD monitoring and the expectation of such monitoring. However, as the dollars associated with rent error stop declining further action will be needed to help the PHAs and owners focus on policies and procedures that lead to error.

   Monitoring can be conducted at a variety of different levels. We recommend that HUD require PHA/owners to perform their own quality control reviews on a percentage of income determinations and rent calculations. Agencies that have aggressively sought to improve performance of their programs have had some significant successes, and one of the most frequently used error reduction strategies includes the establishment of internal quality control review procedures.

In addition to agency monitoring, HUD Field Offices and/or other national-level well-trained staff should conduct a re-review of a percentage of the cases reviewed at the local level to ensure that the quality control reviews are being conducted correctly, or select their own random sample of files for review. This type of oversight not only identifies errors, but also prevents them. In addition, it demonstrates HUD's concern and focuses PHA/owner attention on tenant income and rent.

5) *Federal laws, regulations, and HUD requirements should be simplified to the extent possible.* The current statutory environment poses substantial obstacles to efficient, accurate income and rent calculations. It contains dozens of requirements that may all be well-intentioned and have potentially desirable impacts but which, taken as a whole, make the income and rent determination process extremely complex. HUD has sought to issue guidance on virtually all aspects of current income and rent determination requirements, but some of the legislative provisions were written without any thought as to implications for their administrative complexity. While determining which income to count, which expenses to allow, and annualizing that information in a program with multiple objectives may always be complicated, the various specialized provisions that relate to small subparts of the population could be eliminated or simplified.

   The newest policy related to students is a recent example of such complex policies. PHA and project staff are required to gather a series of information to determine whether students continue to be eligible to receive assisted housing. For students who do not meet certain criteria, PHA/project staff are required to determine the eligibility of the student's parents. This new policy, while well intentioned, just adds to the complex rules PHA/project staff are required to implement when determining eligibility and calculating rent for assisted households.

6) *HUD should consider requiring some reexaminations to be completed less often than annually.* Many years ago, the reexaminations for elderly and disabled families were conducted biannually rather than annually. HUD should consider implementing this policy again or possibly conducting reexaminations for selected populations every three years. To remove the issues related to incorrect subsidies because of the annual increase in Social Security benefits, the policy *could* require adding the annual SSA cost of living adjustment (COLA) to the total annual income for the households included in this group. With the time-savings made available by this change in policy, PHA/project staff could spend more time conducting required reexaminations, following up on suspected cases of fraud, and conducting more internal monitoring of tenant files.

Appendix A—Rent Calculations

Appendix A—Rent Calculations

Rent Calculations by Program

1. Public Housing

a. Obtain the Total Tenant Payment (TTP).

b. Determine if the family includes any ineligible noncitizens. IF YES, **continue**. If NO, **go to d.**

c. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to #3 (continuation).** IF NO, **go to #4 (temporary deferral).**

MARKER (marks the return point after determining continuation of assistance status)

d. Obtain the Utility Allowance.

e. Determine if the tenant selected the Flat Rent. IF NO, **go to** f. IF YES, the QC RENT equals the Flat Rent. **Go to g.**

f. The amount of the tenant's rent (QC RENT) is the lower of: a. (TTP), minus d. (Utility Allowance), or the Flat Rent*.

g. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

*Note: If there is no Flat Rent, the QC rent will be capped with the Ceiling Rent to determine the dollar amount of error.

2. Section 8 Vouchers

a. Obtain TTP.

b. Obtain the Gross Rent.

c. Obtain Utility Allowance.

d. If TTP is greater than Gross Rent, then set TTP to Gross Rent.

e. Obtain Payment Standard[1] (the Payment Standard is based on the lower of the Unit (actual) Bedroom Size, and Family (eligible) Bedroom Size).

f. Obtain the household's Adjusted Monthly Income.

[1] For Project Based Vouchers, the Payment Standard equals the Gross Rent.

g. Subtract e. (Payment Standard) from b. (Gross Rent). If the Payment Standard is higher than the Gross Rent, use 0. Add a. (TTP) to g. (Gross Rent minus Payment Standard).

h. Determine if this is the initial occupancy for this dwelling unit. (Item 12b on the 50058 is yes). IF YES, **continue.** IF NO, **the Family Share = h. Go to l.**

i. Calculate 40 percent of the household's Adjusted Monthly Income (f.).

j. Determine if j. (40 percent of Adjusted Monthly Income) is equal to or greater than h. (TTP plus Gross Rent minus Payment Standard). IF YES, **the Family Share = h. Go to l.** IF NO, **procedural error. Family Share = h. Go to l.**

k. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to n.**

l. Determine if the family includes any citizens or eligible noncitizens. IF YES**, go to #3 (continuation).** IF NO, **go to #4 (temporary deferral).**

MARKER (marks the return point after determining continuation of assistance status)

m. Subtract c. (Utility Allowance) from the Family Share (h.). This is the QC RENT.

n. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

3. Section 8 Enhanced Voucher

a. Determine if household is receiving an Enhanced Voucher. If YES, **continue**. If NO, **use regular Voucher formula.**

b. Obtain the Total Tenant Payment.

c. Obtain the Gross Rent.

d. Determine the lesser of b. (TTP) or c. (Gross Rent).

e. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to g.**

f. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to #3 (continuation).** IF NO, **go to #4 (temporary deferral).**

MARKER (marks the return point after determining continuation of assistance status)

g. Obtain the Utility Allowance.

h. Subtract g. (Utility Allowance) from d. (the lesser of TTP or Gross Rent). This is the Family Rent to Owner (QC RENT).

i. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

j. Section 8 Project-Based, Section 202, Section 811, Section 8 Moderate Rehabilitation

a. Obtain the Gross Rent (Gross Rent equals the Contract Rent plus the Utility Allowance).

b. Obtain the TTP.

c. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to f.**

d. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to #3 (continuation).** IF NO, **go to #4 (temporary deferral).**

MARKER (marks the return point after determining continuation of assistance status)

e. Obtain the Utility Allowance.

f. If Subsidy Type on 50059 = 7 or 8 (PRAC), **go to h.**

g. Subtract e. (Utility Allowance) from b. (TTP) or a. (Gross Rent) whichever is lower. This is the QC RENT. **Go to i.**

h. Subtract e. (Utility Allowance) from b. (TTP). This is the QC RENT.

i. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

4. Manufactured Home Space Rental for Section 8 Vouchers

a. Obtain the Rent to Owner.

b. Obtain the owner maintenance and management charges for the space.

c. Obtain the Utility Allowance

d. Add together a. (Rent to Owner), b. (owner maintenance and management charges), and c. (utility allowance). This is the Space Rent.

e. Obtain the TTP.

f. Obtain the Payment Standard.

g. Subtract f. (Payment Standard) from d. (Space Rent).

h. Add e. (TTP) to g. (the amount by which the Space Rent exceeds the Payment Standard). This is the Family Share.

i. Determine if this is the initial occupancy for this dwelling unit. (Item 12b on the 50058 is yes). IF YES, **continue**. IF NO, **the Family Share = h. Go to m.**

j. Obtain the household's Adjusted Monthly Income.

k. Calculate 40 percent of the household's Adjusted Monthly Income.

l. Determine if k. (40 percent of Adjusted Monthly Income) is equal to or greater than h. (TTP plus Space Rent minus Payment Standard). If YES, **the Family Share = h.; go to m**. If NO, **Procedural Error. The family is not entitled to assistance in this unit.**

m. Determine if the family includes any ineligible noncitizens. IF YES, **continue.** If NO, **go to o.**

n. Determine if the family includes any citizens or eligible noncitizens. IF YES, **go to #3 (continuation).** IF NO, **go to #4 (temporary deferral).**

MARKER

o. Subtract c. (Utility Allowance) from h. (Family Share) to determine QC Rent (Family Rent to Owner).

p. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

Special Calculations for Household with Ineligible Noncitizens

1. Continuation of Assistance

a. Determine if the family was receiving assistance on June 19, 1995. IF YES, **continue**. IF NO, the FAMILY is eligible for prorated assistance; **go to #5 (proration formula).**

b. Determine if the FAMILY head or spouse is a citizen or eligible noncitizen. IF YES, **continue**. IF NO, the FAMILY is eligible for prorated assistance; **go to #5 (proration formula).**

c. Determine if the FAMILY includes any ineligible members other than the head, spouse, and child or parent of the head or spouse. IF NO, **continue.** IF YES, the FAMILY is eligible for prorated assistance; **go to #5 (proration formula).**

d. Determine if the FAMILY was granted continuation of assistance before November 29, 1996. IF YES, the FAMILY is eligible for full continuation of assistance. **Return to MARKER.** IF NO, the FAMILY is eligible for prorated assistance; **go to #5 (proration formula)**

2. Temporary Deferral of Termination of Assistance

a. Determine if Temporary Deferral of Termination of Assistance has been granted. If YES, **continue.** If NO, **go to d.**

b. Determine the date Temporary Deferral of Assistance was granted.

c. Determine if more than 18 months have passed since Temporary Deferral of Termination of Assistance was granted. IF YES, **go to d.** IF No, the FAMILY is entitled to Temporary Deferral of Termination of Assistance; **go to MARKER.**

d. Determine if the FAMILY includes a refugee under Section 207 of the Immigration and Naturalization Act or an individual seeking asylum under Section 208 of that Act. IF YES, **the Family is entitled to ongoing Deferral of Termination of Assistance; go to MARKER**. IF NO, **continue.**

e. Determine if the FAMILY was receiving assistance on June 19, 1995. If YES, **the Family is eligible for Temporary Deferral of Termination of Assistance; go to MARKER.**

f. Determine if the FAMILY is exercising its hearing rights (waiting for a decision from an INS or PHA/owner appeal). If **YES, go to MARKER.** IF NO, **continue.**

g. Determine if the PHA is making reasonable efforts to evict. IF YES, **go to MARKER.** IF NO, **Procedural Error,** HOUSEHOLD IS INELIGIBLE**.**

3. Proration Formula for Public Housing

a. Determine if this is a Public Housing case? IF YES, **continue.** IF NO, **go to #4.**

b. Determine the number of FAMILY members.

c. Determine the number of eligible FAMILY members.

d. Obtain the TTP.

e. Obtain the 95th percentile of Gross Rents for similarly sized public housing units in order to determine the public housing maximum rent.

f. Determine if the Family pays a Flat Rent. IF NO, **go to i.** IF YES, **continue.**

g. Obtain the Flat Rent.

h. If g. (Flat Rent) is greater than or equal to e. (Maximum Rent), there is no prorated rent. Use the Flat Rent; **go to n.** If g. (Flat Rent) is less than the e. (Maximum Rent), subtract the Flat Rent from the Maximum Rent. This is the Family's Maximum Subsidy. **Go to j.**

i. Subtract d. (TTP) from e. (Maximum Rent) to determine Maximum Subsidy.

j. Divide h. or i. (Maximum Subsidy) by b. (number of FAMILY members) and multiply by c. (number of eligible members) to determine the Eligible Subsidy for the FAMILY.

k. Subtract j. (Eligible Subsidy) from e. (Maximum Rent) to obtain the prorated TTP.

l. Obtain the Utility Allowance.

m. The amount of the tenant's rent (QC RENT) is k. (prorated TTP) minus l. (Utility Allowance). Did the Family accept the prorated rent? Y/N. IF NO, **go to #4.**

n. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error**

4. **Proration Formula for All Section 8 Programs**

a. Obtain the Rent to Owner (voucher).

b. Obtain the Utility Allowance

c. Obtain the Gross Rent.

Voucher Gross Rent = Rent to Owner plus the Utility Allowance.

d. Obtain the TTP.

e. Obtain the Payment Standard (Voucher).

f. Obtain the HAP.
Owner Administered: HAP = Gross Rent minus TTP.
Voucher: HAP = Gross Rent or Payment Standard (whichever is less) minus the TTP.
Enhanced Voucher: HAP = Gross Rent minus the Payment Standard.

g. Record the number of FAMILY members.

h. Record the number of eligible FAMILY members.

i. Divide f. (HAP) by g. (total number of FAMILY members), and then multiply the result by h. (number of eligible FAMILY members) to obtain the prorated HAP.

j. If Manufactured Home Space Rental, return to MARKER.

k. Subtract i. (prorated HAP) from c. (Gross Rent) to obtain the prorated Family Share.

l. Subtract b. (Utility Allowance) from k. (Prorated Family Share) to determine the prorated QC RENT.

m. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error.** IF NO, **dollar error.**

Appendix B—Weighting Procedures

Appendix B—Weighting Procedures

This appendix describes the procedures followed in weighting the sample data.

Study Population. The universe under study includes all projects and tenants located in the continental United States, Alaska, Hawaii, and Puerto Rico.

The following programs are included in the sample:

- PIH-administered Public Housing (Public Housing)

- PIH-administered Section 8 (PHA-administered Section 8)
  - Moderate Rehabilitation
  - Housing Choice Voucher Program

- Office of Housing-administered projects (owner-administered)
  - Section 8 New Construction/Substantial Rehabilitation
  - Section 8 Loan Management
  - Section 8 Property Disposition
  - Section 202 Project Rental Assistance Contracts (PRAC)
  - Section 202/162 Project Assistance Contracts (PAC)
  - Section 811 PRAC

The frames used to draw the sample include many out-of-scope projects such as projects in the Move-to-Work program and projects that have been demolished or that are no longer assisted housing. Many of these projects were identified before the sample was drawn, but others were not and had to be replaced. In addition, at times projects resulting from a merger of two or more projects or that were split into two or more were identified, resulting in difficult sampling decisions.

Weighting Strategy. The weighting procedure usually begins with the determination of the probability of selection of every unit in the sample. The use of purposive replacement for out-of-scope projects for any of several reasons makes the sample weight calculations complicated. The determination of an actual probability of selection for a replacement is impossible to make. A sampling weight proportional to what the probability would have been if the project had been selected originally is a reasonable estimate.

The probability of selection of a tenant was thus the product of the following combinations:

1) The probability of selection of the Primary Sampling Unit (PSU)
2) The probability of selection of a sub-PSU if the PSU was split
3) The probability of selection of the project from the PSU
4) The probability of selection of the tenant from the project.

The four probabilities were multiplied together and formed the preliminary weights. The weights were then adjusted to be added to estimates of the national total of tenants in

each program. The weights summed to 1,320,000 for the owner-administered programs, 955,000 for Public Housing, and 1,858,000 for the PHA-administered Section 8 programs.

Primary Sampling Unit Probabilities. Each PSU was sampled with probabilities proportional to size. The size measure used was the number of tenants adjusted to obtain equal expectation for the three major types of programs in the study. The number of tenants of each kind in a PSU was multiplied by an inflation factor to make all three numbers equal. The size measures were then added; the PSU probability of selection was its size measure divided by the sum of the size measures nationwide, multiplied by the number of PSUs to be selected (60). PSUs with probabilities greater than one could be selected more than once (Sampling with Minimal Replacement). For weighting purposes, probabilities greater than one were set to 1.0. Some PSUs were divided into multiple geographic areas and one of these smaller geographic areas was selected with probabilities proportional to size. This resulted in the same probability that would have ensued had the division taken place before the sample was drawn.

Project Probabilities. This was defined as the minimum of kt/T and one, where k is the number of projects in the program selected from the PSU, t is the number of tenants in the project and T is the number of tenants in the program that are in the PSU. The PHA-administered Section 8 projects could have a probability greater than one for sampling purposes (meaning they could be sampled more than once) but for the other two major program types, if the calculated probability exceeded one, it was set to one and all the other probabilities were readjusted so they added to the allocation for the program in the PSU. For weighting purposes probabilities greater than one among PHA-administered Section 8 projects were set to one.

Tenant Probabilities. This is the total number of tenants sampled from the project divided by the estimated number of tenants whose annual recertifications were conducted during the study period. The estimate was obtained by multiplying the total number of tenants by the proportion of tenants selected who were in scope for the study (i.e., who were subsidized by one of the programs). For example, if six tenants were reviewed to find four tenants who were both in scope and available for interviewing, one who was out of town, and one who was not subsidized, from a list of 120 tenants, then the estimate would be 120 x (5/6) = 100 tenants.

Post-Stratification. The sample was designed to obtain similar numbers of tenants in each of the following three categories of projects:

- Public Housing projects
- PHA-administered Section 8 projects
- Owner-administered projects

HUD provided approximate totals for each of the three categories. The sampling frame totals did not correspond exactly to these numbers and required extensive adjustments. This was in part because the numbers were approximations; but also in part because the geographic areas affected by the hurricanes were excluded from the frame, but included during the weighting process. To recapitulate, the weights were adjusted so that they add up to the totals provided by the external source, so the sum of the weights would have been the same had a different sample been selected.

Trimming the Weights. The final step was the trimming of the weights. Weights more than three times the median weight were set to three times the median weight and all the weights were readjusted. Large weights usually resulted from incorrect frame information.

Effective Sample Size. The weights led to an effective sample size (because of the weighting) of 617 (down from an actual size of 802) for the Office of Housing-administered projects, 635 for the Public Housing projects (down from 800), and 621 for the PHA-administered Section 8 projects (down from 800).

Variance Estimation. Standard errors were obtained for a number of estimates using the SURVEYMEANS procedure in SAS. This procedure uses Taylor Series to estimate standard errors, confidence intervals, and coefficients of variation.

Taylor Series estimation of variances requires identification of PSUs. The one PSU selected more than once was divided into sub-PSUs for variance estimation purposes. In addition, the sampling approach makes the allocation of projects per PSU and program variable. The net result is that the variance estimates presented in this report are conservative. If it were possible to measure the standard errors directly, they would in all likelihood be slightly smaller than the ones presented in this report.

Variances were used to determine if there were significant differences in error estimates between FY 2006 and FY 2005. The variance of the differences was estimated as the sum of the variances for the two years. The differences in monthly means of gross rent error and net error were, respectively, divided by the square root of the sum of the variances of the means and the results were considered statistically significant (with two-tailed t-test) at the $p < .05$ level if the result was greater than 1.95. Gross rent error and net rent error were compared for each program type, for all PHA-administered projects and for all projects. None of the differences was found statistically significant.

To test cross-year differences in error (or proper payment) rates, the variance for each year's rate was calculated as $p_i(1-p_i)/n_i$; where n_i is the number of tenants in a given category (e.g., Public Housing). The *z* score is generated by dividing the rate difference with the square root of the pooled variance for the two years. The comparison was conducted for each program type and total sample. Based on rent errors within the $5 differential, no cross-year difference in proper payment rate was found statistically significant at $p < .05$ level. With exactly-matched rent error, the proper payment rate for owner-administered projects in FY 2006 (52.5%) was found significantly higher than that in FY 2005 (46.0%) at $p < 0.01$ level.

Appendix C—Source Tables

Appendix C––Source Tables Based on Quality Control Data

HUD QC FY 2006

Table 1a.
Verification of QC Rent Components, Third-Party Verbal or In Writing, Documentation, or EIV

	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	111	(8.1%)	46	(3.4%)	1,207	(88.5%)
Pension, Etc.	9	(0.4%)	24	(1.0%)	2,335	(98.6%)
Public Assistance	76	(12.9%)	5	(0.9%)	513	(86.2%)
Other Income	117	(13.2%)	33	(3.8%)	734	(83.0%)
Asset Income	24	(3.3%)	80	(10.9%)	627	(85.8%)
Child Care Expense	68	(22.9%)	6	(2.0%)	222	(75.1%)
Disability Expense	7	(85.5%)			1	(14.5%)
Medical Expense	120	(10.0%)	186	(15.6%)	891	(74.4%)

HUD QC FY 2006

Table 1b.
Verification of QC Rent Components, Third-Party In Writing

	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	315	(22.5%)	60	(4.3%)	1,026	(73.2%)
Pension, Etc.	88	(3.7%)	135	(5.7%)	2,149	(90.6%)
Public Assistance	218	(34.0%)	9	(1.3%)	415	(64.7%)
Other Income	300	(31.2%)	38	(4.0%)	623	(64.8%)
Asset Income	93	(12.7%)	153	(20.8%)	487	(66.4%)
Child Care Expense	85	(28.7%)	11	(3.7%)	200	(67.6%)
Disability Expense	7	(85.5%)			1	(14.5%)
Medical Expense	209	(17.5%)	341	(28.5%)	648	(54.1%)

HUD QC FY 2006

Table 1c.
Verification of QC Rent Components, Third Party in Writing or EIV (Enterprise Income Verification)

	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	293	(20.9%)	63	(4.5%)	1,045	(74.6%)
Pension, Etc.	59	(2.5%)	113	(4.7%)	2,200	(92.8%)
Public Assistance	209	(32.6%)	7	(1.1%)	425	(66.2%)
Other Income	299	(31.1%)	38	(4.0%)	624	(64.9%)
Asset Income	93	(12.7%)	153	(20.8%)	487	(66.4%)
Child Care Expense	85	(28.7%)	11	(3.7%)	200	(67.6%)
Disability Expense	7	(85.5%)			1	(14.5%)
Medical Expense	188	(15.7%)	344	(28.7%)	665	(55.5%)

HUD QC FY 2006

Table 1d.
Verification of QC Rent Components, Third Party - Verbal

	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	1,387	(99.0%)			15	(1.0%)
Pension, Etc.	2,369	(99.9%)	2	(0.1%)	1	(0.1%)
Public Assistance	633	(98.6%)			9	(1.4%)
Other Income	955	(99.3%)			7	(0.7%)
Asset Income	729	(99.5%)	4	(0.5%)		
Child Care Expense	296	(100.0%)				
Disability Expense	8	(100.0%)				
Medical Expense	1,190	(99.4%)	6	(0.5%)	1	(0.1%)

HUD QC FY 2006

Table 1e.
Verification of QC Rent Components, Documentation

	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	1,245	(88.9%)	33	(2.5%)	122	(8.7%)
Pension, Etc.	2,239	(94.4%)	87	(3.7%)	46	(1.9%)
Public Assistance	563	(87.7%)	2	(0.3%)	77	(12.0%)
Other Income	854	(88.8%)	14	(1.5%)	93	(9.7%)
Asset Income	579	(79.0%)	100	(13.7%)	54	(7.4%)
Child Care Expense	274	(92.5%)	5	(1.8%)	17	(5.8%)
Disability Expense	8	(100.0%)				
Medical Expense	921	(77.0%)	222	(18.6%)	53	(4.5%)

HUD QC FY 2006

Table 1f.
Verification of QC Rent Components, EIV (Enterprise Income Verification)

	NOT VERIFIED		PARTIALLY VERIFIED		FULLY VERIFIED	
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	1,375	(98.2%)	9	(0.6%)	17	(1.2%)
Pension, Etc.	2,316	(97.7%)	27	(1.1%)	29	(1.2%)
Public Assistance	632	(98.4%)	1	(0.2%)	9	(1.3%)
Other Income	960	(99.9%)			1	(0.1%)
Asset Income	733	(100.0%)				
Child Care Expense	296	(100.0%)				
Disability Expense	8	(100.0%)				
Medical Expense	1,170	(97.8%)	12	(1.0%)	15	(1.2%)

HUD QC FY 2006

Table 2.
Percentage of Households by Payment Type and Program Type

		UNDERPAYMENT			PROPER PAYMENT			OVERPAYMENT			TOTAL		
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED	**Public Housing**	185	(19.4%)	(23.0%)	624	(65.4%)	(23.8%)	145	(15.2%)	(20.6%)	955	(100.0%)	(23.1%)
	Section 8	405	(21.8%)	(50.3%)	1,124	(60.5%)	(42.9%)	329	(17.7%)	(46.6%)	1,858	(100.0%)	(45.0%)
	Total	590	(21.0%)	(73.3%)	1,749	(62.2%)	(66.6%)	474	(16.9%)	(67.3%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED		215	(16.3%)	(26.7%)	875	(66.3%)	(33.4%)	230	(17.5%)	(32.7%)	1,320	(100.0%)	(31.9%)
TOTAL		805	(19.5%)	(100.0%)	2,624	(63.5%)	(100.0%)	704	(17.0%)	(100.0%)	4,133	(100.0%)	(100.0%)

HUD QC FY 2006

Table 2(S).
Percentage of Households by Payment Type and Program Type
(Proper payment based on exact match of Actual and QC Rent)

		UNDERPAYMENT			PROPER PAYMENT			OVERPAYMENT			TOTAL		
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED	**Public Housing**	226	(23.6%)	(22.4%)	517	(54.1%)	(24.5%)	212	(22.2%)	(21.0%)	955	(100.0%)	(23.1%)
	Section 8	483	(26.0%)	(47.9%)	902	(48.6%)	(42.7%)	472	(25.4%)	(46.7%)	1,858	(100.0%)	(45.0%)
	Total	709	(25.2%)	(70.3%)	1,419	(50.5%)	(67.2%)	685	(24.3%)	(67.7%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED		300	(22.7%)	(29.7%)	693	(52.5%)	(32.8%)	327	(24.8%)	(32.3%)	1,320	(100.0%)	(31.9%)
TOTAL		1,009	(24.4%)	(100.0%)	2,112	(51.1%)	(100.0%)	1,012	(24.5%)	(100.0%)	4,133	(100.0%)	(100.0%)

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Table 3.
Dollar Rent Error by Program Type

		ACTUAL RENT (MONTHLY)				QC RENT (MONTHLY)				GROSS RENT ERROR (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
PHA ADMINISTERED	**Public Housing**	955	(23.1%)	189,752	198.69	955	(23.1%)	195,214	204.41	955	(23.1%)	14,401	15.08
	Section 8	1,858	(45.0%)	370,891	199.62	1,858	(45.0%)	386,480	208.01	1,858	(45.0%)	43,335	23.32
	Total	2,813	(68.1%)	560,643	199.30	2,813	(68.1%)	581,694	206.79	2,813	(68.1%)	57,737	20.52
OWNER ADMINISTERED		1,320	(31.9%)	242,765	183.91	1,320	(31.9%)	250,003	189.40	1,320	(31.9%)	21,777	16.50
TOTAL		4,133	(100.0%)	803,407	194.39	4,133	(100.0%)	831,696	201.23	4,133	(100.0%)	79,514	19.24

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Table 4.
Dollar Error Amount by Payment Type and Program Type

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
PHA ADMINISTERED	**Public Housing**	186	(23.0%)	9,956	53.77	145	(20.6%)	4,446	30.56	955	(23.1%)	195,214	204.41
	Section 8	405	(50.3%)	29,516	72.89	329	(46.6%)	13,819	42.05	1,858	(45.0%)	386,480	208.01
	Total	590	(73.3%)	39,472	66.89	474	(67.3%)	18,265	38.53	2,813	(68.1%)	581,694	206.79
OWNER ADMINISTERED		215	(26.7%)	14,545	67.80	230	(32.7%)	7,232	31.39	1,320	(31.9%)	250,003	189.40
TOTAL		805	(100.0%)	54,017	67.14	704	(100.0%)	25,497	36.19	4,133	(100.0%)	831,696	201.23

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Table 4(S).
Dollar Error Amount by Payment Type and Program Type
(Proper payment based on exact match of Actual and QC Rent)

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
PHA ADMINISTERED	**Public Housing**	226	(22.4%)	10,056	44.59	212	(21.0%)	4,594	21.62	955	(23.1%)	195,214	204.41
	Section 8	483	(47.9%)	29,762	61.60	472	(46.7%)	14,172	30.00	1,858	(45.0%)	386,480	208.01
	Total	709	(70.3%)	39,818	56.19	685	(67.7%)	18,767	27.40	2,813	(68.1%)	581,694	206.79
OWNER ADMINISTERED		300	(29.7%)	14,740	49.13	327	(32.3%)	7,503	22.95	1,320	(31.9%)	250,003	189.40
TOTAL		1,009	(100.0%)	54,558	54.09	1,012	(100.0%)	26,269	25.96	4,133	(100.0%)	831,696	201.23

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Table 5.
Gross and Net Rent Error by Program Type

		GROSS RENT ERROR (MONTHLY)				NET RENT ERROR (MONTHLY)				QC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
PHA ADMINISTERED	**Public Housing**	955	(23.1%)	14,401	15.08	955	(23.1%)	-5,510	-5.77	955	(23.1%)	195,214	204.41
	Section 8	1,858	(45.0%)	43,335	23.32	1,858	(45.0%)	-15,698	-8.45	1,858	(45.0%)	386,480	208.01
	Total	2,813	(68.1%)	57,737	20.52	2,813	(68.1%)	-21,207	-7.54	2,813	(68.1%)	581,694	206.79
OWNER ADMINISTERED		1,320	(31.9%)	21,777	16.50	1,320	(31.9%)	-7,313	-5.54	1,320	(31.9%)	250,003	189.40
TOTAL		4,133	(100.0%)	79,514	19.24	4.133	(100.0%)	-28,520	-6.90	4,133	(100.0%)	831,696	201.23

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Table 5(S).
Gross and Net Rent Error by Program Type
(Proper payment based on exact match of Actual and QC Rent)

		GROSS RENT ERROR (MONTHLY)				NET RENT ERROR (MONTHLY)				QC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
PHA ADMINISTERED	**Public Housing**	955	(23.1%)	14,650	15.34	955	(23.1%)	-5,462	-5.92	955	(23.1%)	195,214	204.41
	Section 8	1,858	(45.0%)	43,934	23.65	1,858	(45.0%)	-15,589	-8.29	1,858	(45.0%)	386,480	208.01
	Group Total	2,813	(68.1%)	58,584	20.83	2,813	(68.1%)	-21,051	-7.49	2,813	(68.1%)	581,694	206.79
OWNER ADMINISTERED		1,320	(31.9%)	22,243	16.85	1,320	(31.9%)	-7,238	-5.48	1,320	(31.9%)	250,003	189.40
TOTAL		4,133	(100.0%)	80,827	19.56	4,133	(100.0%)	-28,289	-6.85	4,133	(100.0%)	831,696	201.23

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Table 6.
Case Type by Program Type

		CERTIFICATIONS			RECERTIFICATIONS/ NON-OVERDUE			RECERTIFICATIONS/ OVERDUE			TOTAL		
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED	**Public Housing**	136	(14.3%)	(21.0%)	775	(81.2%)	(23.1%)	44	(4.6%)	(33.6%)	955	(100.0%)	(23.1%)
	Section 8	287	(15.4%)	(44.3%)	1,499	(80.7%)	(44.7%)	72	(3.9%)	(55.3%)	1,858	(100.0%)	(45.0%)
	Total	423	(15.0%)	(65.3%)	2,275	(80.9%)	(67.8%)	116	(4.1%)	(88.9%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED		224	(17.0%)	(34.7%)	1,081	(81.9%)	(32.2%)	14	(1.1%)	(11.1%)	1,320	(100.0%)	(31.9%)
TOTAL		647	(15.7%)	(100.0%)	3,356	(81.2%)	(100.0%)	130	(3.2%)	(100.0%)	4,133	(100.0%)	(100.0%)

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Table 7.
Percentage of Newly Certified Households Meeting Certification Criteria

	MET CRITERION		DID NOT MEET CRITERION	
	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
Citizenship	632	(97.7%)	15	(2.3%)
Social Security Number	630	(97.4%)	17	(2.6%)
Consent Form	613	(94.7%)	34	(5.3%)
Low and Very Low Income	647	(100.0%)		
Meets All Eligibility Criteria	588	(90.9%)	59	(9.1%)

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Table 7b.
Percentage of Newly Certified Households Meeting Certification Criteria by Program Type

		MET CRITERION		DID NOT MEET CRITERION	
		# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
PUBLIC HOUSING	**Citizenship**	132	(96.7%)	4	(3.3%)
	Social Security Number	135	(98.9%)	1	(1.1%)
	Consent Form	125	(91.8%)	11	(8.2%)
	Low and Very Low Income	136	(100.0%)		
	Meets All Eligibility Criteria	119	(87.5%)	17	(12.5%)
PHA-ADMINISTERED SECTION 8	**Citizenship**	287	(100.0%)		
	Social Security Number	281	(97.9%)	6	(2.1%)
	Consent Form	268	(93.5%)	19	(6.5%)
	Low and Very Low Income	287	(100.0%)		
	Meets All Eligibility Criteria	264	(92.1%)	23	(7.9%)
OWNER-ADMINISTERED	**Citizenship**	214	(95.2%)	11	(4.8%)
	Social Security Number	215	(95.7%)	10	(4.3%)
	Consent Form	220	(98.1%)	4	(1.9%)
	Low and Very Low Income	224	(100.0%)		
	Meets All Eligibility Criteria	205	(91.5%)	19	(8.5%)

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Table 8.
Dollar Error Amount by Payment Type and Case Type

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
CERTIFICATION		127	(15.8%)	7,391	58.25	107	(15.1%)	3,688	34.62	647	(15.7%)	108,290	167.36
RECERTIFICATION	**Non-Overdue**	606	(75.3%)	42,213	69.65	572	(81.3%)	19,201	33.54	3,356	(81.2%)	695,436	207.24
	Overdue	72	(8.9%)	4,412	61.60	25	(3.6%)	2,607	102.48	130	(3.2%)	27,970	214.82
	Total	678	(84.2%)	46,626	68.80	598	(84.9%)	21,809	36.47	3,486	(84.3%)	723,406	207.52
TOTAL		805	(100.0%)	54,017	67.14	704	(100.0%)	25,497	36.19	4,133	(100.0%)	831,696	201.23

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Table 8(S).
Dollar Error Amount by Payment Type and Case Type
(Proper payment based on exact match of Actual and QC Rent)

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				QC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
CERTIFICATION		151	(15.0%)	7,445	49.29	132	(13.0%)	3,760	28.52	647	(15.7%)	108,290	167.35
RECERTIFICATION	**Non-Overdue**	782	(77.5%)	42,680	54.59	848	(83.8%)	19,888	23.45	3,356	(81.2%)	695,436	207.24
	Overdue	76	(7.5%)	4,423	58.49	32	(3.2%)	2,621	81.84	130	(3.2%)	27,970	214.82
	Total	857	(85.0%)	47,103	54.93	880	(87.0%)	22,509	25.58	3,486	(84.3%)	723,406	207.52
TOTAL		1,009	(100.0%)	54,558	54.09	1,012	(100.0%)	26,269	25.96	4,133	(100.0%)	831,696	201.23

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Table 9.
Largest Component Error for Households with Rent Error (Annual Dollars)

	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
Earned Income	396	(26.2%)	1,797,517	4,544
Pension, Etc.	376	(24.9%)	845,053	2,246
Public Assistance	134	(8.8%)	243,396	1,823
Other Income	153	(10.2%)	381,517	2,488
Asset Income	29	(1.9%)	50,686	1,733
Dependent Allowance	51	(3.4%)	36,114	703
Elderly HH Allowance	30	(2.0%)	12,161	400
Child Care Allowance	65	(4.3%)	138,979	2,128
Medical Allowance	261	(17.3%)	286,985	1,099
No Error	13	(0.8%)	0	0
TOTAL	1,509	(100.0%)	3,792,407	2,513

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Table 10.
Total and Largest Dollar Error by Program Type for Households with Rent Errors

		TOTAL DOLLAR IN ERROR				LARGEST DOLLAR ERROR			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Average Dollar Amount
PHA ADMINISTERED	**Public Housing**	331	(21.9%)	938,530	2,838.78	331	(21.9%)	732,536	2,215.71
	Section 8	734	(48.6%)	2,452,730	3,343.79	734	(48.6%)	2,018,764	2,752.17
	Total	1,064	(70.5%)	3,391,260	3,186.89	1,064	(70.5%)	2,751,300	2,585.50
OWNER ADMINISTERED		445	(29.5%)	1,261,793	2,836.11	445	(29.5%)	1,041,107	2,340.08
TOTAL		1,509	(100.0%)	4,653,053	3,083.47	1,509	(100.0%)	3,792,407	2,513.14

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Table 11.
QC Rent Components by Payment Type and Administration Type

		PHA ADMINISTERED			OWNER ADMINISTERED			TOTAL		
		# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases
UNDER-PAYMENT	Earned Income	242	(8.6%)	(83.1%)	49	(3.7%)	(16.9%)	291	(7.0%)	(100.0%)
	Pension, Etc.	233	(8.3%)	(70.9%)	96	(7.2%)	(29.1%)	328	(7.9%)	(100.0%)
	Public Assistance	80	(2.9%)	(78.2%)	22	(1.7%)	(21.8%)	103	(2.5%)	(100.0%)
	Other Income	128	(4.6%)	(75.2%)	42	(3.2%)	(24.8%)	171	(4.1%)	(100.0%)
	Asset Income	51	(1.8%)	(58.3%)	37	(2.8%)	(41.7%)	88	(2.1%)	(100.0%)
	Dependent Allowance	51	(1.8%)	(88.8%)	6	(0.5%)	(11.2%)	57	(1.4%)	(100.0%)
	Elderly HH Allowance	57	(2.0%)	(100.0%)	85	(3.0%)	(97.1%)	57	(1.4%)	(100.0%)
	Child Care Allowance	34	(1.2%)	(69.6%)	15	(1.1%)	(30.4%)	49	(1.2%)	(100.0%)
	Disability Allowance									
	Medical Allowance	98	(3.5%)	(52.2%)	90	(6.8%)	(47.8%)	189	(4.6%)	(100.0%)
	NO ERROR	4	(0.1%)	(70.5%)	2	(0.1%)	(29.5%)	5	(0.1%)	(100.0%)
PROPER PAYMENT	Earned Income	162	(5.7%)	(89.1%)	20	(1.5%)	(10.9%)	181	(4.4%)	(100.0%)
	Pension, Etc.	242	(8.6%)	(59.5%)	165	(12.5%)	(40.5%)	407	(9.8%)	(100.0%)
	Public Assistance	76	(2.7%)	(90.1%)	8	(0.6%)	(9.9%)	84	(2.0%)	(100.0%)
	Other Income	115	(4.1%)	(74.7%)	39	(3.0%)	(25.3%)	154	(3.7%)	(100.0%)
	Asset Income	162	(5.8%)	(70.4%)	68	(5.2%)	(29.6%)	231	(5.6%)	(100.0%)
	Dependent Allowance	75	(2.7%)	(98.7%)	1	(0.1%)	(1.3%)	76	(1.8%)	(100.0%)
	Elderly HH Allowance	3	(0.2%)	(2.9%)	41	(1.5%)	(69.7%)	87	(2.1%)	(100.0%)
	Child Care Allowance	38	(1.4%)	(87.7%)	5	(0.4%)	(12.3%)	43	(1.1%)	(100.0%)
	Disability Allowance	2	(0.1%)	(100.0%)				2	(0.1%)	(100.0%)
	Medical Allowance	122	(4.3%)	(45.1%)	148	(11.2%)	(54.9%)	270	(6.5%)	(100.0%)
	NO ERROR	1,005	(35.7%)	(64.8%)	547	(41.4%)	(35.3%)	1,552	(37.5%)	(100.0%)
OVER-PAYMENT	Earned Income	139	(5.0%)	(73.0%)	52	(3.9%)	(27.0%)	191	(4.6%)	(100.0%)
	Pension, Etc.	181	(6.4%)	(64.2%)	101	(7.7%)	(35.8%)	283	(6.8%)	(100.0%)
	Public Assistance	51	(1.8%)	(73.5%)	19	(1.4%)	(26.5%)	70	(1.7%)	(100.0%)
	Other Income	56	(2.0%)	(62.2%)	34	(2.6%)	(37.8%)	91	(2.2%)	(100.0%)
	Asset Income	82	(2.9%)	(62.7%)	49	(3.7%)	(37.3%)	130	(3.2%)	(100.0%)
	Dependent Allowance	52	(1.8%)	(84.2%)	10	(0.7%)	(15.8%)	61	(1.5%)	(100.0%)
	Elderly HH Allowance	18	(1.4%)	(30.3%)				59	(1.4%)	(100.0%)
	Child Care Allowance	57	(2.0%)	(82.4%)	12	(0.9%)	(17.6%)	69	(1.7%)	(100.0%)
	Disability Allowance									
	Medical Allowance	158	(5.6%)	(61.0%)	101	(7.6%)	(39.0%)	258	(6.2%)	(100.0%)
	NO ERROR	8	(0.3%)	(100.0%)				8	(0.2%)	(100.0%)
TOTAL w/Rent Error Calc		2,813	(100.0%)	(68.1%)	1,320	(100.0%)	(31.9%)	4,133	(100.0%)	(100.0%)

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Table 12a.
Elderly/Disabled Allowances

	NON-ELDERLY/DISABLED HH			ELDERLY/DISABLED HH			TOTAL		
	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases
No Allowance	1,873	(97.8%)	(99.8%)	3	(0.1%)	(0.2%)	1,876	(45.4%)	(100.0%)
Incorrect Allowance	42	(2.2%)	(20.0%)	168	(7.2%)	(80.0%)	210	(5.1%)	(100.0%)
Correct Allowance				2,047	(92.3%)	(100.0%)	2,047	(49.5%)	(100.0%)
TOTAL	1,915	(100.0%)	(46.3%)	2,218	(100.0%)	(53.7%)	4,133	(100.0%)	(100.0%)

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Table 12b.
Dependent Allowances

	HH W/OUT DEPENDENT			HH W/DEPENDENT			TOTAL		
	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases
No Allowance	2,146	(99.4%)	(100.0%)				2,146	(51.9%)	(100.0%)
Incorrect Allowance	13	(0.6%)	(5.3%)	230	(11.7%)	(94.7%)	244	(5.9%)	(100.0%)
Correct Allowance				1,743	(88.3%)	(100.0%)	1,743	(42.2%)	(100.0%)
TOTAL	2,159	(100.0%)	(52.2%)	1,974	(100.0%)	(47.8%)	4,133	(100.0%)	(100.0%)

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Table 13.
Calculation Errors on Form 50058/59

	50058		50059		TOTAL	
	# of Errors (in 1,000)	# of Cases (in 1,000)	# of Errors (in 1,000)	# of Cases (in 1,000)	# of Errors (in 1,000)	# of Cases (in 1,000)
Household Composition	370	357	69	66	439	423
Net Family Assets and Income	316	210	188	98	505	308
Allowances and Adjusted Income	2,093	1,379	169	74	2,261	1,452
Family Rent and Subsidy Information	403	246	75	47	479	293

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Table 14.
Consistency Errors on Form 50058/59

	50058		50059		TOTAL	
	# of Errors (in 1,000)	# of Cases (in 1,000)	# of Errors (in 1,000)	# of Cases (in 1,000)	# of Errors (in 1,000)	# of Cases (in 1,000)
General Information	30	30	61	49	92	79
Household Composition	1,176	336	70	62	1,246	398
Net Family Assets and Income	249	217	4	2	253	219
Allowances and Adjusted Income	372	362	24	15	396	377
Family Rent and Subsidy Information	247	244	8	6	255	250

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Table 15a.
Verification of Form 50058/59 Rent Components, Third Party Verbal or In Writing, Documentation, or EIV

	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	162	(12.2%)	268	(20.0%)	906	(67.8%)	1,336	(100.0%)
Pension, Etc.	218	(9.4%)	282	(12.2%)	1,820	(78.4%)	2,320	(100.0%)
Public Assistance	134	(22.7%)	75	(12.6%)	384	(64.7%)	593	(100.0%)
Other Income	229	(26.0%)	99	(11.3%)	553	(62.8%)	881	(100.0%)
Asset Income	53	(9.0%)	41	(6.9%)	498	(84.1%)	593	(100.0%)
Child Care Expense	28	(12.2%)	38	(16.7%)	162	(71.1%)	227	(100.0%)
Medical Expense	90	(10.8%)	187	(22.5%)	557	(66.7%)	834	(100.0%)

HUD QC FY 2006

Table 15b.
Verification of Form 50058/59 Rent Components, Third Party in Writing

	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	473	(35.4%)	172	(12.9%)	691	(51.7%)	1,336	(100.0%)
Pension, Etc.	1,000	(43.1%)	176	(7.6%)	1,145	(49.3%)	2,320	(100.0%)
Public Assistance	255	(43.0%)	47	(7.9%)	291	(49.1%)	593	(100.0%)
Other Income	406	(46.1%)	67	(7.6%)	408	(46.3%)	881	(100.0%)
Asset Income	220	(37.2%)	25	(4.2%)	348	(58.6%)	593	(100.0%)
Child Care Expense	63	(27.6%)	32	(14.0%)	133	(58.4%)	227	(100.0%)
Medical Expense	462	(55.4%)	68	(8.1%)	304	(36.5%)	834	(100.0%)

HUD QC FY 2006

Table 15c.
Verification of Form 50058/59 Rent Components, Third Party in writing or EIV (Enterprise Income Verification)

	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	426	(31.9%)	198	(14.8%)	712	(53.3%)	1,336	(100.0%)
Pension, Etc.	743	(32.0%)	205	(8.8%)	1,372	(59.1%)	2,320	(100.0%)
Public Assistance	241	(40.7%)	50	(8.4%)	302	(51.0%)	593	(100.0%)
Other Income	405	(46.0%)	67	(7.6%)	409	(46.4%)	881	(100.0%)
Asset Income	220	(37.2%)	25	(4.2%)	348	(58.6%)	593	(100.0%)
Child Care Expense	63	(27.6%)	32	(14.0%)	133	(58.4%)	227	(100.0%)
Medical Expense	421	(50.4%)	83	(10.0%)	330	(39.6%)	834	(100.0%)

HUD QC FY 2006

Table 15d.
Verification of Form 50058/59 Rent Components, Third Party—Verbal

	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	1,319	(98.7%)	2	(0.1%)	16	(1.2%)	1,336	(100.0%)
Pension, Etc.	2,316	(99.8%)			4	(0.2%)	2,320	(100.0%)
Public Assistance	587	(99.0%)	1	(0.2%)	5	(0.8%)	593	(100.0%)
Other Income	872	(99.0%)	5	(0.6%)	4	(0.4%)	881	(100.0%)
Asset Income	591	(99.8%)			1	(0.2%)	593	(100.0%)
Child Care Expense	224	(98.6%)			3	(1.4%)	227	(100.0%)
Medical Expense	830	(99.4%)			5	(0.6%)	834	(100.0%)

HUD QC FY 2006

Table 15e.
Verification of Form 50058/59 Rent Components, Documentation

	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	1,115	(83.5%)	61	(4.6%)	160	(12.0%)	1,336	(100.0%)
Pension, Etc.	1,921	(82.8%)	52	(2.2%)	347	(15.0%)	2,320	(100.0%)
Public Assistance	492	(83.0%)	24	(4.0%)	77	(13.0%)	593	(100.0%)
Other Income	725	(82.3%)	22	(2.5%)	133	(15.1%)	881	(100.0%)
Asset Income	475	(80.1%)	9	(1.6%)	108	(18.3%)	593	(100.0%)
Child Care Expense	200	(88.0%)	4	(2.0%)	23	(10.0%)	227	(100.0%)
Medical Expense	693	(83.1%)	35	(4.2%)	106	(12.8%)	834	(100.0%)

HUD QC FY 2006

Table 15f.
Verification of Form 50058/59 Rent Components, EIV (Enterprise Income Verification)

	NO VERIFICATION		VERIFICATION				TOTAL	
			Dollar Amount Not Matched		Dollar Amount Matched			
	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
Earned Income	1,298	(97.1%)	25	(1.7%)	14	(1.0%)	1,336	(100.0%)
Pension, Etc.	2,081	(89.7%)	28	(1.2%)	211	(9.1%)	2,320	(100.0%)
Public Assistance	579	(97.6%)	3	(0.5%)	11	(1.9%)	593	(100.0%)
Other Income	880	(99.9%)			1	(0.1%)	881	(100.0%)
Asset Income	593	(100.0%)					593	(100.0%)
Child Care Expense	227	(100.0%)					227	(100.0%)
Medical Expense	801	(95.9%)	12	(1.5%)	22	(2.6%)	834	(100.0%)

HUD QC FY 2006

Table 15g.
Verification of Form 50058/59 Rent Components,
Third Party Verbal or In Writing, Documentation, or EIV by Program Type

		NO VERIFICATION		VERIFICATION				TOTAL	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING	**Earned Income**	50	(15.2%)	69	(21.1%)	208	(63.7%)	326	(100.0%)
	Pension, Etc.	63	(12.3%)	84	(16.4%)	365	(71.3%)	512	(100.0%)
	Public Assistance	40	(25.5%)	15	(9.2%)	103	(65.3%)	158	(100.0%)
	Other Income	51	(30.5%)	25	(15.1%)	91	(54.4%)	167	(100.0%)
	Asset Income	6	(6.0%)	8	(7.7%)	88	(86.3%)	102	(100.0%)
	Child Care Expense	10	(25.8%)	6	(15.6%)	22	(58.6%)	37	(100.0%)
	Medical Expense	15	(10.2%)	42	(27.9%)	94	(61.9%)	151	(100.0%)
PHA-ADMINISTERED SECTION 8	**Earned Income**	85	(11.8%)	152	(21.0%)	487	(67.2%)	724	(100.0%)
	Pension, Etc.	94	(9.8%)	99	(10.2%)	775	(80.0%)	968	(100.0%)
	Public Assistance	71	(21.9%)	57	(17.6%)	196	(60.4%)	324	(100.0%)
	Other Income	122	(25.1%)	47	(9.6%)	319	(65.3%)	488	(100.0%)
	Asset Income	18	(10.7%)	14	(8.3%)	140	(81.0%)	172	(100.0%)
	Child Care Expense	12	(10.5%)	24	(21.2%)	76	(68.3%)	111	(100.0%)
	Medical Expense	22	(9.7%)	58	(25.2%)	150	(65.1%)	230	(100.0%)
OWNER-ADMINISTERED	**Earned Income**	28	(9.7%)	47	(16.4%)	211	(73.9%)	286	(100.0%)
	Pension, Etc.	61	(7.3%)	99	(11.7%)	680	(81.0%)	840	(100.0%)
	Public Assistance	23	(20.7%)	3	(2.9%)	84	(76.4%)	110	(100.0%)
	Other Income	55	(24.6%)	27	(12.1%)	143	(63.3%)	226	(100.0%)
	Asset Income	29	(9.0%)	19	(6.0%)	271	(85.0%)	318	(100.0%)
	Child Care Expense	6	(8.2%)	9	(10.8%)	64	(81.0%)	79	(100.0%)
	Medical Expense	53	(11.6%)	87	(19.2%)	314	(69.1%)	453	(100.0%)

HUD QC FY 2006

Table 15h.
Verification of Form 50058/59 Rent Components,
Third Party in Writing by Program Type

		NO VERIFICATION		VERIFICATION				TOTAL	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING	**Earned Income**	121	(37.2%)	38	(11.8%)	166	(51.0%)	326	(100.0%)
	Pension, Etc.	231	(45.1%)	47	(9.1%)	235	(45.8%)	512	(100.0%)
	Public Assistance	78	(49.5%)	7	(4.5%)	73	(46.0%)	158	(100.0%)
	Other Income	80	(47.9%)	18	(10.6%)	69	(41.5%)	167	(100.0%)
	Asset Income	39	(38.2%)	6	(5.5%)	58	(56.2%)	102	(100.0%)
	Child Care Expense	19	(50.2%)	4	(9.7%)	15	(40.1%)	37	(100.0%)
	Medical Expense	94	(61.9%)	14	(9.1%)	44	(29.0%)	151	(100.0%)
PHA-ADMINISTERED SECTION 8	**Earned Income**	282	(39.0%)	95	(13.1%)	347	(47.9%)	724	(100.0%)
	Pension, Etc.	477	(49.3%)	51	(5.3%)	440	(45.5%)	968	(100.0%)
	Public Assistance	124	(38.2%)	37	(11.3%)	164	(50.5%)	324	(100.0%)
	Other Income	234	(48.0%)	28	(5.8%)	225	(46.2%)	488	(100.0%)
	Asset Income	79	(45.6%)	9	(5.1%)	85	(49.3%)	172	(100.0%)
	Child Care Expense	23	(20.8%)	21	(19.1%)	67	(60.0%)	111	(100.0%)
	Medical Expense	126	(54.8%)	22	(9.6%)	82	(35.6%)	230	(100.0%)
OWNER-ADMINISTERED	**Earned Income**	69	(24.2%)	39	(13.7%)	178	(62.8%)	286	(100.0%)
	Pension, Etc.	292	(34.8%)	78	(9.3%)	470	(55.9%)	840	(100.0%)
	Public Assistance	53	(47.8%)	3	(2.9%)	55	(49.4%)	110	(100.0%)
	Other Income	92	(40.7%)	21	(9.3%)	113	(49.9%)	226	(100.0%)
	Asset Income	103	(32.3%)	10	(3.3%)	205	(64.5%)	318	(100.0%)
	Child Care Expense	21	(26.5%)	7	(8.7%)	51	(64.7%)	79	(100.0%)
	Medical Expense	243	(53.6%)	32	(7.1%)	179	(39.4%)	453	(100.0%)

HUD QC FY 2006

Table 15i.
Verification of Form 50058/59 Rent Components,
Third Party in Writing or EIV (Enterprise Income Verification)

		NO VERIFICATION		VERIFICATION				TOTAL	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING	**Earned Income**	108	(33.0%)	50	(15.4%)	168	(51.6%)	326	(100.0%)
	Pension, Etc.	163	(31.8%)	59	(11.6%)	290	(56.6%)	512	(100.0%)
	Public Assistance	74	(47.1%)	7	(4.5%)	76	(48.4%)	158	(100.0%)
	Other Income	80	(47.9%)	18	(10.6%)	69	(41.5%)	167	(100.0%)
	Asset Income	39	(38.2%)	6	(5.5%)	58	(56.2%)	102	(100.0%)
	Child Care Expense	19	(50.2%)	4	(9.7%)	15	(40.1%)	37	(100.0%)
	Medical Expense	80	(52.7%)	23	(14.9%)	49	(32.4%)	151	(100.0%)
PHA-ADMINISTERED SECTION 8	**Earned Income**	249	(34.4%)	109	(15.0%)	366	(50.6%)	724	(100.0%)
	Pension, Etc.	313	(32.4%)	66	(6.8%)	589	(60.9%)	968	(100.0%)
	Public Assistance	119	(36.6%)	40	(12.2%)	166	(51.3%)	324	(100.0%)
	Other Income	234	(48.0%)	28	(5.8%)	225	(46.2%)	488	(100.0%)
	Asset Income	79	(45.6%)	9	(5.1%)	85	(49.3%)	172	(100.0%)
	Child Care Expense	23	(20.8%)	21	(19.1%)	67	(60.0%)	111	(100.0%)
	Medical Expense	106	(46.3%)	26	(11.3%)	97	(42.4%)	230	(100.0%)
OWNER-ADMINISTERED	**Earned Income**	69	(24.2%)	39	(13.7%)	178	(62.1%)	286	(100.0%)
	Pension, Etc.	267	(31.7%)	80	(9.6%)	493	(58.7%)	840	(100.0%)
	Public Assistance	48	(43.4%)	3	(2.9%)	59	(53.7%)	110	(100.0%)
	Other Income	91	(40.3%)	21	(9.3%)	114	(50.4%)	226	(100.0%)
	Asset Income	103	(32.3%)	10	(3.3%)	205	(64.5%)	318	(100.0%)
	Child Care Expense	21	(26.5%)	7	(8.7%)	51	(64.7%)	79	(100.0%)
	Medical Expense	235	(51.8%)	35	(7.7%)	184	(40.6%)	453	(100.0%)

HUD QC FY 2006

Table 15j.
Verification of Form 50058/59 Rent Components,
Third Party - Verbal by Program Type

		NO VERIFICATION		VERIFICATION				TOTAL	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING	**Earned Income**	322	(98.7%)	1	(0.3%)	3	(1.0%)	326	(100.0%)
	Pension, Etc.	511	(99.8%)			1	(0.2%)	512	(100.0%)
	Public Assistance	155	(98.2%)	1	(0.9%)	1	(0.9%)	158	(100.0%)
	Other Income	167	(100.0%)					167	(100.0%)
	Asset Income	101	(98.6%)			1	(1.4%)	102	(100.0%)
	Child Care Expense	36	(96.8%)			1	(3.2%)	37	(100.0%)
	Medical Expense	150	(99.1%)			1	(0.9%)	151	(100.0%)
PHA-ADMINISTERED SECTION 8	**Earned Income**	716	(98.9%)			8	(1.1%)	724	(100.0%)
	Pension, Etc.	965	(99.7%)			3	(0.3%)	968	(100.0%)
	Public Assistance	323	(99.4%)			2	(0.6%)	324	(100.0%)
	Other Income	481	(98.6%)	4	(0.8%)	3	(0.6%)	488	(100.0%)
	Asset Income	172	(100.0%)					172	(100.0%)
	Child Care Expense	109	(98.3%)			2	(1.7%)	111	(100.0%)
	Medical Expense	228	(99.1%)			2	(0.9%)	230	(100.0%)
OWNER-ADMINISTERED	**Earned Income**	280	(98.0%)	1	(0.3%)	5	(1.7%)	286	(100.0%)
	Pension, Etc.	840	(100.0%)					840	(100.0%)
	Public Assistance	109	(98.8%)			1	(1.2%)	110	(100.0%)
	Other Income	224	(99.0%)	1	(0.6%)	1	(0.4%)	226	(100.0%)
	Asset Income	318	(100.0%)					318	(100.0%)
	Child Care Expense	79	(100.0%)					79	(100.0%)
	Medical Expense	452	(99.7%)			1	(0.3%)	453	(100.0%)

HUD QC FY 2006

Table 15k.
Verification of Form 50058/59 Rent Components,
Documentation by Program Type

		NO VERIFICATION		VERIFICATION				TOTAL	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING	**Earned Income**	278	(85.1%)	15	(4.7%)	33	(10.2%)	326	(100.0%)
	Pension, Etc.	447	(87.3%)	17	(3.3%)	48	(9.5%)	512	(100.0%)
	Public Assistance	127	(80.2%)	6	(3.8%)	25	(16.0%)	158	(100.0%)
	Other Income	138	(82.6%)	8	(4.5%)	22	(12.9%)	167	(100.0%)
	Asset Income	77	(74.7%)	2	(2.2%)	24	(23.1%)	102	(100.0%)
	Child Care Expense	31	(82.4%)	2	(5.9%)	4	(11.6%)	37	(100.0%)
	Medical Expense	120	(79.4%)	8	(5.5%)	23	(15.1%)	151	(100.0%)
PHA-ADMINISTERED SECTION 8	**Earned Income**	585	(80.8%)	39	(5.4%)	100	(13.9%)	724	(100.0%)
	Pension, Etc.	791	(81.7%)	23	(2.4%)	154	(15.9%)	968	(100.0%)
	Public Assistance	279	(85.9%)	18	(5.5%)	28	(8.6%)	324	(100.0%)
	Other Income	392	(80.4%)	12	(2.5%)	84	(17.1%)	488	(100.0%)
	Asset Income	124	(71.9%)	3	(1.7%)	45	(26.4%)	172	(100.0%)
	Child Care Expense	102	(91.4%)	2	(2.0%)	7	(6.5%)	111	(100.0%)
	Medical Expense	181	(78.8%)	15	(6.5%)	34	(14.7%)	230	(100.0%)
OWNER-ADMINISTERED	**Earned Income**	253	(88.4%)	7	(2.4%)	26	(9.2%)	286	(100.0%)
	Pension, Etc.	683	(81.3%)	12	(1.4%)	145	(17.3%)	840	(100.0%)
	Public Assistance	87	(78.5%)			24	(21.5%)	110	(100.0%)
	Other Income	195	(86.2%)	3	(1.2%)	28	(12.5%)	226	(100.0%)
	Asset Income	275	(86.4%)	4	(1.3%)	39	(12.3%)	318	(100.0%)
	Child Care Expense	68	(85.8%)			11	(14.2%)	79	(100.0%)
	Medical Expense	392	(86.4%)	12	(2.5%)	50	(11.0%)	453	(100.0%)

HUD QC FY 2006

Table 15l.
Verification of Form 50058/59 Rent Components,
EIV (Enterprise Income Verification) by Program Type

		NO VERIFICATION		VERIFICATION				TOTAL	
				Dollar Amount Not Matched		Dollar Amount Matched			
		# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases
PUBLIC HOUSING	**Earned Income**	315	(96.7%)	11	(3.3%)			326	(100.0%)
	Pension, Etc.	449	(87.8%)	11	(2.2%)	51	(10.0%)	512	(100.0%)
	Public Assistance	154	(97.6%)			4	(2.4%)	158	(100.0%)
	Other Income	167	(100.0%)					167	(100.0%)
	Asset Income	102	(100.0%)					102	(100.0%)
	Child Care Expense	37	(100.0%)					37	(100.0%)
	Medical Expense	139	(92.2%)	9	(5.8%)	3	(2.1%)	151	(100.0%)
PHA-ADMINISTERED SECTION 8	**Earned Income**	697	(96.2%)	14	(1.9%)	14	(1.9%)	724	(100.0%)
	Pension, Etc.	817	(84.4%)	15	(1.5%)	136	(14.1%)	968	(100.0%)
	Public Assistance	319	(98.3%)	3	(0.9%)	2	(0.8%)	324	(100.0%)
	Other Income	488	(100.0%)					488	(100.0%)
	Asset Income	172	(100.0%)					172	(100.0%)
	Child Care Expense	111	(100.0%)					111	(100.0%)
	Medical Expense	215	(93.4%)	2	(0.9%)	13	(5.7%)	230	(100.0%)
OWNER-ADMINISTERED	**Earned Income**	286	(100.0%)					286	(100.0%)
	Pension, Etc.	814	(96.9%)	2	(0.3%)	23	(2.8%)	840	(100.0%)
	Public Assistance	106	(95.6%)			5	(4.4%)	110	(100.0%)
	Other Income	225	(99.5%)			1	(0.5%)	226	(100.0%)
	Asset Income	318	(100.0%)					318	(100.0%)
	Child Care Expense	79	(100.0%)					79	(100.0%)
	Medical Expense	447	(98.5%)	1	(0.3%)	5	(1.2%)	453	(100.0%)

HUD QC FY 2006

Table 16a.
QC Rent Component for Household with QC Rent Error (>$5)

		50058		50059		TOTAL	
		# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
Earned Income	**No Error**	2,432	(86.5%)	1,219	(92.4%)	3,651	(88.3%)
	w/Error	381	(13.5%)	101	(7.6%)	482	(11.7%)
Pensions, Etc.	**No Error**	2,399	(85.3%)	1,123	(85.1%)	3,522	(85.2%)
	w/Error	414	(14.7%)	197	(14.9%)	611	(14.8%)
Public Assistance	**No Error**	2,681	(95.3%)	1,279	(96.9%)	3,960	(95.8%)
	w/Error	132	(4.7%)	41	(3.1%)	173	(4.2%)
Other Income	**No Error**	2,628	(93.4%)	1,243	(94.2%)	3,872	(93.7%)
	w/Error	185	(6.6%)	77	(5.8%)	261	(6.3%)
Asset Income	**No Error**	2,680	(95.3%)	1,235	(93.5%)	3,915	(94.7%)
	w/Error	133	(4.7%)	85	(6.5%)	218	(5.3%)
Child Care Expense	**No Error**	2,719	(96.7%)	1,296	(98.2%)	4,015	(97.1%)
	w/Error	94	(3.3%)	24	(1.8%)	118	(2.9%)
Disability Expense	**No Error**	2,806	(99.8%)	1,320	(100.0%)	4,126	(99.8%)
	w/Error	7	(0.2%)			7	(0.2%)
Medical Expense	**No Error**	2,545	(90.5%)	1,127	(85.4%)	3,672	(88.9%)
	w/Error	268	(9.5%)	193	(14.6%)	461	(11.1%)
All Components	**No Error**	1,795	(63.8%)	893	(67.6%)	2,686	(65.0%)
	w/Error	1,018	(36.2%)	427	(32.4%)	1,447	(35.0%)
	TOTAL	2,813	(100.0%)	1,320	(100.0%)	4,133	(100.0%)

HUD QC FY 2006

Table 16b.
QC Error Cases with Missing Verification in Tenant File

		50058		50059		Total	
		# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
Earned Income	**Verified**	120	(31.6%)	31	(31.1%)	152	(31.5%)
	Not Verified	261	(68.4%)	69	(68.9%)	330	(68.5%)
Pension, Etc.	**Verified**	58	(14.1%)	31	(15.9%)	90	(14.7%)
	Not Verified	356	(85.9%)	166	(84.1%)	521	(85.3%)
Public Assistance	**Verified**	36	(27.4%)	2	(3.8%)	38	(21.8%)
	Not Verified	96	(72.6%)	39	(96.2%)	135	(78.2%)
Other Income	**Verified**	38	(20.3%)	13	(16.7%)	50	(19.4%)
	Not Verified	147	(79.7%)	64	(83.3%)	211	(80.7%)
Asset Income	**Verified**	36	(27.0%)	16	(19.0%)	52	(23.9%)
	Not Verified	97	(73.0%)	69	(81.0%)	166	(76.1%)
Child Care Expense	**Verified**	18	(19.0%)	4	(18.3%)	22	(18.9%)
	Not Verified	76	(81.0%)	20	(81.7%)	96	(81.1%)
Disability Expense	**Not Verified**	7	(100.0%)			7	(100.0%)
Medical Expense	**Verified**	26	(9.6%)	39	(20.4%)	65	(14.1%)
	Not Verified	242	(90.4%)	154	(79.6%)	396	(85.9%)

HUD QC FY 2006

Table 17.
50058/59 Procedural Error: Number and Percentage of Households, Average Dollars in Error

	HOUSEHOLDS WITH RECALCULATED 50058/59 ERROR			HOUSEHOLDS WITH QC RENT ERROR		
	# of Households in Error (in 1,000)	% of Households in Error	Average Gross Dollar Error	# of Households in Error (in 1,000)	% of Households in Error	Average Gross Dollar Error
Transcription Error	114	(52.8%)	35.38	954	(63.2%)	50.57
No Transcription Error	102	(47.2%)	9.78	555	(36.8%)	56.33
Consistency Error	81	(37.4%)	32.11	400	(26.5%)	58.11
No Consistency Error	135	(62.6%)	18.05	1,109	(73.5%)	50.74
Allowances Calculation Error	26	(12.0%)	85.21	121	(8.0%)	59.92
No Allowances Calculation Error	190	(88.0%)	14.89	1,388	(92.0%)	52.06
Income Calculation Error	6	(2.8%)	189.45	45	(3.0%)	31.89
No Income Calculation Error	210	(97.2%)	18.44	1,464	(97.0%)	53.33
Other Calculation Error	41	(18.9%)	71.26	204	(13.5%)	60.44
No Other Calculation Error	175	(81.1%)	12.15	1,305	(86.5%)	51.48
Overdue Recertification	17	(8.0%)	85.86	97	(6.4%)	72.31
On-time Recertification	181	(83.8%)	16.43	1,179	(78.1%)	52.11
Certification	18	(8.2%)	32.23	233	(15.5%)	47.46
Any Form 50058/59 Error	147	(68.1%)	31.33	1,107	(73.3%)	51.24
No Form 50058/59 Error	69	(31.9%)	6.17	402	(26.7%)	56.69
Total Households	216	(100.0%)	23.30	1,509	(100.0%)	52.69

HUD QC FY 2006

Table 18.
Administrative Error: Number and Percentage of Households, Average Dollars in Error
For All Households with 50058/59 Recalculated Rent

	GROSS RENT ERROR			NET RENT ERROR		
	# of Households (in 1,000)	% of Households	Average Dollar Error	# of Households (in 1,000)	% of Households	Average Dollar Error
Transcription Error	1,727	(41.8%)	28.32	1,727	(41.8%)	-6.30
No Transcription Error	2,406	(58.2%)	13.26	2,401	(58.2%)	-7.24
Consistency Error	957	(23.1%)	24.63	957	(23.1%)	-8.84
No Consistency Error	3,176	(76.9%)	18.03	3,176	(76.9%)	-6.24
Allowances Calculation Error	220	(5.3%)	33.20	220	(5.3%)	-11.81
No Allowances Calculation Error	3,913	(94.7%)	18.79	3,913	(94.7%)	-6.57
Income Calculation Error	101	(2.5%)	14.35	101	(2.5%)	3.73
No Income Calculation Error	4,032	(97.5%)	19.69	4,032	(97.5%)	-7.11
Other Calculation Error	418	(10.1%)	29.85	418	(10.1%)	-4.36
No Other Calculation Error	3,715	(89.9%)	18.40	3,715	(89.9%)	-7.12
Overdue Recertification	130	(3.2%)	54.10	130	(3.2%)	-13.84
On-time Recertification	3,356	(81.2%)	18.65	3,356	(81.2%)	-6.79
Certification	647	(15.7%)	17.33	647	(15.7%)	-5.71
Any Administration Error	2,256	(54.6%)	25.52	2,256	(54.6%)	-6.48
No Administration Error	1,877	(45.4%)	12.39	1,877	(45.4%)	-7.28
TOTAL	4,133	(100.0%)	19.56	4,133	(100.0%)	-6.84

HUD QC FY 2006

Table 19.
Occupancy Standards on Form 50058/59

		PHA-ADMINISTERED							
		PUBLIC HOUSING		SECTION 8		OWNER-ADMINISTERED		Total	
		# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
UNDER-HOUSED	0	1	(2.4%)	7	(23.5%)	1	(2.0%)	10	(6.2%)
	1	1	(0.3%)	3	(0.5%)	6	(0.8%)	9	(0.6%)
	2	2	(0.5%)	6	(0.9%)	7	(1.8%)	15	(1.1%)
	3	2	(0.9%)	10	(1.8%)	2	(1.5%)	14	(1.5%)
	4			6	(6.3%)			6	(4.2%)
	5+			4	(23.2%)			4	(16.9%)
	All Units	6	(0.6%)	36	(1.9%)	16	(1.2%)	58	(1.4%)
CORRECT	0	51	(97.6%)	23	(76.5%)	71	(98.0%)	144	(93.8%)
	1	311	(99.7%)	485	(99.5%)	712	(99.2%)	1,509	(99.4%)
	2	260	(79.6%)	464	(70.0%)	329	(85.3%)	1,053	(76.6%)
	3	184	(83.3%)	474	(85.0%)	109	(83.6%)	766	(84.4%)
	4	21	(54.8%)	46	(44.9%)	6	(53.4%)	74	(48.0%)
	5+	1	(35.0%)	6	(33.6%)			8	(30.6%)
	All Units	829	(86.8%)	1,498	(80.6%)	1,227	(92.9%)	3,554	(86.0%)
OVER-HOUSED	2	65	(19.8%)	193	(29.1%)	50	(12.9%)	307	(22.4%)
	3	35	(15.8%)	73	(13.2%)	19	(14.9%)	128	(14.1%)
	4	18	(45.2%)	50	(48.9%)	5	(46.6%)	73	(47.8%)
	5+	3	(65.0%)	8	(43.2%)	2	(100.0%)	13	(52.5%)
	All Units	120	(12.6%)	324	(17.5%)	77	(5.8%)	521	(12.6%)

HUD QC FY 2006

Table 19a.
Frequency and Percentage of All Households by Number of Bedrooms and Number of Household Members

	NUMBER OF HOUSEHOLD MEMBERS (IN 1,000)																							
	1		2		3		4		5		6		7		8		9		10		11		12	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0	144	93.8%	5	3.1%					5	3.1%														
1	1,378	90.8%	130	8.6%	8	0.5%	1	0.1%																
2	307	22.4%	647	47.0%	311	22.6%	95	6.9%	15	1.1%														
3	41	4.5%	87	9.5%	336	37.0%	278	30.6%	114	12.5%	38	4.2%	12	1.4%					2	0.2%				
4	2	1.3%	7	4.6%	27	17.4%	37	24.4%	29	19.1%	29	19.2%	12	7.6%	3	2.1%	6	4.2%						
5	1	3.5%			2	9.8%	3	13.6%	4	15.7%	2	9.8%	4	16.1%	4	14.5%							4	16.9%

HUD QC FY 2006

Table C – 20a.
Average (Gross) Dollar in Error by Program and PIC/TRACS Data
[For all Households]

		PIC/TRACS PRESENT				PIC/TRACS ABSENT				TABLE TOTAL			
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row% of Cases	Col % of Cases	Ave. Dollar Amount
PHA ADMINISTERED	**Public Housing**	692	(72.5%)	(20.3%)	17.24	263	(27.5%)	(36.5%)	10.08	955	(100.0%)	(23.1%)	15.27
	Section 8	1,492	(80.3%)	(43.7%)	23.01	366	(19.7%)	(50.9%)	24.16	1,858	(100.0%)	(45.0%)	23.24
	Total	2,184	(77.6%)	(64.0%)	21.18	629	(22.4%)	(87.3%)	18.28	2,813	(100.0%)	(68.1%)	20.53
OWNER ADMINISTERED		1,229	(93.1%)	(36.0%)	16.27	91	(6.9%)	(12.7%)	19.52	1,320	(100.0%)	(31.9%)	16.50
TABLE TOTAL		3,413	(82.6%)	(100.0%)	19.41	720	(17.4%)	(100.0%)	18.44	4,133	(100.0%)	(100.0%)	19.24

HUD QC FY 2006

Table C – 20b.
Average (Net) Dollar in Error by Program and PIC/TRACS Data
[For all Households]

		PIC/TRACS PRESENT				PIC/TRACS ABSENT				TABLE TOTAL			
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row% of Cases	Col % of Cases	Ave. Dollar Amount
PHA ADMINISTERED	**Public Housing**	692	(72.5%)	(20.3%)	-6.34	263	(27.5%)	(36.5%)	-4.25	955	(100.0%)	(23.1%)	-5.77
	Section 8	1,492	(80.3%)	(43.7%)	-10.99	366	(19.7%)	(50.9%)	2.31	1,858	(100.0%)	(45.0%)	-8.37
	Total	2,184	(77.6%)	(64.0%)	-9.52	629	(22.4%)	(87.3%)	-0.43	2,813	(100.0%)	(68.1%)	
OWNER ADMINISTERED		1,229	(93.1%)	(36.0%)	-5.81	91	(6.9%)	(12.7%)	-1.88	1,320	(100.0%)	(31.9%)	-5.54
TABLE TOTAL		3,413	(82.6%)	(100.0%)	-8.18	720	(17.4%)	(100.0%)	-0.62	4,133	(100.0%)	(100.0%)	-6.86

HUD QC FY 2006

Table C – 20c.
Average (Gross) Dollar in Error by Program and PIC/TRACS Data
[QC RENT ERROR CASES ONLY]

		PIC/TRACS PRESENT				PIC/TRACS ABSENT				TABLE TOTAL			
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row% of Cases	Col % of Cases	Ave. Dollar Amount
PHA ADMINISTERED	**Public Housing**	253	(76.1%)	(20.2%)	47.26	79	(23.9%)	(30.5%)	33.37	332	(100.0%)	(22.0%)	43.94
	Section 8	587	(80.1%)	(47.0%)	58.45	146	(19.9%)	(56.3%)	60.50	734	(100.0%)	(48.6%)	58.86
	Total	840	(78.8%)	(67.2%)	55.08	226	(21.2%)	(86.9%)	50.96	1,065	(100.0%)	(70.5%)	54.21
OWNER ADMINISTERED		411	(92.3%)	(32.8%)	48.67	34	(7.7%)	(13.1%)	52.24	445	(100.0%)	(29.5%)	48.95
TABLE TOTAL		1,251	(82.8%)	(100.0%)	52.98	260	(17.2%)	(100.0%)	51.13	1,510	(100.0%)	(100.0%)	52.66

HUD QC FY 2006

Table C – 20d.
Average (Net) Dollar in Error by Program and PIC/TRACS Data
[QC RENT ERROR CASES ONLY]

		PIC/TRACS PRESENT				PIC/TRACS ABSENT				TABLE TOTAL			
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row% of Cases	Col % of Cases	Ave. Dollar Amount
PHA ADMINISTERED	**Public Housing**	253	(76.1%)	(20.2%)	-17.37	79	(23.9%)	(30.5%)	-14.08	332	(100.0%)	(22.0%)	-16.59
	Section 8	587	(80.1%)	(47.0%)	-27.92	146	(19.9%)	(56.3%)	5.77	734	(100.0%)	(48.6%)	-21.20
	Total	840	(78.8%)	(67.2%)	-24.75	226	(21.2%)	(86.9%)	-1.21	1,065	(100.0%)	(70.5%)	-19.76
OWNER ADMINISTERED		411	(92.3%)	(32.8%)	-17.38	34	(7.7%)	(13.1%)	-5.03	445	(100.0%)	(29.5%)	-16.44
TABLE TOTAL		1,251	(82.8%)	(100.0%)	-22.33	260	(17.2%)	(100.0%)	-1.71	1,510	(100.0%)	(100.0%)	-18.78

HUD QC FY 2006

Table C – 21a.
Average (Gross) Dollar in Error by Payment Type and PIC/TRACS Data

		PIC/TRACS PRESENT				PIC/TRACS ABSENT				TABLE TOTAL			
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col% of Cases	Ave. Dollar Amount
	UNDERPAYMENT	681	(84.6%)	(19.9%)	69.17	124	(15.4%)	(17.2%)	55.26	805	(100.0%)	(19.5%)	67.02
	PROPER PAYMENT	2,162	(82.4%)	(63.4%)	0.00	460	(17.6%)	(63.9%)	0.00	2,623	(100.0%)	(63.5%)	0.00
	OVERPAYMENT	570	(80.8%)	(16.7%)	33.63	136	(19.2%)	(18.8%)	47.34	705	(100.0%)	(17.1%)	36.26
TABLE TOTAL		3,413	(82.6%)	(100.0%)	19.41	720	(17.4%)	(100.0%)	18.44	4,133	(100.0%)	(100.0%)	19.24

HUD QC FY 2006

Table C – 21b.
Average (Net) Dollar in Error by Payment Type and PIC/TRACS Data

		PIC/TRACS PRESENT				PIC/TRACS ABSENT				TABLE TOTAL			
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	Ave. Dollar Amount	# of Cases (in 1,000)	Row % of Cases	Col% of Cases	Ave. Dollar Amount
	UNDERPAYMENT	681	(84.6%)	(19.9%)	-69.17	124	(15.4%)	(17.2%)	-55.26	805	(100.0%)	(19.5%)	-67.02
	PROPER PAYMENT	2,162	(82.4%)	(63.4%)	0.00	460	(17.6%)	(63.9%)	0.00	2,623	(100.0%)	(63.5%)	0.00
	OVERPAYMENT	570	(80.8%)	(16.7%)	33.63	136	(19.2%)	(18.8%)	47.34	705	(100.0%)	(17.1%)	36.26
TABLE TOTAL		3,413	(82.6%)	(100.0%)	-8.18	720	(17.4%)	(100.0%)	-0.62	4,133	(100.0%)	(100.0%)	-6.86

HUD QC FY 2006

Table C – 22.
Percentage of Matched and Non-matched Dollar Amounts for Key Variables
Matching Variables from the 50058/59 Form and PIC/TRACS Data Files
[Cases with PIC/TRACS Present & Matched on Effective Date of Action]

		PIC			TRACS			TOTAL		
		# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases	# of Cases (in 1,000)	Col % of Cases	Row % of Cases
Gross Income	**No Match**	45	3.5%	54.5%	37	4.0%	45.5%	82	3.7%	100.0%
	Match	1,219	96.5%	57.4%	903	96.0%	42.6%	2,122	96.3%	100.0%
	TOTAL	1,263	100.0%	57.3%	940	100.0%	42.7%	2,203	100.0%	100.0%
Net Income	**No Match**	85	6.7%	70.9%	35	3.7%	29.1%	120	5.4%	100.0%
	Match	1,178	93.3%	56.6%	905	96.3%	43.4%	2,084	94.6%	100.0%
	TOTAL	1,263	100.0%	57.3%	940	100.0%	42.7	2,203	100.0%	100.0%
Total Tenant Payment	**No Match**	90	7.2%	53.3%	79	8.4%	46.7%	170	7.7%	100.0%
	Match	1,173	92.8%	57.7%	861	91.6%	42.3%	2,034	92.3%	100.0%
	TOTAL	1,263	100.0%	57.3%	940	100.0%	42.7%	2,203	100.0%	100.0%
Tenant Rent	**No Match**				199	21.2%	100.0%	199	21.2%	100.0%
	Match				741	78.8%	100.0%	741	78.8%	100.0%
	TOTAL				940	100.0%	100.0%	940	100.0%	100.0%

Source Tables Based on Tenant File Information

HUD QC FY 2006

Table 2. [Tenant File]
Percentage of Households by Payment Type and Program Type

		UNDERPAYMENT			PROPER PAYMENT			OVERPAYMENT			TOTAL		
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED	Public Housing	92	(9.6%)	(24.3%)	740	(77.5%)	(23.3%)	123	(12.9%)	(21.4%)	955	(100.0%)	(23.1%)
	Section 8	180	(9.7%)	(47.6%)	1,416	(76.2%)	(44.5%)	262	(14.1%)	(45.5%)	1,858	(100.0%)	(45.0%)
	Total	272	(9.7%)	(71.9%)	2,156	(76.6%)	(67.8%)	385	(13.7%)	(66.9%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED		106	(8.0%)	(28.1%)	1,023	(77.5%)	(32.2%)	190	(14.4%)	(33.1%)	1,320	(100.0%)	(31.9%)
TOTAL		378	(9.2%)	(100.0%)	3,179	(76.9%)	(100.0%)	575	(13.9%)	(100.0%)	4,133	(100.0%)	(100.0%)

HUD QC FY 2006

Table 2(S). [Tenant File]
Percent of Households by Payment Type and Program Type
(Proper Payment based on exact match of Actual and DC Rent)

		UNDERPAYMENT			PROPER PAYMENT			OVERPAYMENT			TOTAL		
		# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases	# of Cases (in 1,000)	Row % of Cases	Col % of Cases
PHA ADMINISTERED	Public Housing	123	(12.8%)	(23.5%)	655	(68.6%)	(23.2%)	177	(18.6%)	(22.6%)	955	(100.0%)	(23.1%)
	Section 8	226	(12.2%)	(43.4%)	1,265	(68.1%)	(44.7%)	367	(19.7%)	(46.9%)	1,858	(100.0%)	(45.0%)
	Total	349	(12.4%)	(66.9%)	1,920	(68.3%)	(67.9%)	544	(19.3%)	(69.5%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED		173	(13.1%)	(33.1%)	908	(68.8%)	(32.1%)	239	(18.1%)	(30.5%)	1,320	(100.0%)	(31.9%)
TOTAL		522	(12.6%)	(100.0%)	2,828	(68.4%)	(100.0%)	783	(18.9%)	(100.0%)	4,133	(100.0%)	(100.0%)

HUD QC FY 2006

Table 3. [Tenant File]
Dollar Rent Error by Program Type (Tenant File)

Appendix C––Source Tables Based on Tenant File Information

		ACTUAL RENT (MONTHLY)				DC RENT (MONTHLY)				GROSS RENT ERROR (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
PHA ADMINISTERED	**Public Housing**	955	(23.1%)	189,752	198.69	955	(23.1%)	186.548	195.34	955	(23.1%)	12,242	12.82
	Section 8	1,858	(45.0%)	370,891	199.62	1,858	(45.0%)	357,906	192.63	1,858	(45.0%)	28,110	15.13
	Total	2,813	(68.1%)	560,643	199.30	2,813	(68.1%)	544,454	193.55	2,813	(68.1%)	40,353	14.35
OWNER ADMINISTERED		1,320	(31.9%)	242,765	183.91	1,320	(31.9%)	234,609	177.73	1,320	(31.9%)	16,865	12.78
TOTAL		4,133	(100.0%)	803,407	194.39	4,133	(100.0%)	779,063	188.50	4,133	(100.0%)	57,218	13.84

HUD QC FY 2006

Table 4. [Tenant File]
Dollar Error Amount by Payment Type and Program Type

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				DC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount
PHA ADMINISTERED	**Public Housing**	92	(24.3%)	4,545	49.44	123	(21.4%)	7,698	62.56	955	(23.1%)	186,548	195.34
	Section 8	180	(47.6%)	7,606	42.20	262	(45.5%)	20,504	78.35	1,858	(45.0%)	357,906	192.63
	Total	272	(71.9%)	12,151	44.64	385	(66.9%)	28,202	73.30	2,813	(68.1%)	544,454	193.55
OWNER ADMINISTERED		106	(28.1%)	4,353	41.01	190	(33.1%)	12,512	65.69	1,320	(31.9%)	234,609	177.73
TOTAL		378	(100.0%)	16,504	43.62	575	(100.0%)	40,714	70.78	4,133	(100.0%)	779,063	188.50

HUD QC FY 2006

Table 4(S). [Tenant File]
Dollar Error Amount by Payment Type and Program Type
(Proper Payment based on exact match of Actual and DC Rent)

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				DC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount
PHA ADMINISTERED	**Public Housing**	123	(23.5%)	4,610	37.59	177	(22.6%)	7,814	44.11	955	(23.1%)	186,548	195.34
	Section 8	226	(43.4%)	7,714	34.06	367	(46.9%)	20,699	56.44	1,858	(45.0%)	357,906	192.63
	Total	349	(66.9%)	12,324	35.30	544	(69.5%)	28,513	52.42	2,813	(68.1%)	544,454	193.55
OWNER ADMINISTERED		173	(33.1%)	4,462	25.81	239	(30.5%)	12,617	52.85	1,320	(31.9%)	234,609	177.73
TOTAL		522	(100.0%)	16,786	32.16	783	(100.0%)	41,130	52.55	4,133	(100.0%)	779,063	188.50

HUD QC FY 2005

Table 5. [Tenant File]
Gross and Net Rent Error by Program Type

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				DC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount
PHA ADMINISTERED	**Public Housing**	955	(23.1%)	12,242	12.82	955	(23.1%)	3,153	3.30	955	(23.1%)	186,548	195.34
	Section 8	1,858	(45.0%)	28,110	15.13	1,858	(45.0%)	12,896	6.94	1,858	(45.0%)	357,906	192.63
	Total	2,813	(68.1%)	40,353	14.35	2,813	(68.1%)	16,051	5.71	2,813	(68.1%)	544,454	193.55
OWNER ADMINISTERED		1,320	(31.9%)	16,865	12.78	1,320	(31.9%)	8,159	6.18	1,320	(31.9%)	234,609	177.73
TOTAL		4,133	(100.0%)	57,218	13.84	4,133	(100.0%)	24,210	5.86	4,133	(100.0%)	779,063	188.50

HUD QC FY 2005

Table 5(S). [Tenant File]
Gross and Net Rent Error by Program Type
(Proper Payment based on exact match of Actual and DC Rent)

		UNDERPAYMENT (MONTHLY)				OVERPAYMENT (MONTHLY)				DC RENT (MONTHLY)			
		# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount (in 1,000)	Dollar Amount
PHA ADMINISTERED	**Public Housing**	955	(23.1%)	12,424	12.82	955	(23.1%)	3,153	3.30	955	(23.1%)	186,548	195.34
	Section 8	1,858	(45.0%)	28,110	15.13	1,858	(45.0%)	12,896	6.94	1,858	(45.0%)	357,906	192.63
	Total	2,813	(68.1%)	40,353	14.35	2,813	(68.1%)	16,051	5.71	2,813	(68.1%)	544,454	193.55
OWNER ADMINISTERED		1,320	(31.9%)	16,865	12.78	1,320	(31.9%)	8,159	6.18	1,320	(31.9%)	234,609	177.73
TOTAL		4,133	(100.0%)	57,218	13.84	4,133	(100.0%)	24,210	5.86	4,133	(100.0%)	779,063	188.50

Appendix D—Consistency and Calculation Errors

Appendix D––Consistency/Calculations

50058—Consistency Errors

50058 ITEM	ERROR
General Information:	
1c. Program	Must equal P, V, VO, or MR
2a. Type of Action	Must equal 1 through 15
2b. Effective Date of Action	Cannot be earlier than Date of Admission to the Program (2h)
Household Composition:	
3g. Sex	Must equal M or F
3h. Relationship	Must equal H, S, K, F, Y, E, L, or A
3i. Citizenship	Must equal EC, EN, IN, PV, or XX
3k. Race	Must equal 1 through 4
3m. Ethnicity	Must equal 1 or 2
3u. Family Subsidy Status	Must equal C, E, F, P, or blank
3v. Effective Date	Should not be blank if 3u equals C
Net Family Assets and Income	
6a. Family Member No.	Must equal a number used in Section 3. Household.
7a. Family Member No.	Must equal a number used in Section 3. Household.
7b. Income Code	Must equal B, F, HA, M, W, G, IW, T, P, S, SS, C, E, I, N, or U
8a. Total Annual Income	Must equal Total Annual Income recorded in 7i
8i. Earnings Made Possible by Disability Assistance Expense	Must be <= the sum of Dollars per Year (7d) for Income Codes (7b) HA, F, W, B, or M
Allowances and Adjusted Income	
8h. Maximum Disability Allowance	Should only be completed if any member is disabled
8j. Allowable Disability Assistance Expense	• Should be <= Maximum Disability Allowance (8h) • Should be 0 if Medical/Disability Threshold (8f) is > Maximum Disability Allowance (8h) • Should be 0 or blank if Maximum Disability Allowance (8h) is 0 or blank
8k. Total Medical Expenses	Should only be completed if the head, spouse, or co-head is 62 or over, or disabled; otherwise it should be blank

50058 ITEM	ERROR
8n. Medical/Disability Assistance Allowance	• Should equal Total Annual Disability Assistance and Medical Expense (8m) minus Medical/disability Threshold (8f) if Allowable Disability Expense (8j) is blank or Total Annual Unreimbursed Disability Assistance Expense (8g) is less than Medical /disability Threshold (8f) • Should equal Total Annual Disability Assistance and Medical Expense (8m) if 8 Total Annual Unreimbursed Disability Assistance Expense (8g) and Allowable Disability Expense (8j) is >= Medical/disability Threshold (8f)
8p. Elderly/Disabled Allowance	Should be $400 if head, spouse or co-head is 62 or over, or disabled; otherwise it should be 0 or blank
8s. Dependent Allowance	Must be completed if the household contains a member under age 18, disabled, or a full-time student (excluding the head, spouse, foster child or adult, or live-in attendant)
8t. Yearly Child Care Cost That Is Not Reimbursed (Child Care Allowance)	Should only be completed if any member is less than 13 years old
Family Rent and Subsidy Information	
10a. 11q, 12r, 13j, 14s TTP	Must equal TTP (9j) or blank
10a. through 14ag. Rent Calculations	• If Program (1c) = P: - TTP (10a), must be completed; - Flat Rent (10b), or Tenant Rent (10f), or Mixed Family Tenant Rent (10s) must be completed; - Section 11 through 14 must be blank. • If Program (1c) = VO or C: - Section 11, or 12 must be completed - Tenant Rent (11s or 12k), or Mixed Family Tenant Rent (11ak, or 12 ai) must be completed; - Section 10, 13, and 14 must be blank • If Program (1c) = MR: - Tenant Rent (13k), or Mixed Family Tenant Rent (13x) must be completed; - Sections 10, 11, 12, and 14 must be blank.

50059 - Consistency Errors

50059 ITEM	ERROR
General Information:	
2. Subsidy Type	Must equal 1 through 9
13. Effective Date	Cannot be earlier than Date Tenant Moved into Project (16.)
18. Certification Type	Must equal 1 through 5
19. Action Processed	Must equal 1 through 4, or blank
44. Race of Head of Household	Must equal 1 through 4
45. Ethnicity of Head of Household	Must equal 1 or 2
Household Composition	
43. Sex	Must equal M or F
47. Special Status Code	Must equal E, S, H, F, I, J, or blank; should be E if Age > 61
49. Eligibility Code (Citizenship)	Must equal EC, EN, IC, IN, IP, PV, or XX
Net Family Assets and Income	
69. Member No. – Income Info 78. Member No. – Asset Info	Should not be greater than the total number of members listed in item 38 (Family Member Number)
Allowances and Adjusted Income	
100. Dependent Allowance	Must be completed if Number of Dependents (58) is greater than 0
101. Child Care Expense (work) 102 Child Care Expense (school)	Should only be completed if any member is less than 13 years old
105. Disability Allowance	• Should be <= Disability Expenses (104) • Should be 0 if 3% of Annual Income (103) is > Total Disability Assistance Expenses (104) • Should be 0 or blank if Total Disability Assistance Expenses (104) is 0 or blank
106. Total Medical Expenses	Should only be completed if the Special Status Code (47) for the head or spouse or co-head = H or E, or if the head, spouse, or co-head is age 62 years old or older
108. Elderly Household Allowance	Should be $400 if the Special Status Code (47) for the head or spouse or co-head = H or E; otherwise it should be 0 or blank
Family Rent and Subsidy Information:	
112. Tenant Rent	Should equal the maximum of TTP (111) minus Utility Allowance (33) or 0; or be blank if Utility Reimbursement (113) is greater than 0
113. Utility Reimbursement	Should be blank if Item 35 < Item 111

50058 - Calculation Errors

50058 ITEM	ERROR CALCULATION
Household Composition:	
3f. Age	Must equal the age calculated based on Date of Birth (3e) and Effective Date of Action (2b)
8q. Number of Dependents	Must equal the number of household members under 18, with a disability, or a full-time student (other than head, spouse co-head, foster child/adult, or live-in aide)
Net Family Assets and Income	
6f. Total Asset Value	Must equal the sum of all values in Cash Value of Asset (6d)
6i. Imputed Asset Income	Must equal Total Cash Value of Asset (6f) * Passbook Rate (6h) if Total Value of Assets (6f) is > $5,000. If Total Value of Assets (6f) is <= $5,000 Imputed Asset Income (6i) = 0
6j. Income from Asset	Must equal the larger of Total Anticipated Income (6g) or Imputed Asset Income (6i)
7g. Total Non Asset Income	Must equal the sum of all values in Income After Exclusions (7f)
7i. Total Annual Income	Must equal (Final Asset Income (6j) + Total Income Other Than Assets (7g)
Allowances and Adjusted Income	
8e. Total Permissible Deductions	Must equal the sum of all values in Amount of Permissible deduction (8d)
8f. 3% of Annual Income	Must equal 3% * Total Annual Income (8a)
8h. Disability Allowance	Must equal Total Annual Unreimbursed Disability Assistance Expense (8g) minus Medical/Disability Threshold (8f) if there is a disabled household member, and if there is earned income greater than or equal to the disability expense
8n. Medical Allowance	Must equal: Total Annual Disability Assistance and Medical Expense (8m) minus Medical/disability Threshold (8f) if Allowable Disability Assistance Expense (8j) is blank or Total Annual Unreimbursed Disability Assistance Expense (8g) is less than Medical/disability Threshold (8f); or equal Total Annual Disability Assistance and Medical Expense (8m) if Total Annual Unreimbursed Disability Assistance Expense (8g) and Allowable Disability Assistance Expense (8j) is >= Medical/Disability Threshold (8f); if the head, spouse, or co-head is elderly or disabled
8p. Elderly/Disabled	Must equal $400 if head, spouse, or co-head is elderly or disabled
8s. Dependent Allowance	Must equal Number of Dependents (8q) * $480
8t. Child Care Costs	Must be 0 or blank, if no household member under age 13

50058 ITEM	ERROR CALCULATION
8x. Total Allowance	Must equal Total Permissible Deductions (8e) + Medical /Disability Assistance Allowance (8n) + Elderly/Disability Allowance (8p) + Dependent Allowance (8s) + Total Annual Unreimbursed Childcare Costs (8t) + Total Annual Travel Cost to Work/School (8u)
8y. Adjusted Annual Income	Must equal Total Annual Income (8a) minus Total Allowances (8x)
Family Rent and Subsidy Information	
9j. Total Tenant Payment	Must equal the highest of TTP if Based on Annual Income (9c), TTP if Based on Adjusted Annual Income (9f), Welfare Rent (9g), Minimum Rent (9h), or Enhanced Voucher Minimum Rent (9i).
12p. Gross Rent	Must equal Rent to Owner (12k) + Utility Allowance (12m)
Tenant Rent (item number varies by program)	Tenant Rent must equal the recalculated tenant rent based on the Rent Calculation rules provided in Appendix A

Note: With the exception of tenant rent, negative numbers are always converted to 0

50059 - Calculation Errors

50059 ITEM	ERROR CALCULATION
Household Composition:	
18. Age	Must equal age calculated based on Date of Birth (17) and Effective Date of Action (1)
56. Number of Family Members	Must equal the number of family members listed
57. Number of Non-family Members	Must equal the number of family members listed with a relationship code of "L" or "F"
58. Number of Dependents	Must equal the number of household members under 18, with a disability, or a full-time student (other than head, spouse co-head, foster child/adult, or live-in aide)
Net Family Assets and Income	
84. Total Asset Value	Must equal the sum of the asset values in Cash Value of Assets (81)
85. Actual Income From Asset	Must equal the sum of the income values in Actual Yearly Income From Assets (82)
87. Imputed Asset Income	Must equal Total Asset Value (84) * 2%, if Total Value of Assets is > $5,000
73. Earned Income Sum	Must equal the sum of income values (in item 71) for items with codes B, F, M, or W in Income Type Code (70)
74. Pension Income Sum	Must equal the sum of the income values (in item 71) for items with codes PE, SI, or SS in Income Type Code (70)
75. Public Assistance Income Sum	Must equal the sum of the income values (in item 71) for items with codes TA or G in Income Type Code (70)
76. Other Income Sum	Must equal the sum of the income values (in item 71) for items with codes CS, I, N, or U in Income Type Code (70)
77. Total Non Asset Income	Must equal Earned Income Sum (73) + Pension Income Sum (74) + Public Assistance Income Sum (75) + Other Income Sum (76)
88. Asset Income	Must equal the greater of Imputed Asset Income (87) or Actual Income from Asset (85)
89. Total Annual Income	Must equal Total Non Asset Income (77) + Income from Asset (88)
Allowances and Adjusted Income	
100. Dependent Allowance	Must equal Number of Dependents (58) * $480
101. Child Care Expense (work)	Must be 0 or blank, if no household member under age 13
102. Child Care Expense (school)	
103. 3% of Annual Income	Must equal Total Annual Income (89) * .03
105. Disability Allowance	Must equal Total Disability Expenses (104) minus 3% of Annual Income (103) if there is a disabled household member, and if there is earned income greater than or equal to the disability expense

50059 ITEM	ERROR CALCULATION
107. Medical Allowance	Must equal Total Medical Expenses (106) minus 3% of Annual Income (103) if Total Handicapped Assistance Expense (107a) = 0; **or** if (Disability Allowance (105) = 0, then Medical Allowance (106) = Total Medical Expenses (106) + Total Handicapped Assistance Expenses (104) –3% of Annual Income (89), if the head, spouse, or co-head is elderly or disabled
108 Elderly Household Allowance	Must equal $400 if head, spouse, or co-head is elderly or disabled
109.Total Allowance	Must equal Allowance for Dependents (100) + Child Care Allowance (101+102) + Allowance for Disability Expenses (105) + Allowance for Medical Expenses (107) + Elderly Household Allowance (108)
110. Adjusted Annual Income	Must equal Total Annual Income (89) minus Total Allowances (109)
Family Rent and Subsidy Information	
34. Gross Income	Must equal Contract Rent (32) + Utility Allowance (33)
111. Total Tenant Payment	Must equal the higher of 30% of Adjusted Income (110), 10% of Total Annual Income (89), Welfare Rent (115), or $50 (Minimum Rent).
112. Tenant Rent	Tenant Rent must equal the recalculated tenant rent based on the Rent Calculation rules provided in Appendix A

Note: With the exception of tenant rent, negative numbers are always converted to 0

Appendix E—Project Staff Questionnaire Descriptive Analysis

Appendix E—Project Staff Questionnaire Descriptive Analysis

The Project Staff Questionnaire is a self-administered survey given to project managers and executive directors of PHA/projects included in the FY2006 study. The objective of the questionnaire was to obtain information regarding 1) project characteristics and practices that promote accurate (re)certifications, and 2) identify difficulties experienced by PHAs/projects in order to identify areas of potential improvement. Topics covered the number and types of PHA/project staff, training received for new (re)certification staff and those with experience, procedures for communicating information from HUD, quality control measures for verifying work done by (re)certification staff, methods and difficulties in obtaining household information, utilization of computer software to automate the (re)certification process, and procedures and difficulties in verifying tenant information.

A. Methodology

The Project Staff Questionnaire (PSQ) was mailed in April 2006 to the executive director or manager of each PHA/project, and respondents mailed their completed questionnaires back to Macro headquarters. Data were entered into an electronic data base via an automated tool that programmed in skip patterns, missing items, and range of valid responses. PSQs with questionable responses or skip patterns were individually investigated and all of the data issues were resolved. Of the 534 PSQs that were originally mailed, 516 were completed and returned, for a response rate of 97 percent.

Several sections of this year's questionnaire were expanded. New questions relating to the frequency of errors and the underlying causes of errors found when reviewing work done by (re)certification staff were added, as well as the underlying problems when performing verification procedures. In addition, this year's questionnaire added new questions pertaining to different methods for obtaining household information for initial certifications and annual recertification's.

B. Results

Number and Type of Staff. (Re) certification staffs are those who interview the tenants, gather information from them, calculate rents, track verifications, and supervise other staff in performing move-in certifications and annual recertification's. In 2006, PHA/projects had on average 169 units per staff member responsible fore certifying and recertifying households. Owner-administered projects had the lowest unit to staff ratio (104 units per staff member), while PHA-Administered Section 8 projects had the highest unit to staff ratio (238 units per staff member). Public Housing projects were in the middle with a ratio of 191 units per staff member. Exhibit E-1a shows the average and median number of units per type of staff member, by program type. Exhibit E-1a also shows the ratio of households to all staff members at the PHA/project (e.g. administrative staff, maintenance staff).

Exhibit E-1a.
Number of Units per Staff Member, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Units per (re)certification staff				
Average ratio	191.2	238.0	104.2	169.3
Median ratio	133.8	213.0	81.0	114.7
Units per staff member				
Average ratio	45.6	102.2	38.0	56.4
Median ratio	31.7	95.9	25.0	33.4
Total Number of PHA/projects	194	125	197	516

This year's study also included questions regarding education and other minimum requirements for new employees working with (re)certifications. Overall, 73 percent required some education requirements, such as a high school degree/GED, an associate's degree or some college, or a bachelor's degree. Sixty-seven percent of PHA/projects also noted requirements for new employees such as related experience, special housing related training or certification, or other skills such as customer service or computer skills. Public Housing projects and PHA-Administered Section 8 projects were more likely to have minimum education requirements as well as other minimum requirements than owner-administered projects. Exhibit E-1b and E-1c describe the most frequently named minimum requirements reported by the PHA/projects for education and other requirements, by program type.

Exhibit E-1b.
Minimum Education Requirements for New Employees Working with (Re)certifications, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
High School/GED	55.1%	55.8%	61.2%	57.3%
Associates/2 years college/some college	11.5%	11.5%	3.1%	8.7%
Bachelor's	10.3%	19.2%	3.9%	10.5%

Note 1: Percentages were calculated for PHA/projects that reported having minimum education requirements for new (re)certification staff.

Exhibit E-1c.
Other Minimum Requirements for New Employees Working with (Re)certifications, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Related Experience	33.6%	43.6%	25.6%	33.3%
Special Housing Related Training or Certification	19.0%	24.5%	40.3%	28.1%
Both Experience and Training	11.7%	5.3%	8.5%	8.9%
Other Skills	25.5%	23.4%	20.9%	23.3%

Note 1: Percentages were calculated for PHA/projects that reported having other minimum requirements for new (re)certification staff.

Training of New (Re) Certification Staff. PHA/projects train both new and experienced (re)certification staff. The Project Staff Questionnaire collected information about the number of new staff assigned to conduct (re)certifications, as well as the number of hours of training received and the types of training activities used. New staff was defined as staff who were newly assigned to conduct (re)certifications in the past 12 months. In this year's study, 39 percent of PHA/projects assigned new staff to conduct (re)certifications in the past 12 months. Among the three program types, the PHA-Administered Section 8 programs reported the largest proportion of new (re)certification staff members (61%), the highest number of new staff assigned to conduct (re)certifications (4 staff, on average), and the highest training hours, on average, for new (re)certification staff (187 hours). By comparison, owner-administered projects had only 32 percent new (re)certification staff, assigned the fewest number of new staff (1), and had the fewest hours of training (65 hours, on average). Public Housing projects had only a slightly higher percentage of new staff, more new staff assigned, and more hours of training than owner-administered projects as shown in Exhibit E-2a.

Exhibit 2a.
New Recertification Staff Training, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Average number of new staff assigned to conduct (re)certifications	1.6	4.2	1.3	2.5
Average number of training hours received by each new (re)certification staff	72.5	187.0	64.9	113.0
Percent of PHA/projects with new (Re)Certification staff	36.1%	60.8%	31.5%	39.0%

Note 1: Averages were calculated for PHA/projects that assigned new staff to conduct (re)certifications in the past 12 months.

Of the various types of training used for new (re)certification staff, the three most frequently used were: working with experienced staff one-on-one while conducting (re)certifications (93% of PHA/projects), self training through manuals, videos, or informal questions (88% of PHA/projects), and training sessions with the supervisor (89% of PHA/projects).

Exhibit E-2b.
Three Most Frequently Used Trainings Types
For New (Re)Certification Staff, by Program Type

Training Methods Usually or Always Used by PHA/projects:	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
New staff worked one-on-one with experienced staff during the conduct of (re)certifications	92.9%	97.3%	88.7%	93.3%
Read HUD/PHA/owner manual, watched videos, or asked informal questions	78.6%	96.0%	88.7%	88.0%
Supervisor/senior staff held training sessions with new staff explaining procedures	87.2%	96.0%	83.8%	89.4%

Note 1: Percentages were calculated for PHA/projects that assigned new staff to conduct (re)certifications in the past 12 months.

Training for Experienced (Re)Certification Staff. For experienced (re)certification staff, about 71 percent of PHA/projects provided training of some form in the past 12 months. On average, PHA/projects trained 5 experienced staff members for an average of 32 hours during the year. PHA-Administered Section 8 projects trained the largest percentage of (re)certification staff (87%), as well as trained the largest number of staff (12 on average), and provided the most hours of training (44 hours, on average). While owner-administered projects trained the least number of staff (2 on average), they trained the second largest percentage of it's (re)certification staff. This is probably due to the small number of staff and units in owner-administered projects, where each (re)certification staff represents a larger proportion of the total number of (re)certification staff. Figures for average number of staff, average number of hours, and percentage of PHA/projects that trained (re)certification staff, by program type are shown in Exhibit E-3a.

Exhibit E-3a.
Experienced Staff Training, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Average number of experienced staff receiving training	3.4	11.8	1.6	5.1
Average number of training hours received by each experienced (re)certification staff	28.3	43.6	27.4	32.3
Percent of PHA/projects that trained experienced (re)certification staff	67.0%	85.6%	73.1%	71.3%

Note 1: Averages were calculated for PHA/projects that provided training to experienced staff.

The same three methods that were most commonly used to train new (re)certification staff were also used most commonly to train experienced (re)certification staff, but to less of a degree than with new (re)certification staff. On average, 79 percent of PHA/projects used self-training through manuals, videos, and informal questions to train (re)certification staff, 73 percent used training sessions conducted by a supervisor/senior staff, and 57.5 percent used experienced staff to work one-on-one with other experienced staff. In their place, the percentage of PHA/projects reporting having experienced staff attend training conducted by outside organizations such as HUD and NAHRO increased to 48 percent, on average. For more detailed figures by individual program type, please refer to Exhibit E-3b.

Exhibit E-3b.
Methods for Training Experienced (Re)Certification Staff, by Program Type

PHA/Projects Usually or Always:	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Read HUD/PHA/owner manual, watched videos, or asked informal questions	70.7%	87.9%	79.9%	79.0%
Supervisor/senior staff held training sessions with new staff explaining procedures	73.1%	83.2%	65.3%	73.0%
Experienced staff worked one-on-one with other experienced staff to conduct (re)certifications	53.8%	58.0%	60.4%	57.5%
Experienced staff attended training conducted by outside organization	36.2%	47.7%	59.7%	48.3%

Note 1: Percentages were calculated for PHA/projects that provided training to experienced staff.

The top two topics most frequently covered in training for experienced staff were almost always covered in training. Training related to general HUD policies and rules for conducting (re)certifications was covered over 97 percent of the time, and training related to HUD or PHA/project changes in polices or procedures relating to (re)certifications were covered 96 percent of the time. Training topics did not differ consistently across PHA/projects in different programs, as shown in Exhibit E-3c.

Exhibit E-3c.
Experienced Staff Training Topics
In the Past 12 Months, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Changes in HUD or PHA/project policies or procedures related to (re)certifications	95.4%	93.5%	97.9%	95.8%
HUD policies and rules for conducting (re)certifications	94.6%	97.2%	99.3%	97.1%
Tools available in the PHA/project (e.g., software, forms) to help in conducting (re)certifications	69.2%	86.0%	81.3%	78.5%

Note 1: Percentages were calculated for PHA/projects that provided training to experienced staff.

Transfer of Information about Changes in HUD Policies. PHA/projects used a variety of methods to inform staff about changes in HUD eligibility and rent calculation policies. Last year, the most common method of communicating changes in HUD policies was through oral communication from supervisors to staff in the form of informal staff meetings, discussions, and one-on-one communications. In this year's study, oral communication was separated into two methods: one-on-one discussions and staff meetings, in order to distinguish between the two. One-on-one discussions between supervisors and staff at 90 percent turned out to be the most commonly used method. The second most used method was through distributing to the staff copies of HUD announcements at 83 percent, and staff meetings was the third most commonly used method at 82 percent.

Exhibit E-4a.
Methods to Communicate Changes in HUD/PHA/Owner
Policies to Staff in the Past 12 Months, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
One-on-one discussions between supervisors/managers and staff	89.4%	90.2%	90.7%	90.1%
Copies of HUD announcement distributed to staff	79.4%	86.2%	84.8%	83.1%
Staff Meetings	88.2%	87.8%	70.9%	82.2%
Detailed staff memo describing the changes and providing instructions for implementation	60.0%	67.5%	65.6%	64.0%

When PHA/projects had questions concerning HUD policies, they used a variety of methods to seek answers. Eighty-three percent of PHA/projects referred to the HUD/PHA/owner-administered manual, seventy-two percent asked their HUD field office or other HUD staff, and fifty-five percent asked questions at a HUD training session. The percentage of PHA/projects turning to the Internet or using web-based information and training increased slightly from 47

percent to 52 percent, showing that Internet usage is becoming more prevalent among PHA/projects. More detailed numbers by program type are shown in Exhibit E-4b.

Exhibit E-4b.
Methods for Getting Answers to Questions about HUD Policies in the Past 12 Months, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Referred to HUD/PHA/owner memo or manual	78.9%	90.4%	89.8%	83.0%
Asked HUD field office or other HUD staff	60.8%	89.6%	78.7%	72.1%
Asked questions at a HUD training session	50.5%	66.4%	56.9%	54.9%
Used Internet/web-based information/training	52.1%	68.0%	45.7%	51.7%

Quality Control via Work Monitoring. Around 73 percent of PHA/projects usually or always have the team leader or supervisor monitor (re)certification work. In order to monitor the quality of work performed by (re)certification staff, PHA/projects used various methods. The most used technique to monitor (re)certifications was reviewing files after completion (72%), followed by using a pre-designed form to check key steps at 70 percent. Other commonly used techniques were computer programs (64%), making individualized notes for each case reviewed (58%), and discussing the (re)certification with staff after completion (44%) as shown in Exhibit E-5a.

Exhibit E-5a.
Techniques Used to Monitor (Re)Certifications, In the Past 12 Months, by Program Type

PHA/projects usually or always:	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Review files after completion	74.7%	80.8%	71.1%	72.3%
Use pre-designed form to check key steps	69.1%	73.6%	66.5%	66.9%
Use computer program	60.9%	64.8%	72.6%	64.1%
Make individualized notes for each case reviewed	62.4%	67.2%	51.8%	57.5%
Discuss (re)certification with staff after completion	45.3%	48.0%	43.7%	43.8%

In determining which cases to select for review, PHA/projects most frequently randomly spot checked a percentage of all cases (63%). Overall, 34 percent of PHA/projects reported reviewing all cases. Other methods used to select cases for review were: checking (re)certifications conducted by new staff (40%), and checking certain cases completed within a given period (35%).

In the past year, PHA/projects found various errors during the course of monitoring (re)certifications. Sixty-seven percent of PHA/projects reported often or occasionally finding mistakes in calculating rent, while 61 percent of PHA/projects occasionally found missing or incomplete verifications of income and 54 percent occasionally found missing or incomplete verifications of expenses.

Exhibit E-5b.
Types of Errors Found in the Past 12 Months, by Program Type

Types of Errors Found Often or Occasionally:	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Mistakes in Calculating Rent	70.1%	82.4%	59.4%	66.6%
Missing or incomplete verifications of income	66.0%	73.6%	54.3%	61.3%
Missing or incomplete verification of expenses	56.2%	63.2%	51.3%	54.1%

PHA/projects reported several issues which caused serious errors or sometimes caused errors in eligibility determinations and rent calculations. The most commonly stated reason was tenants providing inaccurate or incomplete information (82%). Other frequently cited reasons were: complex HUD regulations for rent calculations (43%), and frequent changes in HUD regulations (36%). PHA-administered Section 8 projects were most likely to cite tenants providing incomplete/inaccurate information as causing some errors at 93 percent. Exhibit E-5c details the most frequently reported causes of some errors.

Exhibit E-5c.
Underlying Causes of Errors in Eligibility Determinations and Rent Calculations in the Past 12 Months, by Program Type

Issues Causing Serious or Some Problems:	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Tenants providing inaccurate/incomplete information	87.6%	92.8%	77.7%	82.2%
Complex HUD regulations for rent calculations	50.0%	56.8%	31.4%	43.1%
Frequent changes in HUD regulations	39.2%	49.6%	27.9%	36.1%

Conducting Tenant Interviews. When conducting both initial certifications and annual recertifications, the most common method of obtaining household information was by conducting an in-person interview (90% and 87%, respectively). The second most common method was having the tenant complete a form and return it via mail or in-person. A typical initial certification interview required about 41 minutes to complete, on average, while a typical recertification interview required only 31 minutes. PHA-administered Section 8 projects took the longest to conduct both initial certifications (45 minutes) and annual recertifications (33 minutes), while Public Housing projects took the least amount of time to conduct both initial certifications (39 minutes) and annual recertifications (30 minutes).

Exhibit E-6a.
Tenants' Difficulties in Answering Questions During the (Re)Certification Interview in the Past 12 Months, by Program Type

	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Average number of minutes spent on a typical initial certification interview	38.5	44.9	41.4	41.2
Average number of minutes spent on a typical annual recertification interview	29.8	32.8	30.6	30.8

When asked to rate how difficult it was for tenants to respond to various questions, sporadic or intermittent income was most reported as being very or somewhat difficult (69% of PHA/projects), followed by income from self-employment and questions regarding assets (56% of PHA/projects), and income received from absent family members (53% of PHA/projects).

Exhibit E-6b.
Tenants' Difficulties in Answering Questions During the (Re)Certification Interview in the Past 12 Months, by Program Type

Interview Questions that Were Somewhat or Very Difficult for Tenants to Answer:	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Sporadic or intermittent income	73.25%	82.4%	61.4%	68.5%
Income from self-employment	63.9%	70.4%	43.2%	55.6%
Assets	60.8%	60.0%	53.8%	56.0%
Income received from absent family members	65.0%	65.5%	38.0%	53.0%

Over 58 percent of PHA/projects have a proportion of tenants less than 20 percent that speak a language other than English as their primary language. In the cases where a proportion of tenants did speak a language other than English, PHA/projects used a combination of methods to communicate with their tenants. On average, 70 percent of tenants brought their own translators, 59 percent of PHA/projects had bilingual staff available, and 13 percent of PHA/projects brought in translators to communicate with tenants.

Computers and Software Use. In the past 12 months, almost all PHA/projects utilized computers and computer software when performing various (re)certification and other administrative tasks. On average, using computer software to calculate rent, income, or allowances, printing the 50058/50059 form, and printing letters to tenants were reported as the three most common uses, each at about 93 percent of PHA/projects, on average. This year's study showed a large increase in the number of PHA/projects using computers and software to record miscellaneous information about tenants such as age, ethnicity, family size, or other demographics at 92 percent, on average. As was the case last year, using computer software to interview tenants and record answers was one of the least frequently reported uses. For a more detailed look, by program type of computer utilization, refer to Exhibit E-7.

Exhibit E-7a.
Computer Software Uses in the Past 12 Months, by Program Type

	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Calculate rent	95.9%	99.2%	95.4%	96.5%
Print the 50058/50059 form	92.3%	100.0%	98.0%	96.3%
Print letters to the tenants	96.4%	96.8%	94.4%	95.7%
Maintain demographic information about the residents	95.4%	100.0%	91.4%	95.0%
Interview tenants and record answers	46.9%	36.8%	27.4%	37.0%

In addition to asking about the different tasks performed by PHA/projects using computers and computer software, the Project Staff Questionnaire also asked more specifically what percent of a PHA/project's 50058/50059 data was transferred to HUD via PIC/TRACS. Almost all PHA/projects (95%, on average) reported doing so, and 74 percent of PHA/projects reported transferring all their 50058/50059 data through this method.

Exhibit E-7b.
Transmission of 50058/50059 Data to HUD via PIC/TRACS in the Past 12 Months, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Transmitted directly	67.5%	84.8%	51.3%	63.3%
Transmitted through another agency	11.3%	5.6%	35.5%	18.5%
Transmitted by other methods	21.1%	9.6%	15.2%	15.5%
Average percentage of 50058/50059 data transmitted via PIC/TRACS	95.9%	96.8%	92.3%	94.7%
Percent of PHA/projects transmitting 50058/50059 data via PIC/TRACS	96.9%	97.6%	93.4%	95.9%

Verification Procedures. The most frequently reported methods of keeping track of when verification information was received were: keeping files with outstanding verification in a separate location (72%, on average), making a notation in the tenant file (67%, on average), and marking information using a paper list or tickler file (51%, on average).

With respect to the person responsible for keeping track of verification requests and returns, a majority of the time the project (re)certification staff were the ones responsible (86%, on average). PHA-administered Section 8 projects were least likely to have a supervisor keep track of verification status (26%), whereas owner-administered projects were most likely (48%). However, this is most likely due to owner-administered projects relatively small number of staff in comparison to the other program types.

Exhibit E-8a.
Methods for Keeping Track of Verification Information, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Kept record in tenant file	74.2%	70.4%	77.7%	72.1%
Kept files with outstanding verification in separate location or folder	73.7%	78.4%	60.4%	67.4%
Marked on a paper list/tickler file (tracking sheet, monitoring form, checklist, or log)	51.0%	58.4%	51.8%	51.3%

More than 82 percent of PHA/projects verified all components of tenant information at least occasionally, on average. More than 70 percent always verified tenant information. The types of household information most likely to always be verified were: Social Security Benefits (90% of PHA/projects, on average), Income from employment (87%, on average), and TANF/Welfare

benefits and other sources of income (82%). Child care expenses was the least likely to always be verified at 70 percent of PHA/projects, on average. Other types of household information less likely to always be verified were: Full time student status (73%), sporadic income (74%), and Disability status (74%). Verification rates in all four of the top items verified decreased from last year's questionnaire, as shown in Exhibit E-8b.

Exhibit E-8b.
Yearly Comparison of Rates of Verification of Various Items, by Program Type

Targets of Verification Procedures Always Verified:	PSQ 2005	PSQ 2006
Social Security Benefits	93.7%	89.5%
Income from employment	91.3%	86.5%
Other sources of income	87.4%	82.0%
TANF/Welfare Benefits	85.4%	81.8%

In addition to identifying how often PHA/projects identified household income, the Project Staff Questionnaire also asked PHA/projects to identify which types of household information were most difficult to verify. Sporadic Income, in addition to being less likely to be always verified, was listed as the most difficult to verify (68% of PHA/projects). On the other hand, other types of income, which was listed as more likely to always be verified, was reported as being more difficult to verify (58%). The value of assets (57%) and medical expenses (47%) were also reported as being difficult.

Exhibit E-8c.
Difficulties in Verifying Tenant Information in the Past 12 Months, by Program Type

Tenant Information Very or Somewhat Difficult to Verify:	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Sporadic/infrequent/seasonal employment	74.7%	79.2%	59.9%	67.8%
Other sources of income	65.0%	70.4%	47.7%	57.7%
Value of assets	62.3%	59.2%	54.3%	56.6%
Medical expenses	42.3%	57.6%	50.2%	47.3%

When asked to name causes of problems that emerged when obtaining complete verifications, PHA/projects cited tenants providing incomplete or inaccurate information as causing either serious or some problems at 88 percent. Employers not responding to requests in a timely manner (85%), and employers providing incomplete information (79%) were the other two reasons most cited as causing problems.

Exhibit E-8d.
Causes of Problems in Obtaining Complete Verifications, in the Past 12 Months, by Program Type

Issues Caused Serious or Some Problems:	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Tenants providing incomplete/inaccurate information	94.3%	96.0%	85.2%	88.2%
Employers not responding to requests in timely manner	91.8%	95.2%	78.7%	84.7%
Employers not providing all requested information	82.0%	91.2%	74.1%	78.5%

This year's Project Staff Questionnaire also surveyed PHA/projects on their frequency of use of the Tenant Assessment Subsystem (TASS) and Enterprise Income Verification System (EIV) in verifying various household information. The three most common tasks performed using either TASS or EIV were: verifying Social Security/SSI Benefits (89%), verifying Employment Income (70%), and verifying Dual Entitlement Benefits (66%). As expected, owner-administered projects were significantly less likely to use either TASS or EIV to verify tasks. More detailed figures broken down by program type are shown in Exhibit E-8e.

Exhibit E-8e.
Frequency of Use of TASS or EIV to Verify Information, in the Past 12 Months, by Program Type

TASS or EIV used Usually or Always to Verify:	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Social Security/SSI Benefits	93.0%	97.6%	74.8%	88.5%
Employment Income	90.2%	92.8%	24.5%	70.1%
Dual Entitlement Benefits	71.2%	81.6%	45.5%	65.9%
Disability Status	71.7%	73.6%	39.9%	62.2%
Unemployment Benefits	73.4%	80.8%	23.8%	59.7%
Black Lung Benefits	47.2%	57.6%	25.2%	43.1%

With respect to the level of cooperation of various individuals and institutions when verifying tenant information, insurance companies and health care providers were most likely to be usually uncooperative. Fifteen percent of PHA/projects reported insurance companies as being usually uncooperative, and 12 percent of PHA/projects reported health care providers and financial institutions as being so.

Exhibit E-8f.
Uncooperativeness of People in Obtaining Verification Information, in the Past 12 Months, by Program Type

Usually Uncooperative:	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Insurance companies (e.g. health insurance)	14.9%	18.4%	15.2%	15.4%
Health care providers (e.g. doctors, physicians, pharmacies)	13.4%	16.8%	8.6%	12.0%
Financial institutions (e.g. banks, investment firms)	12.9%	13.6%	10.2%	11.6%

When problems and difficulties arose in verifying information, PHA/projects resolved these issues though a variety of methods. Most prevalently, PHA/projects called third parties to obtain information (91%). PHA/projects also sent follow-up letters to third parties (87%), called tenants (85%), sent follow-up letters to tenants (82%), and used electronic verification or data matching such as EIV (71%). On average, 63 percent of PHA/projects reported resorting to accepting other/less preferred verification. Owner-administered programs were significantly less likely to resort to accepting less preferred verification.

Exhibit E-8g.
Procedures Used When Verification Was Not Provided As Requested in the Past 12 Months, by Program Type

	Program Type			
	Public Housing	PHA-Administered Section 8	Owner-Administered	Total
Called third party	92.8%	96.0%	93.9%	94.0%
Sent follow-up letter to third party	91.2%	88.8%	87.8%	89.3%
Called tenant	85.1%	92.8%	88.3%	88.2%
Sent follow-up letter to tenant	88.7%	89.6%	79.2%	85.3%
Used electronic verification or data matching (e.g. EIV)	86.1%	96.0%	47.7%	73.8%
Accepted other/less preferred verification	60.3%	75.2%	62.9%	64.9%

C. Conclusion.

Overall the PSQ analyses portrayed a complex and interesting picture of PHA/project practices and procedures. Most PHA/projects train (re)certification staff, transfer information about changes in HUD policies to their staff, monitor (re)certification work quality, use computer software for various purposes, and verify most (re)certification information. Some findings differed by program type. As expected, owner-administered PHAs were more likely to differ from the other two program types. They had the fewest staff, fewest (re)certification staff, and fewest units supported by the (re)certification staff, on average. Owner-administered projects also trained the fewest staff for the fewest hours, and were the least likely to use TASS or EIV systems to verify information. Lastly, they were also the least likely to resort to accepting less preferred verification information when difficulties arose in obtaining that information.

This year's study introduced new questions focusing on: underlying causes of problems in verifying information, frequency and underlying causes of errors when reviewing work done by

(re)certification staff, methods of obtaining household information for initial certifications and annual recertifications, and different ways that project staff communicate with their tenants. Errors in calculating rent, and incomplete verifications of income and expenses were the most prevalent among the PHA/projects, on average. PHA/projects reported the underlying causes of these errors were mainly due to tenants providing inaccurate or incomplete information, and the complexity and frequent changes of HUD regulations.

For the future studies, it would be helpful to develop and validate additional items specifically targeting potential difficulties in conducting training, using computer software, and getting support from various sources in verifying tenants' information. Focus groups and cognitive interviewing might aid in revision of the PSQ items by focusing attention on the specific circumstances and issues faced by the PHA/projects. Having detailed indicators of the positive, as well as negative aspects the (re)certification process, defined by the PHA/project staff, would provide a more complete picture of the issues faced by the PHA/project, as well as may provide a better link between PSQ information and the estimation of payment and income errors.

Appendix F—Multivariate Analysis

Appendix F: Multivariate Analysis

The multivariate analyses sought to further examine gross rent error and different types of error that occurred in the certification/recertification process. The goal was to identify and estimate the relationship between each predictor variable and gross rent error (or types of error), net of the effects of other predictor variables. The analyses made it possible to address the following questions:

- Holding other conditions constant, was a predictor variable (e.g., training for certification staff) related to rent error?

- What was the effect size (or relative strength) of a predictor variable in accounting for rent error?[1]

- Was there any joint effect (interaction) of two or more variables in relation to rent error? In other words, did any predictor variable's relationship with rent error change depending on another predictor variable? For example, was the "risk effect" of complex income sources on rent error weaker for projects with extensive computer application relative to projects without? Was the minimal education requirement in staffing related to lower rent error for PHA-administered programs but not for owner-administered programs?

To inform HUD's program improvement initiative, the focus of this analysis was project variables and types of process error in connection with rent error. It was necessary to take this focus to address study objectives 5, 6, 8, 12, and 13 regarding the influence on rent error by project factors vis-à-vis tenant characteristics. Project variables and various types of error that contribute to rent error are possibly controllable in program operation. Knowledge about project features in relation to rent error is useful for program improvement.

Prior studies have found that tenant background and financial situations were predictive of rent errors. Specifically, higher incomes from different sources and the complexity of income/expenses and allowance sources were related to larger rent errors. These variables, however, are beyond the control of staff and not subject to program remedy. In this study, tenant variables were primarily considered as covariates for statistical control in the examination of the effects of error and project operation variables. We did, however, examined joint effects or interaction between tenant variables and project variables.

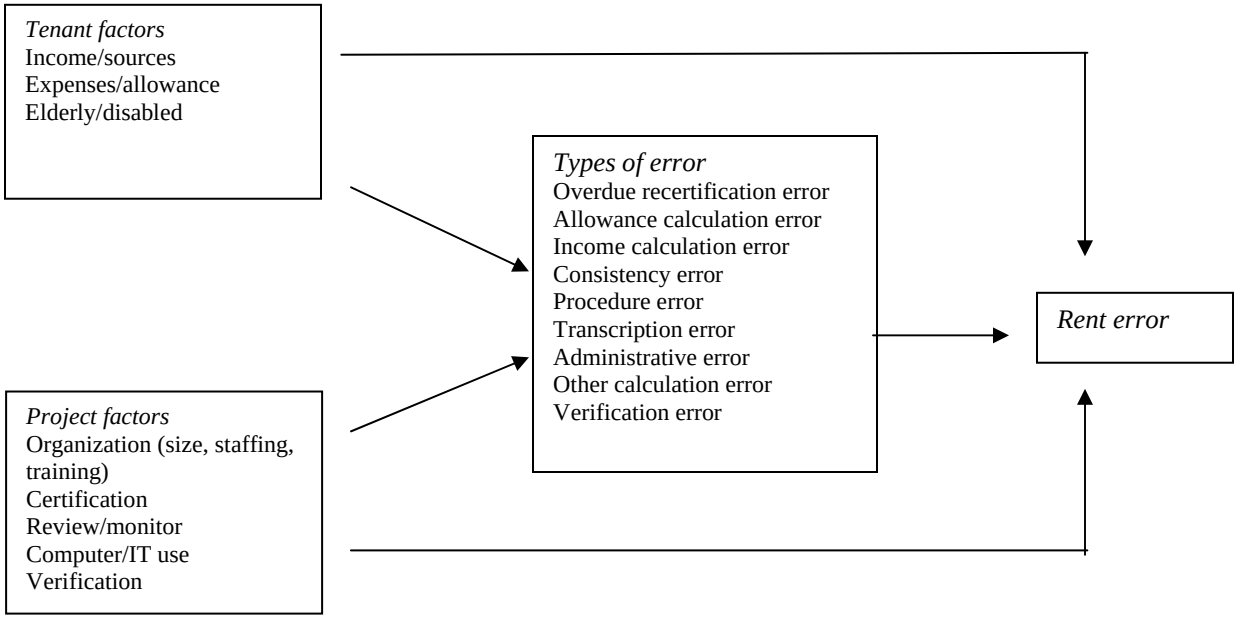
Conceptual Framework

This analysis was largely guided by the conceptual framework used in the FY 2005 study (see Figure F-1), with one modification. Rent error was considered as the outcome influenced by three sets of factors, household characteristics, project practices, and error types. The modification was to take project practices as a direct influence on rent error rather than, as in the prior study, an indirect influence.

[1] Estimation of the effect size for predictor variables require valid measure of each variable, sensible model specification, and good model fit. In survey data analysis, however, it is always challenging to obtain accurate measures of every variable and specify models that generate robust estimates of effect sizes.

This modification was based on the concern that different process errors may be inadequate in typology and measurement to fully explain rent error; and project characteristics and quality control processes may have additional impact on rent error. For example, staff education level and training may potentially reduce rent errors through improved quality control in broad areas beyond coping with particular types of process errors.

Figure F-1
Conceptual Framework for Modeling Rent Error



Analytic Approach

Project data were merged with tenant data for the analysis. We took tenant gross rent error and types of process error as outcomes in two sets of models. For gross rent error models, tenant variables, types of error, and project variables were used as predictor variables. For process error types, tenant and project variables were used as predictor variables.

The analysis included three steps. First we constructed composite variables to measure key concepts that hypothetically influence rent errors. Second we conducted preliminary analysis to identify predictor variables that were important to account for gross error, test alternative modeling approaches, and perform diagnostic analysis. Finally, we estimated models to address objectives specified in the Analysis Plan and additional issues of interest.

All statistical analyses were run with SAS. To adjust the design effect resulting from the clustered sampling design, we used the procedures of SURVEYREG for multiple regression modeling of gross rent error, SURVEYLOGISTIC for modeling different types of error, and SURVEYMEANS or SURVEYFREQ to examine weighted descriptive statistics. For initial analysis we used PROC MIXED for estimating two level variance, and SAS conventional procedures to examine raw data and residual scores of the predicted gross error.

Construct Composite Variables

The large number of tenant and project data items required editing and rescaling to build composite indicators of the concepts to explain rent errors. The process is summarized below.

General Strategy for Selecting Variables to Include in the Analysis

Predictor variables were selected for analyses based on a mixture of hypothesis-driven and data-driven approaches. First, variables predictive of rent errors in the multivariate analyses conducted in past HUDQC studies (2000-FY 2005) were selected; this was the primary approach used to select tenant variables. Second, some variables were selected if there was a hypothesis that they would be associated with rent errors; this was the primary approach used to select Project Staff Questionnaire (PSQ) variables. Some variables that were initially selected were excluded based on preliminary analyses. For example, variables were excluded if they were redundant with other variables included in the analysis based on examination of variance inflation factors. Details of the process used to select tenant and project variables for the analysis are explained below.

Tenant Data

Tenant data are the source for outcome measures of the analysis (dollar amount of rent errors and types of processing error) and household characteristics and financial conditions. Largely following previous studies, we constructed composite variables from the original data items and tested the variables' bivariate and multivariate relationships with gross rent error. Specifically, to the extent that such variables were available in the FY 2007 study, we included all tenant variables that were predictive of gross rent error in past HUDQC multivariate analyses (2000-FY 2005). In the process we examined descriptive statistics and missing values. The goal was to determine what variables were related to the error and therefore to be included into the multivariate equations. Exhibit F-1 lists all the modeled variables with descriptive statistics.

Gross rent error is the sum of the absolute values of over- and underpayments for each tenant. We took the logarithm of gross rent error to compact its skewed distribution (due to few cases with large error and many with zero error). Tenant background is represented by a binary-coded indicator with one for household heads who were elderly (age 62 or older) or disabled. Tenant financial conditions were represented by a set of measures, each rescaled by the grand mean (also known as centered) to make interpretation more straightforward[2]. Tenant financial condition variables were:

- Earned income, in dollar value
- Public assistance income, in dollar value
- Pension income, in dollar value
- Number of allowances

[2] With such centered scaling, the intercept of the regression model is the log gross rent error for tenants who had mean values on all the predictor variables; and each regression coefficient as the change in log gross rent error associated with one unit change around the grant mean of the given predictor variable.

Exhibit F-1 (Page 1 of 2)
Unweighted Descriptive Statistics
For Variables Used in the Multiple Regression Analysis

Variable Name	Variable Label	N	Mean	Std Error	Std Dev	Minimum	Maximum
ln_qc_gerr	log gross error	2,407	1.326	0.034	1.658	0.000	7.253
Elderly_disabled	elderly/disabled household head	2,407	0.528	0.010	0.499	0.000	1.000
c_QS_EBINC	centered earned income	2,407	-0.010	0.013	0.658	-0.406	4.594
c_QS_OIINC	centered other income	2,407	-0.009	0.010	0.487	-0.242	2.758
c_QS_PAINC	centered public assistance income	2,407	-0.002	0.008	0.382	-0.153	2.847
c_QS_SPINC	centered pension income	2,407	-0.010	0.019	0.909	-0.857	4.143
c_num_incexp	centered number: sources of income/expense	2,407	-0.045	0.071	3.476	-3.221	29.779
c_num_allowance	centered number: allowance items	2,407	-0.015	0.013	0.661	-1.262	1.738
zero_titems	binary: no transcription item	2,407	0.966	0.004	0.180	0.000	1.000
zero_vitems	binary: no verification item	2,407	0.057	0.005	0.233	0.000	1.000
items_transerr	Proportion of items with transcription errors	2,407	0.221	0.006	0.288	0.000	1.000
items_verferr	Proportion of item categories without written 3rd party verification	2,407	0.085	0.005	0.250	0.000	1.000
n_error	count of types of error	2,407	2.187	0.045	2.200	0.000	9.000
overdue_recert	Overdue recertification error	2,407	0.033	0.004	0.178	0.000	1.000
o_calcerr	other calculation error	2,407	0.103	0.006	0.305	0.000	1.000
a_calcerr	allowance calculation error	2,407	0.050	0.004	0.219	0.000	1.000
inc_calcerr	income calculation error	2,407	0.027	0.003	0.161	0.000	1.000
con_err	consistency error	2,407	0.231	0.009	0.421	0.000	1.000
pro_err	procedure error	2,407	0.305	0.009	0.460	0.000	1.000
trans_err	transcription error	2,407	0.415	0.010	0.493	0.000	1.000

Exhibit F-1 (Page 2 of 2)
Unweighted Descriptive Statistics
For Variables Used in the Multiple Regression Analysis

Variable Name	Variable Label	N	Mean	Std Error	Std Dev	Minimum	Maximum
adm_err	administrative error	2,407	0.469	0.010	0.499	0.000	1.000
items_transerrb	binary: any transcription error	2,407	0.432	0.010	0.495	0.000	1.000
items_verferrb	binary: any verification error	2,407	0.121	0.007	0.327	0.000	1.000
unit_staff	PSQ: unit per staff	2,315	183.943	3.685	177.311	1.000	1550.000
Edreq	PSQ: education requirement	2,315	0.777	0.009	0.417	0.000	1.000
Trainexp	PSQ: past yr training exp certi staff	2,315	0.749	0.009	0.433	0.000	1.000
Publichousing	Public Housing program	2,407	0.334	0.010	0.472	0.000	1.000
sct8	PHA Section 8 program	2,407	0.332	0.010	0.471	0.000	1.000
interv_cert	PSQ: require interview for init certi	2,315	0.936	0.005	0.245	0.000	1.000
interv_recert	PSQ: require interview for recert	2,315	0.748	0.009	0.434	0.000	1.000
Diffq	PSQ: N questions somewhat/very diff to answer	2,315	4.966	0.065	3.127	0.000	11.000
Methreview	PSQ: N methods used to review cases	2,315	2.590	0.032	1.532	0.000	7.000
Monleader	PSQ: monitored by supervisor	2,315	0.760	0.009	0.427	0.000	1.000
autoNfreq	PSQ: N certification activities using computer	2,315	9.927	0.049	2.347	0.000	14.000
Moncomputer	PSQ: monitor w computer	2,315	0.664	0.010	0.472	0.000	1.000
TASS	PSQ: used TASS_EIV at all	2,315	0.889	0.007	0.314	0.000	1.000
verif_staff	PSQ: lack verif due to insufficient staff	2,315	0.070	0.005	0.254	0.000	1.000
ssn_verf	PSQ: always verified SSN	2,315	0.825	0.008	0.380	0.000	1.000
Empinc_verf	PSQ: always verified employment income	2,315	0.902	0.006	0.298	0.000	1.000

Source: HUD Quality Control Survey, FY 2006

- Other income, in dollar value
- Number of income and expenses
- Number of transcription items, recoded into binary (one for no item, zero for one or more)
- Number of verifiable items, recoded into binary (one for no item, zero for one or more).

The typology of error was defined and measured the same way as in prior studies (see Introduction and Methodology for details), including:

- Overdue recertification error
- Allowance calculation error
- Income calculation error
- Consistency error
- Procedure error
- Transcription error
- Administrative error
- Other calculation error
- Verification error

Each type of error was indicated by dummy variables with one for error and zero for error free. Three interval measures of error were constructed—transcription and verification error rates and the total number of errors.

Project Staff Questionnaire Data

The FY 2006 Project Staff Questionnaire (PSQ) survey collected a large number of data items, encompassing certification staff training, certification processes, certification monitoring and review, computer and TASS or EIV use, and certification/recertification verification. The original data items were examined systematically through data editing and univariate, bivariate, and initial multivariate analysis. Composite variables were built with original items, giving preference to those with conceptual importance in accounting for the outcomes (rent error and process error), reasonable variation (frequency distributions were not concentrated in one category), and minimal missing cases.

Data recoding/rescaling entailed two approaches. One was to create accumulated counts of staff activities (e.g., number of items to review, monitor, or verify) from original data items that were deemed important to explain rent error. This approach generated composite variables of interval scale. The other approach was recoding original data items to create dichotomous (dummy) variables. It required examination of the raw data frequency distributions and missing values to ensure adequate differentiation and available cases. For example, in creating dummy variables for perceived difficulty in certification verification, we recoded cases to define “very difficult” vs. others (“somewhat” and “not difficult”). If few cases were in a given focal category, we combined two categories that were meaningful in making a distinction relevant to rent error (e.g., combine “usually verify” with “always verify”).

The following composite/rescaled variables by conceptual groups were used in the final modeling:

- Staffing and training[3]
- Unit/Staff ratio
- Education requirement in hiring (1 for minimal requirement—varying from high school/GED to associate or college degree—and 0 for no minimal requirement)
- Other credential requirements in hiring (1 for yes and 0 for no—for those with a requirement). This variable included a range of requirements including: related experience, special housing-related training/certification, and other skills.
- Experienced certification staff training (1 for provided training last year and 0 for no training).

Certification and Recertification Process

- Two dummy variables—personal interview requirement for certification and recertification: 1 for requiring personal interview for certification and recertification and 0 for no personal interview requirement. As the most stringent requirement in certification, the two measures were used in analysis.
- Number of questions that staff perceived to be difficult to answer by applicants, with fairly evenly scattered frequency counts between 0 and 11.

Monitor and Review of Certification/Recertification

Data on monitoring and case reviewing seemed important to account for rent error. The interval scales were summed across number of items monitored/reviewed, different personnel categories involved, and various methods used. Binary indicators were created for distinct methods and personnel categories that were expected to impact error (monitor with computer, monitor with predetermined form, monitor by supervisor, HUD/HUD contractor, outside auditor, etc.).

Computer/IT Application

- Number of certification activities that were frequently performed by computer;
- Computer used to track verification, 1 for yes and 0 for no; and
- TASS or EIV use, 1 for yes and 0 for neither used.

[3] The measures of certification staff training are challenging: For new staff training, only 39 percent of projects reported to have new staff assigned to conduct certifications and 37 percent provided training to new staff last year. Therefore it was impossible to use the detailed training measures for new staff (participation, length, methods and topics, etc.) in the analysis of the projects with no new staff or staff training. For experienced staff, less than three quarters of all projects reported to have provided training last year. The detailed data on training were again not available for analysis of the entire sample.

Certification/Recertification Verification

Likewise, numbers of items, methods, and personnel involved in verification of certification/recertification were, respectively, summed up to gauge the extent of the verification efforts. These were dummy variables that indicate:

- verification frequency: one for "always verified" and zero for less regular verification ("usually", "occasionally", or "never")
- perceived verification difficulty level: 1 for "very difficult to verify" and 0 for less difficult levels
- verification problem due to staff shortage, 1 for yes and 0 for no
- supervisor keep track of verification, 1 for supervisor and 0 for other personnel
- acceptance of other forms of verification if third party was unavailable: 1 for accepted and 0 for no.

Initial Analyses

Initial analyses were conducted iteratively with model testing to check missing data, explore alternative analytic approaches, select predictor variables, and examine residual values of the predicted gross error. Based on such diagnostic analyses, we then specified and tested multiple regression and logistic models of gross rent error and types of error.

Missing Data

There were 18 projects that did not respond to the PSQ survey, resulting in 92 tenant records without corresponding PSQ data (equivalent to 3.8 percent of the entire sample). Analysis revealed that approximately three quarters of these records were in the PHA-administered Section 8 program. Fortunately, we found no statistically significant difference in gross rent error between this group and the rest of the sample. For this analysis, these 92 cases were excluded from the modeling. This amount of missing data (3.8% of the sample had missing data) is within the range where complete-case analysis is acceptable (i.e., exclude observations with missing data from the analysis), based on Harrell's (2001) rule-of-thumb. Therefore, complete-case analyses were conducted and more elaborate strategies for handling missing data, such as multiple imputation or hot-decking, were not attempted.

Hierarchical Linear Modeling vs. Ordinary Least Squares Regression

The HUDQC sampling design and the resulting tenant and project data present a structure where tenants are nested within organizations. Specifically, tenants are grouped by projects, PHA, or owner/management agency, respectively for the Public Housing program, the PHA-administered Section 8 program, and the owner-administered program. With such a design, hierarchical Linear Modeling (HLM) is a strategy sometimes more effective than ordinary least square (OLS) regression in estimating effects at organization and individual levels (Raudenbush & Bryk, 2002).

HLM is most useful when a substantial proportion of the total variance exists at the organization level, in other words, when a substantial amount of the variance in the outcome is between projects relative to the total variance which also includes variance within project. The first step in deciding whether to use HLM rather than OLS regression is to estimate variance at the organization level vis-à-vis the total variance.

We tested the unconditional HLM model to estimate PHA/project/owner level variance (Exhibit F-2). Consistent with the FY 2004 and FY 2005 studies, the project level variance was small, only 3.9 percent of the total variance. We then tested a model specifying gross error mean as the outcome and dummy indicators of Public Housing and PHA-administered Section 8 as predictor variables with fixed effects (with the owner-administered program as the contrast); and another model specifying tenant earned income, a prominent tenant predictor of error, as an additional fixed effect.

Exhibit F-2
Variance Estimates at Project and Tenant Levels: Unconditional HLM Modeling

Model and effect	Estimate	Standard Error	Z Value or t Value	Probability
Unconditional model (ANOVA)				
Random effect				
Project level variance	0.182	0.044	4.260	<.0001
Residual, r_{ij}	4.470	0.140	31.920	<.0001
Total variance	4.652			
Project-level proportion of variance	0.039			
Fixed effect				
Mean log gross rent error (Intercept), γ_{00}	1.344	0.039	34.250	<.0001
Gross rent means-as-the-outcome model with program type fixed effects				
Random effects				
Project level variance	0.175	0.043	4.140	<.0001
Residual, r_{ij}	4.400	0.140	31.920	<.0001
Fixed effects				
Adjusted gross rent error (Intercept), γ_{00}	1.244	0.066	18.760	<.0001
Public Housing, γ_{01}	0.037	0.100	0.370	0.710
PHA-Administered Section 8, γ_{02}	0.236	0.092	2.580	0.010
Gross error means-as-the-outcome model with program type and tenant income fixed effects				
Random effect				
Project level variance, r_{ij}	0.171	0.042	4.030	<.0001
Residual	4.350	0.137	31.850	<.0001
Fixed effects				
Adjusted gross rent error (Intercept), γ_{00}	1.310	0.066	19.940	<.0001
Public Housing, γ_{01}	-0.040	0.099	-0.400	0.686
PHA-Administered Section 8, γ_{02}	0.132	0.091	1.460	0.145
Tenant earned income, γ_{10}	0.444	0.052	8.580	<.0001

[a] Random effects were tested in Z statistics and fixed effects in t statistics.
Source: HUD Quality Control Survey, FY 2006

The model with program type as fixed effects estimated that the PHA-administered Section 8 program had higher average gross error relative to owner-administered (γ_{02} =.236 and p< 0.010); but this effect was not statistically significant any more once the fixed effect of tenant earned income was specified in the model (γ_{02} =.132 and p=.145). The estimated average gross rent error for the Public Housing program did not significantly differ from the owner-administered program in either model. In contrast, tenant earned income had a considerably large and highly significant effect on gross rent error (γ_{10} =.444 and p< 0.001). These statistics suggested that the difference between the PHA-administered Section 8 program and the owner-administered program in gross rent error was largely due to their differences in tenant characteristics (earned income was only one of such tenant variables).

Note that project-level variance was modestly reduced as a result of including the program type and tenant income effects into the model. HLM modeling is preferable to OLS regression only if the level-2 (project level) variance is substantial (by a rule of thumb, 8 percent or more of the total variance). So we decided to use OLS regression to further model gross rent error and logistic regression to model likelihood of different types of error.

Model Specification and Testing

To select from the large number of tenant and project variables for the analysis, separate regression equations were specified for variables at the two levels. From each set of variables that represent a given construct, we initially selected predictor variables that were relatively substantial and statistically significant in bivariate relation with the gross rent error.

Next, we examined multicollinearity among the selected predictor variables. Multicollinearity may generate unstable estimates of the regression coefficients such that trivial changes in independent variables may substantially alter the regression coefficients. Variance inflation factors (VIF) are measures of multicollinearity among independent variables in a regression model. In diagnosis analysis, we examined VIF in OLS regression analysis of selected predictor variables to minimize collinearity in the final selection of predictor variables.

Among tenant variables, the analysis identified the following variables to have high collinearity (with VIF greater than 5): Household size (QC_NMEM) with number of dependents (QC_NDEP), medical care expense (_QS_MDEXP) with number of income and expenses (_num_incexp). Of the pairs of variable with high multicollinearity, we selected those that are correlated more strongly with gross rent error. Thus, QC_NDEP and _QS_MDEXP are dropped from the analysis since QC_NMEM and num_incexp are more closely associated with the outcome.

A number of error types were also found with relatively high collinearity, including consistency error (con_err), procedure error (pro_err), transcription error (trans_err), and administration error (adm_err). They were not included in the final multivariate modeling because their bivariate relationships with gross rent error were relatively weak.

For project level variables, extensive examination was performed in an attempt to identify variables that were predictive of rent errors. Initial regression analysis identified variables that were closely correlated, (e.g., of projects providing training last year, the trainee/staff ratio and the binary indicator of providing training last year were closely related).

We included the binary training indicator in the final analysis and excluded the trainee/staff ratio as it contained information only for projects that provided training.

We also excluded variables with a substantial number of missing cases. Perceived difficulty verifying disability expense and perceived difficulty verifying child care expense had 13 and 47 nonresponses, respectively. Since we have numerous measures of perceived difficulties in verification, these two are excluded from the analysis.

Given the large number of project variables, we selected from each conceptual group (as listed above) variables that had large and statistically significant coefficients in relation to gross error. Few project variables, however, showed such strong relationship with gross error. We then included at least one variable for each conceptual group in the final model.

Residual Analysis

Examining the distribution of residual scores of the predicted rent error is a way to ensure reasonable model specification and model fit with the data. Residuals refer to the discrepancies between the observed value of rent error and the predicted value of rent error resulting from the multiple regression model. Residual distribution should be roughly normal and without clear trend if the model fits well. We ran OLS regression with log gross rent error as the dependent variable and the full set of tenant characteristics, error types, and project factors as predictor variables to examine the pattern of residual scores. The results suggested that the standardized residual values were distributed approximately normal, but with a moderate trend: cases with higher predicted rent errors tended to have slightly lower residual scores. We believe such moderate residual distribution trends would not undermine the multiple regression modeling.

Effect Size

Estimating effect size is more informative and challenging relative to identifying significant predictors. Hypothesis tests determine whether or not an effect exists; a "statistically significant" predictor is one for which there is strong evidence that it is associated with rent error. In contrast, effect size estimates indicate the size or degree of association between a predictor and rent error, answering the question about the "relative importance" of a given predictor variable or set of predictor variables in accounting for rent errors. This analysis provided effect size measured with Cohen's f^2 for predictor groups, not individual predictor variables[4]. This approach was conservative since many project variables were newly developed and their psychometric properties untested.

[4] The effect size for multiple regression analysis may be assessed by comparing the change of the R^2. Given an R^2_A value resulting from an equation with a set of independent variables A, and an R^2_{AB} value generated from an equation with the A and another set of independent variables B, Cohen's f^2 is commonly used in the context of sequential (or nested) multiple regression analyses (Cohen, 1988). The f^2 effect size measure for multiple regression is defined as:

$$f^2 = \frac{(R^2_{AB} - R^2_A)}{1 - R^2_{AB}}.$$

Interaction Effects

In multiple regression analysis, if a predictor variable's effect on the outcome is differentiated (increased, decreased, eliminated, or reversed) by the values of another predictor variable, we say the two variables have an interaction (or joint) effect relating to the outcome (Aiken & West, 1991). Interaction effects, if found in this analysis, are potentially informative to housing program quality control because such patterns imply possible ways to reduce rent errors. Suppose the relationship of a "risk factor" (e.g., complex sources of income and allowance) to rent error is altered by a project variable (e.g., computerized certification tracking system), then the implication is that this risk could be moderated by the project variable.

A number of interaction effects were considered in the analysis based on the hypothesis that they would be associated with rent errors, including:

- Program type and minimal education requirement in hiring,
- Earned income and minimal education requirement in hiring,
- Earned income and income verification,
- Earned income and the number of certification activities that frequently used computers,
- Number of allowances and the number of certification activities that frequently used computers,
- Number of allowances and the use of TASS/EIV,
- Number of income/expense sources and the use of TASS/EIV,
- Number of allowances and minimal education requirement in hiring, and
- Number of income/expense sources and the minimal education requirement in hiring.

None of the pairs were found to have a statistically significant interaction effect.

Findings

We presented estimates of multiple regression analysis of gross rent error in detail because gross rent error was the primary measure of quality control in the multivariate analysis. Modeling different types of error was regarded as secondary analysis, therefore the results are reported briefly, only highlighting the tenant and project variables that were found related to the errors.

Gross Rent Error

Six models were run to examine the effects of different sets of predictor variables in relation to gross rent error (see Exhibit F-3). Linear regression adjusted for design effects (PROC SURVEYREG in SAS) was the modeling technique.

Predictor variables representing explanatory concepts were added into the equation in a sequence (known as sequential or nested modeling). Each model allowed us to estimate the effect of a particular set of variables that were added into the equation and the changing effects of previously entered variables and the model fit.

The final model (model 6) included the six sets of variables representing the following constructs:

- Tenant factor (characteristics and financial conditions);
- Major types of error;
- Project characteristics (type, size, and staffing);
- Certification (interview and review/monitoring);
- Computer/IT application; and
- Certification verification process

The predictor variables entered into the sequential models incrementally accounted for the variance of the gross rent error, with the largest share (15 percent) from tenant characteristics and financial conditions, followed by indicators of main types of error (7 percent). The proportion of rent error variance explained by project variables totaled only 1 percent (Figure F-2).

Corresponding to variance partitioning, the effect size estimates with Cohen's f^2 also showed that tenant characteristics and financial conditions represented a large source of the rent error; measures of major types of error represented another substantial source; and project features contributed relatively little to the prediction of gross rent error.

Figure F-2
Variance of Gross Rent Error Accounted for by Tenant, Process Error, and Project Variables: Multiple Regression Analysis with Design Effect Adjusted

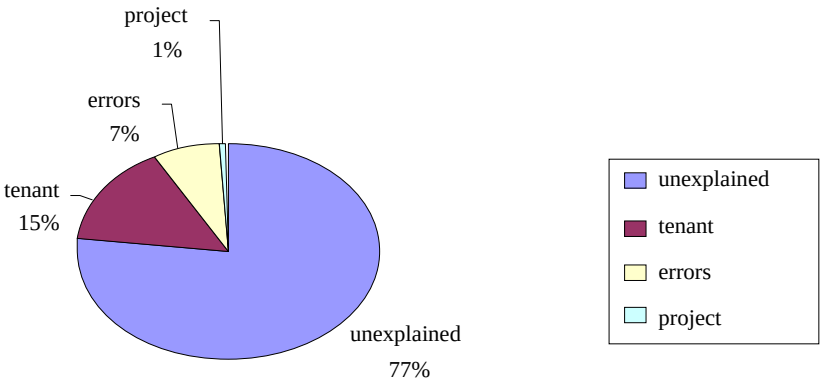


Exhibit F-3 (Page 1 of 2)
Log Gross Rent Error Accounted For By Tenant, Process Error, and Project Variables:
Multiple Regression Coefficients, Design Effect Adjusted

	Model 1 Tenant factor	Model 2 Process error	Model 3 Project size, type, staffing	Model 4 Certification process	Model 5 Computer/ IT Use	Model 6 Verification process
Intercept	1.233	1.921	2.221	2.104	2.092	2.268
Elderly/disabled	-0.212	-0.152	-0.097	-0.090	-0.083	-0.092
Earned income	0.642 **	0.542 **	0.518 **	0.516 **	0.517 **	0.520 **
Other income	0.353 **	0.329 **	0.337 **	0.333 **	0.330 **	0.336 **
Public assistance income	0.502 **	0.503 **	0.497 **	0.497 **	0.499 **	0.492 **
Pension income	0.217 *	0.169	0.123	0.124	0.122	0.123
N incomes/expenses	0.058 **	0.040 **	0.040 **	0.040 **	0.040 **	0.040 **
N allowances	0.576 **	0.511 **	0.512 **	0.512 **	0.510 **	0.519 **
No transcription item	0.203	-0.706 *	-0.942 *	-0.929 *	-0.936 *	-0.937 *
No verification item	0.997 **	0.262	0.134	0.132	0.127	0.137
Overdue recertification		0.905 **	0.936 **	0.944 **	0.960 **	0.965 **
Allowance calculation error		0.059	0.050	0.046	0.054	0.057
Income calculation error		-0.372	-0.325	-0.321	-0.303	-0.272
% transcription error		0.956 **	1.019 **	1.024 **	1.034 **	1.038 **
% verification error		-0.054	-0.032	-0.033	-0.029	-0.041
Administrative error		0.378 **	0.363 **	0.354 **	0.353 **	0.341 **
Unit-staff ratio			0.000	0.000	0.000	0.000
Minimal education requirement			-0.217 *	-0.243 **	-0.251 **	-0.261 **
Staff training last year			0.060	0.028	0.034	0.022
Public Housing program			-0.154	-0.164	-0.140	-0.092
PHA-administered Section 8 program			0.127	0.106	0.125	0.177 *
Interview required certification				0.035	0.032	0.023
Interview required re-certification				0.031	0.038	0.038
N difficult questions to answer cert				0.011	0.009	0.012
N methods used in review				0.024	0.025	0.023

Exhibit F-3 (Page 2 of 2)
Log Gross Rent Error Accounted For By Tenant, Process Error, and Project Variables:
Multiple Regression Coefficients, Design Effect Adjusted

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Tenant factor	Process error	Project size, type, staffing	Certification process	Computer/ IT Use	Verification process
Monitor certification by supervisor/leader				-0.015	-0.028	-0.020
N certification activities using computer					0.018	0.017
Monitor certification with computer					-0.033	-0.032
Use TASS or EIV system					-0.158	-0.180
Staff shortage for verification						-0.067
SSN always verified						0.132
Income always verified						-0.293 *
R^2	0.154 **	0.226 **	0.23 **	0.231 **	0.232 **	0.234 **
Cohen f^2	0.182	0.093	0.005	0.001	0.001	0.003
% variance accounted for	0.154	0.072	0.004	0.001	0.001	0.002

Source: HUD Quality Control Survey, FY 2006
* p< 0.05 ** p< 0.01 (test with the null hypothesis that a coefficient [or R^2]=0; a significant result indicates that the corresponding variable(s) is associated with gross error).

Specifically, the analysis showed that tenants with elderly or disabled household heads had lower gross rent error, though this difference was not significant after different types of process error entered equation (Model 2 and thereafter). Higher incomes from different sources (employment, pension, public assistance, and other sources) were also related to larger gross rent error, with pension income no longer significant after project variables entered into the equation (Model 3).

Further, the two measures of the numbers of income/expense sources and allowance items predicted higher gross rent error, as estimated with all the six models. Tenants with no transcription items tended to have a lower gross rent error (Models 2 through 6). These findings confirmed results from the prior studies and were appealing to commonsense: given other conditions equal, complex financial conditions increase the risk for rent error.

Three types of error-- recertification overdue, the proportion of transcription items with errors, and administrative error--were related to larger gross rent error. The pattern occurred consistently as identified in the six models. We note that due to multicollinearity, indicators of consistency error, procedure error, and other income calculation error were excluded from the models.

Program types (Public Housing, PHA-administered Section 8, and owner-administered) differed in rent error as found in bivariate analysis, with the PHA-administered Section 8 program's average rent error higher than that of the owner-administered program. The difference was, however, no longer observable in the multiple regression analysis due to statistical control for the effects of tenant and error types. It may be concluded that the program type bivariate difference in gross rent error was attributable largely to the programs' differences in tenant characteristics. Still, relative to owner-administered housing, tenants administered under the PHA-administered Section 8 program were slightly more likely to have gross rent error (Model 6) after controlling for the effects of certification verification efforts. This finding may hint that the PHA-administered Section 8 program's verification effort was relatively strong and after holding verification activities constant, the PHA-administered Section 8 program's rent error became higher than the owner-administered program[5].

It is remarkable that, holding other variables equal, projects with minimal education requirements in hiring staff had lower gross rent error compared with projects with no such requirements. Estimated consistently significant in Models 3 through 6, this was a conspicuous project-level effect. The finding indicates that under similar conditions with respect to tenant characteristics, error types, and project characteristics, having specific standards for the level of staff education requirement—even though ranging widely from high school graduation to college degree across projects-- was helpful in reducing rent errors. Converting Model 6 estimates from log scale to dollar value, the effect of the minimal education requirement was a $2.36 reduction of the adjusted mean gross rent error of $10.18 (the intercept), if other predictor variables scored zero[6.] This implies that projects that were more selective in their hiring process regarding staff education tended to have a substantially lower rent error.

[5] Bivariate tabulation provide some support for this finding: on two measures of verification effort—always verify SSN and always verify employment income, the Section 8 program had higher rates than the owner-administered program, respectively at 85.9% and 96.8% versus 79.6% and 80.2%; though the former had higher rates reporting more severe staffing shortage for certifications than the latter (10.4% vs. 1.8%).

[6] The qualification that "other predictor variables scored zero" means that our interpretation holds for tenants who had average incomes and number of income/allowance sources, transcription items, and no errors, and who were

The results from modeling gross rent error were consistent with the findings from studies in prior years. The key patterns emerging from the recent three years' studies underscore the importance of tenant characteristics and financial situations in explaining gross rent error. To summarize, holding other conditions constant:

- Tenants with higher incomes from various sources tend to have larger gross rent error;
- Tenants with complex financial conditions (more sources of income, items of expense and allowance, and more items requiring transcription or verification) tend to have larger gross rent error;
- Errors in certification and recertification processing including income calculation, judgment consistency, administrative handling, and other activities are responsible for higher gross rent error;
- The PHA-administered Section 8 program tends to have a greater average gross rent error than owner-administered programs, whereas the Public Housing program does not differ from owner-administered program;

This analysis found minimal education requirements in hiring –although different in specifics by projects--was associated with lower gross rent error, given similar tenant characteristics and project conditions. Another significant project feature relating to reduced gross error was income verification on a regular base.

Types of Error

Binary and interval measures of types of error were analyzed with, respectively, multiple logistic regression and OLS regression. The models specified the same set of tenant and project characteristics as predictor variables. Exhibit F-4 presents the logit estimates (log odds) and Max-rescaled R^2 from the logistic models of the eight types of error in dummy coding.[7] The resulting models fit statistics (AIC and -2 log Likelihood with vs. without covariates—not presented in Exhibit F-4) suggested that most models fit data reasonably well, except the model of overdue re-certification error, perhaps due to the less variation of the measures (only over 3 percent of tenants counted this error).

administered under projects that were not in the Section 8 program and that did not always verify income.

[7] We choose to present logit estimates rather than odds ratio because logits can be understood in a similar way as linear regression coefficients. The logistic regression models the relationship between the outcome *Y=1* (a given error in our analysis) and the predictor variables through the logit function, the natural logarithm of odds of *Y=1*. The model assumes a linear relation between the log of odds and predictor variables, X_1, X_2, ... , X_k, and can be written as: Let $p=P(Y=1)$, then $log\ (p/(1-p)) = intercept + b_1X_1 + b_2X_2 + ... + b_kX_k$. Max-rescaled R^2 allows the maximal value of 1 and is recommended as a better approximate of the variance explained by the logistic model, compared with generalized R^2 (Hosmer & Lemeshow, 2001).

Exhibit F-4
Different Types of Process Error Accounted For by Tenant and Project Variables: Multiple Logistic Coefficients, Design Effect Adjusted

	Overdue recerti-fication	Other calculation error	Allowance calculation error	Income calculation error	Consist-ency error	Proce-dure error	Tran-scrip-tion Error	Admini-strative error	Verifi-cation error
Intercept	-4.157	-2.169	-1.984	-6.052	-1.292	-0.818	-0.024	0.203	-2.219
Elderly/disabled	-0.389	-1.322 **	-0.033	0.528	0.013	-0.206	-0.463 *	-0.583 **	0.138
Earned income	0.098	0.195	0.168	-0.300	0.021	0.075	0.364 **	0.338 **	0.191
Other income	0.154	0.048	-0.361	0.482 *	-0.343 *	-0.112	0.111	0.132	0.701 **
Public assistance income	0.267	0.213	0.175	0.426	-0.044	0.085	0.031	0.040	0.320
Pension income	0.195	0.233 *	-0.054	-0.372	0.009	0.082	0.229 **	0.263 **	0.089
N incomes and expenses	0.031	-0.014	0.010	0.069 **	0.053 *	0.054 **	0.124 **	0.121 **	0.075 **
N allowances	0.189	0.608 **	0.876 **	0.547 *	0.590 **	0.488 **	0.604 **	0.625 **	0.198
Ed requirement	0.257	0.196	-0.013	0.231	-0.420	-0.106	-0.356 *	-0.244	0.175
Staff training	0.014	-0.176	0.596	0.041	-0.755 **	-0.454 *	-0.189	-0.122	0.599 **
Public Housing	1.340	0.688	1.561 **	0.647	2.091 **	1.495 **	0.334	0.423	0.624 *
PHA-administered Section 8	1.226	0.074	0.738	0.135	1.292 **	0.866 **	-0.174	0.005	0.497
Interview certificate	0.208	-0.060	-0.124	-0.363	0.089	0.088	0.249	0.336	-0.029
N difficulties quest	-0.036	0.034	-0.067	0.019	0.094 **	0.056 *	0.066 **	0.049 *	0.045
N methods review	0.039	0.212 **	0.470 **	0.019	0.247 **	0.206 **	0.005	0.039	-0.042
N computerized certif. activities	-0.158 *	-0.148 **	-0.271 **	-0.164	-0.118	-0.143 **	-0.051	-0.071 *	-0.043
Use TASS/EIV	1.372	0.654	-1.154 *	2.211 **	-0.797	-0.069	-0.147	-0.031	0.026
Staff shortage verification	0.474	0.773 *	-0.183	0.397	0.416	0.431	-0.463	-0.069	-0.102
SSN always verified	0.052	-0.128	-0.218	-0.309	0.454	0.316	0.324	0.355 *	0.362
Income always verified	-0.232	0.161	-0.038	1.980	-0.615 *	-0.333	-0.355	-0.408	-0.655 **
Max-rescaled R^2	0.070 **	0.174 **	0.208 **	0.116 **	0.300 **	0.232 **	0.230 **	0.220 **	0.110 **

Source: HUD Quality Control Survey, FY 2006
*p< 0.05 ** p<0.01

Max-rescaled R^2 (roughly interpreted as the proportion of variance accounted for by the model) fluctuated from 7 to 30 percent across models. Since effect size was not estimated for predictor variables and no attempt was made to run sequential modeling, we interpret the estimates by merely stating whether or not a relationship between the predictor variable and the error existed based on the significant test (with p value smaller than 0.05). We emphasize the tentativeness of the results and hope to conduct further analysis to clarify the patterns. All else equal, the following relationships were found in the analyses:

Overdue Recertification Error

The more the certification activities used computer processes, the less likely overdue recertification would occur.

Calculation Error (other than income and allowance)

- Households with elderly or disabled heads were less likely to have this error; whereas households with higher pension income and more allowances were more likely to have the error.

- The more different methods used in reviewing certification and the more severe the claimed staff shortage for verifications, the greater the chance for calculation error to occur.

- Again, the more computerized certification activities, the lower the chance of this error.

Allowance Calculation Error

- The more allowance items, the greater the chance for this error to occur.

- The Public Housing program had a greater chance for the error than the owner-administered program.

- The more methods used in reviewing certifications and the more severe the claimed staff shortage for verification, the greater the chance for the calculation error to occur.

- The more computerized certification activities, the less likely to have this error.

- Using the TASS/EIV system also lowered the chance for this error.

Income Calculation Error

- The higher the public assistance income and the more sources of income and allowances, the greater the chance for this error to occur.

- The use of the TASS/EIV system, however, was related to higher chance of this error.

Consistency Error

- Higher income other than earned, pension, and public assistance predicted a lower chance for consistency error.
- The more income and allowance items, the greater the chance for this error to occur.
- Providing training to experienced certification staff was related to lower chance of this error.
- Both Public Housing and the PHA-administered Section 8 programs were more likely to have this error relative to the owner-administered program.
- Perceived difficulties for applicants to answer certification questions and the number of methods used for reviewing certification were both related to greater chance for this error.
- Regular verification of incomes was related to lower chance of the error.

Procedure Error

- The more income and allowance items, the greater chance for this error to occur.
- Training for certification staff was related to lower chance of the error.
- Both Public Housing and the PHA-administered Section 8 programs had higher chance for this error relative to the owner-administered program.
- The more difficulties for applicants to answer certification questions and the more methods used in reviewing certification, the greater the chance of the error.
- The more certification activities were computerized, the lower the chance for procedure error to occur.

Transcription Error

- Households with elderly or disabled heads were less likely to have this error.
- The higher the earned or pension incomes and the more income sources and allowance items, the greater chance for this error to occur.
- The minimal education requirement in hiring was related to lower chance of the error.
- The more difficulties for the tenant to answer certification questions, the greater the chance for this error to occur.

Administrative Error

- Households with elderly or disabled heads were less likely to have this error whereas households with higher earned or pension incomes and more income sources and allowance items were more likely to have the error.
- The more difficulties for the tenant to answer certification questions, the greater the chance for the error to occur.
- The more methods used for reviewing certifications, the greater the chance for the error.
- The more computerized certification activities, the lower the chance for the error to occur.

Verification Error

- Households with elderly or disabled heads had a lower chance for verification error.
- Higher other income and more income/expense items were associated with greater chance for this error.
- Perplexingly, training for certification staff was related to higher chance for this error.
- The Public Housing program had greater chance of the error relative to the owner-administered program.
- Regular verification of income predicted lower chance of this error.

Three interval measures of errors—the numbers of transcription errors, of verification errors, and of all errors, were modeled in multiple linear regression analysis (Exhibit F-5). The patterns revealed in the models of the transcription errors and verification errors were largely consistent with the findings from logistic regression analyses of the binary coded transcription error and verification error as described above. And the estimates from modeling the number of all errors also confirmed the overall patterns summarized above.

In short, for most types of error, tenant higher incomes and complex financial conditions contributed to greater chance of occurrence, whereas elderly and disabled households were less likely to have errors. The patterns were comparable with those found in the gross rent error models. A number of project features were found relevant to many types of error. Notably, computer application in certification activities was consistently related to lower chance for virtually every type of error. Regular verification of income was related to lower chance of many types of error, though not all estimates were statistically significant. Minimal education requirement in hiring was significantly related to lower chance of only one type of error and its relationship with other error types was not statistically significant.

Exhibit F-5

Numbers of Transcription Errors, of Verification Errors, and of All Errors Accounted for by Tenant and Project Variables: Multiple Regression Coefficients, Design Effect Adjusted

	N of transcription errors	N of verification errors	N of all errors
Intercept	0.310	0.067	2.512
Elderly/disabled	-0.016	0.023	-0.378 **
Earned income	0.048 **	0.016	0.313 **
Other income	0.027	0.048 **	0.144
Public assistance income	-0.012	0.008	0.144
Pension income	0.021 *	0.002	0.201 *
N income/expense	0.011 **	0.004 *	0.102 **
N allowances	0.019	-0.009	0.674 **
Ed requirement	-0.037	0.007	-0.228
Staff training	-0.026	0.040 *	-0.229
Public Housing	0.085 **	0.071 *	1.040 **
PHA-administered Section 8	-0.027	0.053 *	0.279
Interview certification	-0.013	0.007	0.154
N difficulties quest	0.007 *	0.003	0.068 **
N methods review	0.002	-0.002	0.120
N computerized activities	-0.009 *	-0.004	-0.118 **
Use TASS/EIV	-0.025	-0.017	-0.072
Staff shortage verify	-0.047	-0.007	0.069
Verify SSN	0.013	0.024	0.338
Verify income	-0.029	-0.036 *	-0.383
R^2	0.081 **	0.029 **	0.177 **

Source: HUD Quality Control Survey, FY 2006
*p< 0.05 ** p<0.01

The estimates for using the TASS/EIV systems were confusing in relation to different types of error. TASS/EIV use was related to lower chance of allowance calculation error but higher chance of income calculation error. Further studies may help clarify the pattern. We suspect that the significant estimates for training for certification staff and verification of SSN in relation to greater chance of, respectively, verification and administrative errors were due to unknown confounding factors, or perhaps statistical artifacts.

Comparison with the Results of Past HUD Quality Control Studies

Multivariate analyses of HUDQC data have been conducted in each study since 2000. It is important to look for similarities in findings across the years. Variables that exhibit robust, consistent associations with rent errors are likely to be important and reliable drivers of rent errors in the future.

The data collected, analytic variables and nature of the analyses differed from year to year, so it is not always possible to make straightforward comparisons. However, despite differences in the data and analyses across years, some consistent findings were observed. Consistent with models constructed in past studies, the multivariate linear model of gross rent errors found the following variables to be significantly associated with rent errors:

- Household income (also found in FY 2005)
- Number of allowances (also found in FY 2004)
- Number of "other" income sources (also found in 2000)
- Number of public assistance sources (also found in 2000)
- Total number of income/expenses (also found in 2000)
- PHA-administered Section 8 PHAs (also found in FY 2004)
- Overdue recertification (also found in FY 2005)
- Number of items with transcription errors (also found in FY 2005)

An overall theme of the findings (also consistent with the results of past multivariate analyses) is that tenant characteristics explain more of the variance in rent errors than do PHA/project characteristics and practices. This suggests that identifying tenants with a high likelihood of having a rent error, and perhaps using a more detailed and thorough rent calculation and verification process with such tenants may be a particularly useful strategy for reducing rent errors.

Summary

This analysis confirmed major findings in previous studies in addressing Study Objectives 5, 6, 8, 12, and 13. To address Objective 5 (difference in error by program), results from bivariate, HLM modeling, and regression analysis indicated that PHA-administered Section 8 programs had higher average gross rent error than the owner-administered programs; but the difference was due to differences in tenant characteristics because once tenant variables were hold constant, the program difference was no longer statistically significant. This finding requires closer research. If substantiated, it may imply inherent difficulties in running the PHA-administered Section 8 program because the estimate of relatively high rent error for the program only appeared after controlling for verification efforts, which PHA-administered Section 8 programs were found to have undertaken at high rates.

To address Objective 6 (impact on error by tenants vs. project/staff), this analysis found that, consistent with previous results, the impact of tenant characteristics on rent error was apparently greater than program sponsor staff. As shown in variance partitioning with the HLM unconditional model and the sequential OLS models, tenants' high incomes and multiple sources of incomes and allowance items were related to both higher gross rent error and different types

of error. These tenant variables should be seen as important indicators of risk for rent errors and be targeted by program intervention.

To address Objective 8 (error concentration in program/project), this analysis found that, to a varying extent, a number of program/project features did relate to rent error and different types of error. Specifically, projects that regularly verified incomes had lower rent errors. Projects with minimal education requirements in hiring consistently had lower rent error, a pattern strongly suggesting that projects should implement such requirement, even though the specific educational level may be subject to local judgment.

To address Objective 12 (rent errors differentiated by using automated system), the analysis provided evidence that computer application in the certification process helped reduce different types of processing error. Using the TASS or EIV system, however, was not yet clear in relation to rent error or different types of error and we expect to conduct more analysis to clarify the issue.

To address Objective 13 (other tenant or project characteristics related to errors), the analysis found, as mentioned above, project minimal education requirements in hiring were consistently related to lower rent error. This feature, however, was found to be related to some, rather than all, types of process error. While further studies are necessary, a possible implication is that staff education qualification may have broader impact on quality control than coping with particular process errors.

Based on this analysis, we foresee possibilities to advance the study of HUD quality control efforts. Analyzing interaction between tenant "risk factors" and certification activities in connection to rent error should be promising. This analysis failed to identify significant interaction effects, likely due to lack of systematic research and testing of alternative scaling for predictor variables. Further, the tenant-nested-within-project structure is an important feature of the housing program operation. If it is fully understood, we should be able to use HLM techniques to analyze tenant and project factors by specifying models to partition and account for the variance of both the average rent error (the intercept) and the differentials by key predictor variables (slopes).

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