Quality Control for Rental Assistance Subsidies Determinations
Final Report for FY 2008

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

PD&R

Quality Control for Rental Assistance Subsidies Determinations

Final Report for FY 2008

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Acknowledgements

Table of Contents

Table of Contents

Appendices

Appendix A: Rent Calculations
Appendix B: Weighting Procedures
Appendix C: Source Tables
Appendix D: Consistency and Calculation Errors
Appendix E: Project Staff Questionnaire Descriptive Analysis
Appendix F: Multivariate Analysis

List of Exhibits

Table of Contents

Table of Contents

Table of Contents

List of Figures

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 administrator income and rent determination error by housing providers. This study does not involve an audit of individual PHAs or projects; nor does it monitor the implementation of housing programs. Its focus is on identifying households where an error was made when calculating the amount of the household's rent; and providing nationally representative findings related to those errors.

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 June 2009 for actions taken by Public Housing Authority (PHA) and project staff during Federal FY 2008 (October 2007 through September 2008).* These findings show that the percent of errors, and the gross erroneous payments 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 continue to remain stable when compared with results from previous studies. In addition, there was a statistically significant decrease in the average dollars in subsidy overpayment error associated with the Section 8 Voucher program; and a statistically significant increase in the average dollars in subsidy underpayment associated with the Public Housing program. The average dollars in error, and the gross dollar error rate for the owner-administered programs have not changed significantly.

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 adjusted 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 and calculate 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. Seven studies have been conducted to identify program administrator income and rent determination error. In addition to the 2000 study, studies were conducted in for FYs 2003 through 2008. The study referenced in this report covers FY 2008, and is being used to update the FY 2007 measurement of errors in program administrator income and rent determinations. The tenant data collected for this study were also used to provide the sample 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 2008. When appropriate, study findings are compared with findings from the previous studies.

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 2,401 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 project and 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, assets 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 2008 tenant files, tenant interview, and income verification data indicates that—

♦ 63 percent of all households paid the correct amount of rent within $5 (50 percent paid exactly the right amount)

♦ 18 percent of all households paid in excess of $5 less than they should have (with an average error of $49 per month)

♦ 19 percent of all households paid in excess of $5 more than they should (with an average error of $37 per month)

Rent Error Estimates by Program Type. The rate of rent underpayments was highest, at 20 percent, in the PHA–administered Section 8 program followed by the owner-administered program with 17 percent error, and the Public Housing program with 16 percent error. Both the PHA–administered Section 8 program and the owner-administered program had a rate of overpayment of 19; while the rate of overpayment for Public Housing was 18 percent. The exhibit below summarizes this information.

Exhibit ES-1
Frequency of Rent Error by Program Type

Program	Rent Underpayment (Subsidy Overpayment)	Rent Overpayment (Subsidy Underpayment)
Public Housing	16%	18%
PHA-Administered Section 8	20%	19%
Owner-Administered	17%	19%
Total	18%	19%

Executive Summary

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 $433 Million Annually (down from $524 Million in FY 2007).* For tenants who paid less monthly rent than they should pay (18.0 percent), the average monthly underpayment was $49. 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 $8.74 ($105 annually). Multiplying the $105 by the approximately 4.1 million units represented by the study sample results in an overall annual underpayment dollar error of approximately $433 million per year.

♦ *Rent Overpayments of Approximately $342 Million Annually (up from $260 Million in FY 2007).* For tenants who paid more monthly rent than they should pay (18.73 percent), the average monthly overpayment was $37. When this error was spread across all households, it produced an average monthly overpayment of $6.90 ($83 annually). Multiplying the $83 by the approximately 4.1 million assisted housing units represented by the study sample results in an overall annual overpayment dollar error of approximately $342 million per year.

♦ *Aggregate Net Rent Error of $91 Million Annually.* When combined, the average *gross* rent error per case is $16 ($9 + $7). Over- and underpayment errors partly offset each other. The *net* overall average monthly rent error is -$2 ($-9+$7). 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 $91 million per year ($433 million - $342 million)[1].

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	$49 (18.0% of cases)	$37 (18.73% of cases)
Average Monthly Per Tenant Error Across All Households	$9	$7
Total Annual Program Errors	$433 million	$342 million
Total Annual Errors—95% Confidence Interval	$338 - 529 million	$259 – 425 million

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[1] The actual estimate of annual rent underpayments is $433.30 million. The actual estimate of annual rent overpayments is $341.98 million. Therefore the actual estimate of net rent error is $91.32 million ($433.30 - $341.98 = $91.32).

Executive Summary

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	$ 90,597	$92,708	-$ 2,111	$183,305
PHA-Administered Section 8	$224,919	$175,329	$ 49,589	$400,248
Total PHA-Administered	$315,515	$268,037	$ 47,478	$583,553
Owner-Administered	$117,783	$ 73,940	$ 43,844	$191,723
Total	$433,299	$341,977	$ 91,322	$775,276
95% Confidence Interval	+/-$ 95,678	+/-$ 83,073	+/-$ 92,546	+/-$153,447

^ Numbers may not add exactly due to rounding.

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 adjustment were conducted to compare the three program types included in the study on mean gross dollar error, mean gross error rate, mean overpayment and underpayment dollar errors, and mean overpayment and underpayment error rates , controlling for the effects of project and tenant characteristics. No statistically significant difference was found across the three program types in any of these error measures in the FY 2008 data.

Comparison with Prior Studies. Six prior studies, the 2000 baseline, the FYs 2003, 2004, 2005, 2006 and 2007 studies estimated erroneous payments attributed to program administrator rent calculation and processing errors, using the same methodology, sampling procedures, and sample sizes as this FY 2008 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, 2005, 2006, and 2007 final reports were completed in July 2005, October 2006, October 2007, and October 2008 respectfully. 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. The FY 2007 study once again indicated a decrease in gross dollars in erroneous payments with significant reductions in PHA administered programs.

The FY 2008 study demonstrates the lowest level of gross dollars in erroneous payments in study history, but the decrease from FY 2007 findings does not represent a statistically significant

difference. Statistically, the gross dollars in erroneous payments has remained the same since the FY 2004 study. Exhibit ES-4 presents a comparison of the gross erroneous payments for 2000, FY 2003, FY 2004, FY 2005, FY 2006, FY 2007, and FY 2008.

Exhibit ES-4
Comparative 2000 through FY 2008 Gross Erroneous Payments*

Gross Erroneous Payments (in $1,000's)	Administration Type				Total
	Public Housing	PHA-Administered Section 8	*Total PHA-Administered*	Owner-Administered	
FY 2008	$183,305	$400,248	$583,553	$191,723	$775,276 +/- $153,447
FY 2007	$149,364	$435,012	$584,376	$199,104	$783,480 +/-$157,292
FY 2006	$172,824	$520,020	$692,844	$261,324	$954,168 +/-$192,000
FY 2005	$220,464	$456,240	$676,704	$248,580	$925,232^ +/- $164,000
FY 2004	$242,076	$521,220	$763,292	$224,460	$987,744^ (+/-$131,000)
FY 2003	$316,116	$730,956	$1,047,072	$368,796	$1,415,844^ (+/-$163,000)
2000	$602,556	$1,096,524	$1,699,092	$539,160	$2,238,252^ (+/-$275,000)
Percent Reduction from 2000 to FY 2008	69.24%	59.86%	63.18%	64.40%	63.48%

* 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. Sources of Errors

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

Executive Summary

♦ 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 consistency 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.

Verification Errors. The percentage of income and expense items verified by PHA/owner staff in FY 2008 continued to show little change compared to FY 2007 and FY 2006. Income items were verified at least 76 percent of the time compared to 75 percent in FY 2007 and 74 percent in FY 2006. Failure to use verified income and expense amounts continues to be a problem. The percent of items where the verified amounts matched the amount reported on the 50058 and 50059 Forms decreased slightly for three rent components, earned income, pensions, and public assistance; but increased slightly for other income, asset income, and medical expenses. The largest change in the degree to which programs correctly incorporate verified data was for child care expenses which increased from 67 percent in FY 2007 to 77 percent in FY 2008.

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.

Overdue Recertifications. HUD requires that every household be recertified annually. The percent of households for whom recertifications were overdue in FY 2008 continued to be two percent. The same is in FY 2007.

Component Errors. Incorrect income and allowance amounts were by far the most significant sources of error in determining rents. One percent of households with rent errors did *not* have an income or expense component error. Earned income (23 percent), pension income (21 percent), and medical allowances (21 percent) continued to have the greatest percent of households in error. 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. For comparison purposes, findings from FY 2007 are provided in parentheses. Note that while the percentage of households with component errors has generally stayed the same, the average dollar amount of component error has increased for all but three components.

Exhibit ES-5
Rent Components Responsible for the Largest Dollar Error
for Households with Rent Error
(FY 2007 Findings Are Provided in Parentheses)

Rent Component	Percentage of Households	Average Dollar Amount
Earned Income	23% (24%)	$3,047 ($2,887)
Pensions	21% (21%)	$2,598 ($2,075)
Other Income	14% (11%)	$2,260 ($2,437)
Public Assistance	6% (6%)	$1,986 ($2,492)
Asset Income	3% (4%)	$ 678 ($1,502)
Medical Allowance	21% (23%)	$1,202 ($972)
Child Care Allowance	4% (4%)	$2,442 ($2,128)
Dependent Allowance	5% (3%)	$715 ($622)
Elderly/Disabled Allowance	2% (3%)	$400 ($400)
No Rent Component Error	1% (1%)	$0
Total	100%	$2,091 ($1,957)*

* 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 (15 percent) was conducted to determine if these households were eligible for HUD housing assistance. Ninety percent of these households met all the eligibility criteria compared to 91 percent in FY 2007). There was only one newly certified household in the sample who was not income-eligible on the basis of the QC income determination.

Two 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). Six percent lacked the signed declaration forms or evidence accepted as proof of citizenship (an increase from 2% in FY 2007). These findings respond to study Objective 9 (estimate the percentage of newly certified tenants who were incorrectly determined eligible for program admission.

Executive Summary

Occupancy Standards. Study Objective 7 asks for the extent to which households are overhoused relative to HUD's occupancy standards. Thirteen percent of all households occupied a unit with too many or too few bedrooms in FY 2008, according to the guidelines used for this study. This number reflects a slight improvement after a downward trend beginning in FY 2005. Percent of households in units with correct number of bedrooms according to study guidelines: FY 2004 – 88 percent; FY 2005 – 87 percent; FY 2006 – 86 percent; FY 2007 – 85 percent; FY 2008 – 87 percent.

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 78 percent of the files for households for which 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 96 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.

Utility Allowances. For PHA-administered Section 8 Voucher households, the utility allowances found on the 50058 forms were compared to the utility allowance worksheets found in the tenant file, and to the utility allowance values calculated using the utility allowance schedules provided by the PHAs. For the first comparison, 87 percent of the utility allowance values matched. For the second comparison, 90 percent of the values matched. However, the fact that the values did not match, does not necessarily mean the utility allowance found on the 50058 form was incorrect.

Payment Standards. A special analysis was conducted to determine if the correct payment standards were used for Section 8 Voucher households. The payment standard found on the 50058 form was compared to the payment standard schedules provided by the PHA, and to the Fair Market Rent (FMR) for the appropriate geographical area. For the first comparison, 85 percent of the payment standards matched. For the second comparison, 96 percent of the payment standards found on the 50058 form fell within the 90 to 110 percent FMR band. As with the utility allowance analysis, the information needed to conduct the analysis was not always available. Therefore, the fact that the payment standards did not match does not necessarily mean the incorrect payment standard was used when calculating the amount of the tenant rent.

50058/50059 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 6 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.

PIC/TRACS Comparison. The 2401 households in the study were matched to the PIC/TRACS databases to respond to study Objective 14. Ninety-seven percent of these households (for both

owner-administered and PHA-administered households) were found in the PIC/TRACS databases. 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. However, the average gross dollars in error were higher for households where PIC/TRACS data were absent.

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 difference between PHA/projects that use automated rent calculation systems and those that do not. This is not surprising because nearly all PHA/projects use an automated rent calculation system.

"Tenant Characteristics, and Project Characteristics and Practices. In response to study Objective 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. The multivariate analysis did not reveal any particular relationship between rent errors and program type or specific projects.

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 project practices were found as significantly related to rent errors, including: overdue recertifications, transcription errors in processing household supporting documents, and the lack of verification from a third party. Consistent with findings from prior years, the analysis also identified a number of tenant characteristics that were predictive of rent error, namely: those with four or more sources of income and expenses, those with earned income, and those with other income sources.

E. 2000–2008 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 included the following—

♦ A Rental Housing Integrity Improvement Program (RHIIP) 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).

Executive Summary

♦ 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 (RIM) 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 Service's 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.

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 2008 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 2008 results is impressive. However, the percent of errors has remained stable since the FY 2004 study and the average dollars in error and the gross dollar error rate have only decreased slightly. On the basis of the current study's results, the following approaches to further reduce program administrator income and rent determination error rates are recommended:

Executive Summary

♦ HUD should continue its plans to use the Department of Health and Human Service's New Hires income matching database. 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 and to assist them in resolving discrepancies. Changes in policy should be reported to PHAs and owners in a timely fashion with the guidance, and local training wherever possible, needed to implement those changes in an accurate manner.

♦ HUD should continue to implement and expand the scope and depth of its onsite monitoring program by utilizing only experienced, knowledgeable HUD staff, or competent contract staff. 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.

♦ HUD should consider implementing policy that allows reexaminations, for selected populations, to be completed less often than annually.

In addition, the quality control studies could be modified to supplement the findings from this study and identify options for reducing error in the future. The following are possible methods to achieve this goal:

♦ 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.

♦ 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 seven 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.

♦ Expand contractor access to verification obtained through Social Security Administration and National Directory of New Hires data. 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. Expanded access to Federal databases

would allow the contractor to investigate discrepancies in the information obtained from multiple sources.

♦ 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, to do this the data must be available for the specific period of time covered by the study.

♦ Continue to expand existing computer systems and processes that further automate data collection, processing, and reporting functions. 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.

♦ 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. Although the primary goal of these studies is to measure rent errors, the 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.

I. Introduction

A. Purpose of the Quality Control for Rental Assistance Subsidies Determinations Study for FY 2008

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 2008. 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 eighth 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 four 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.

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[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.

I. Introduction

♦ 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).

♦ The final report of the sixth study, conducted by Macro was published in October, 2007 (data were collected in 2007).

♦ The final report of the seventh study, conducted by Macro was published in October, 2008 (data were collected in 2008).

Work on the current project began in May 2008. 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 2007 through October 2008.

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

I. Introduction

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.

I. Introduction

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 FY 2008 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations.*[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 546 distinct projects in 57 geographic areas across the United States and Puerto Rico. We sampled 200 projects from each major program type. In addition, data were collected for four households in one additional Public Housing project. This additional project was added to the sample to ensure, that given any unexpected circumstances, the sample would included a minimum of 2400 households. Unfortunately, one field interviewer was unexpectedly not able to complete her responsibilities; therefore the final data set includes responses from 2401 households in the 546 projects.

The tenant sample was selected from all households that were receiving assistance in Federal FY 2008. 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 Housing Authority of the County of San Bernardino Section 8 Voucher program had a household sample size of 20, and twelve other Housing Authorities' Section 8 Voucher programs had household sample sizes of 12 or greater, including those of New York City and Los Angeles. For additional information on the sampling procedures, see the *Sampling Plan for the FY 2008 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations.*[2]

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[1] Macro unpublished report to HUD dated July 18, 2008.

[2] Macro unpublished report to HUD dated July 7, 2008.

II. Methodology

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 2008. Field data collection began in February 2009 and ended in June 2009. 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 35 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 many 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

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[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).

II. Methodology

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.

As the data collection in the field began, 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, quality control practices used to review the work of this staff, and, for PHAs, optional questions regarding their policies on interim reviews.

Hiring and Training Field Interviewers. Sixty-four 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. Ten-day training sessions were held for 34 field interviewers who had not worked in the FY 2007 study, and a three-day training was conducted for 30 interviewers who had completed the FY 2007 study. The ten-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 2008 study.

II. Methodology

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. New York City Public Housing Authority uses a format for the 50058 that differs from this standard format. However, due to the large number of NYC Public Housing and Section 8 Voucher cases in the study, copies of the corresponding PIC 50058 forms for these cases were requested and used for data collection when available.[5] In other projects where the 50058 forms differed from the official HUD format, paper crosswalks were developed by Macro. Specially trained Macro staff examined the data elements on the atypical form and developed a plan that illustrated which fields corresponded to the standard 50058 form reflected in HDCS. There was one crosswalk needed for the 50059 Form. In addition, there were six owner-administered cases (representing two projects) where an older version of the 50059 form was found in the file. For PHA-administered households, paper crosswalks for the 50058 form were developed for 37 cases (representing four Section 8 Voucher, and 5 Public Housing projects).

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. Always copied were the 50058/50059 Forms, any earned income documentation, utility allowance calculation worksheets, and the most recent 9886/9887 Tenant Consent form from the file.   Field interviewers were also required 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), and any Earned Income Disregard documentation in the file, as well as documents to support Flat Rent selection. The photocopies were used to insure the accuracy of QC rent.

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[5] This was the first study where copies of the standard 50058 form for NYC Section 8 Voucher cases were obtained universally. Copies of the standard 50058 form were obtained for NYC Public Housing cases in the previous study. This improvement to the study process enhanced the ability to collect accurate information in a timely manner.

II. Methodology

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 recertification 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,[6] 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. In addition, release form cover letters were also signed by all adult members of the household to ensure that the third parties would be satisfied with the validity of the requests for verification. 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 February 2009 and June 2009 for the certification or annual recertification that occurred during FY 2008 (October 2007 through September 2008)[7]. 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 2008) 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

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[6] 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 recertification was completed.

[7] To account for delays between the time the work is completed by the PHA/project staff and the effective date of the recertification, actions effective in October 2008were included in the FY 2008 study.

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.

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 2008. 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 recertification 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 recertification 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 sporadic 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.

II. Methodology

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 was one household 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.[8]

♦ **Quality Control Rent:** The monthly rent calculated by Macro using all of the verified household information.[9]

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.

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[8] 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.

[9] 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.

II. Methodology

♦ 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.

♦ 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 identified in the Social Security match data for household members receiving Social Security or Supplemental Security Income (SSI) benefits 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. 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 recertification. 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.

♦   When working with Social Security and Supplemental Security Income (SSI) benefit information obtained through the Social Security Administration data match, sometimes discrepancies were found between that data and EIV printouts found in the tenant file. If the two sources of information were contradictory, the information found on the EIV printout (from the tenant file) was used in the QC calculation.

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 recertification. 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 sporadic 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 recertification 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.

II. Methodology

To identify households eligible for the earned income disregard, tenants were asked about training and self-sufficiency programs during the household interview. Forty-three 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 25 (of the 43) cases, neither the PHA nor the QC calculation gave an earned income disregard. In 8 cases the PHA and the QC calculation gave an earned income disregard. In 2 cases, the PHA gave an earned income disregard, but according to the QC data, the household member was entitled to a full training exclusion. There were an additional eight cases where the QC calculation indicated the household was entitled to an earned income disregard that was not provided by the PHA. These differences in the amount of the earned income disregard were considered as errors in this study as in the previous study. In studies prior to the FY 2007 study no error was attributed to differences in the EID calculations.

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, as well as 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. Between documentation in the tenant file and information from the household interview, 13 household members had indications of involvement in training programs. Five of these 13 were found to be eligible for the training program income exclusion. In one case, the income exclusion was applied by both the PHA and during the QC process. In two cases, the PHA gave the household a 50 percent EID exclusion, but based on third party verification, the QC calculation excluded the entire income. In the remaining two cases, the training program income exclusion was not given by the PHA, but was applied in the QC calculation.

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, 22 households representing four PHAs were entitled to permissible deductions. In four cases the percent of FICA tax (7.65%) was deducted from

gross earned income, and in 10 cases 11.45 percent of earned income was deducted from the gross earned income. In one of these 10 cases, an additional amount for medical insurance premiums paid by the tenant was also excluded. In seven cases either 10 percent of the earned income or a maximum of $1000 was deducted from the gross earned income. Plus an additional $300 was deducted for transportation. Finally, there was one case where the medical insurance premiums paid by the tenant were excluded from the gross annual 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 77 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. Twenty-one households (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 69 households were reviewed and in all but one case the PHA/project accounted for TANF benefits 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. Fifteen cases were reviewed and all were correctly receiving housing assistance.

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[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] At the end of this section, Exhibit III-2 presents a chart summarizing the objectives and providing information on where each objective is addressed within the report.

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 2006 studies are replicated in the FY 2007 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

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[1]See *Analysis Plan for the FY 2008 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations*, an unpublished Macro report to HUD, dated July 25, 2008 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 $CE = (12/.30) * RE = (120/3) \times RE = 40 * RE)$.

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.

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 administrative 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 analyses in the previous studies that identified bedroom size and program, and the proportion of

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

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	4	8
5	5	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 in Section 8 voucher households.

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.

Exhibit III-2
Summary of Study Objectives

#	Objective:	Where Objective is Addressed	
		Exec. Summary	Section IV
1	Identify the various types of rent errors, rent error rates, and calculate their variance estimates • Dollar Rent Error • Total Component Dollars in Error • Largest Component Dollar Error	p. iv – viii Exhibits 2 & 5	p. 4 -7; Exhibits 3 - 5 p. 13–14; Exhibits 13 - 14
2	Identify the dollar costs of the various types of errors. • Calculation errors • Consistency errors • Transcription errors • Incorrect determination of allowances and income sources • Overdue recertifications	p. vi - viii	p. 22 -24; Exhibits 22 - 23 p. 12 – 14; Exhibits 12 - 13 p. 10; Exhibit 9
3	Estimate the national-level costs for total error and major error types.	p. v; Exhibit 3	p. 4 - 7; Exhibits 3 - 6
4	Determine the relationship between errors detectable using the HUD 50058 and HUD 50059 Forms and total errors found in the study.	p. ix	p. 17 – 18; Exhibit 18
5	Determine whether error rates and error costs have statistically significant differences from program to program.	p. v	p. 7; Exhibit 5
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.	p. vi - viii	p. 12 – 24; Exhibits 12 - 23
7	Determine the extent to which households are over-housed relative to HUD's occupancy standards.	p. ix	p. 24 – 26; Exhibits 24
8	Provide information on the extent to which errors are concentrated in projects and programs.	p. v	p. 4 - 7; Exhibits 3 - 6
9	Identify the percentage of newly certified tenants who were incorrectly determined eligible for program admission.	p. viii	p. 8 – 10; Exhibits 8
10	For Section 8 voucher households, determine: • the extent to which rent comparability determinations are found in the tenant file, and indicate the method used to support the determination. • whether payment standards are within 90-110 percent of fair market rents • whether the correct utility allowances are being used.	p. ix	p. 26 – 39; Exhibits 25 - 34
11	Estimate the total positive and negative errors in terms of HUD subsidies	p. v; Exhibit 3	p. 10 – 12; Exhibits 10 - 11
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.	p. x	p. 46
13	Determine whether other tenant or project characteristics on which data are available are correlated with higher or lower error rates.	p. x	p. 46
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.	p. x	p. 39 – 42; Exhibits 35 - 38

IV. Findings

A. Overview

Analyses were conducted using weighted sample data for 2,401 households.[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 2008 data) are compared with the data collected in a previous study (referred to as the FY 2007 data). The data were collected and the analysis was completed for the FY 2007 study in 2008.

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, findings related to rent reasonableness determinations, utility allowance analysis, payment standard analysis, comparisons with PIC/TRACS data, analysis of the responses received from PHA/project staff regarding PHA/project practices (based on the Project Staff Questionnaire), and multivariate analysis. 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.

- ♦ Failure to conduct a recertification in a timely manner

- ♦ Failure to verify information.

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

IV. Findings

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.

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

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[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.

IV. Findings

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

Rent Component	Third party Verbal or In-Writing, Documentation, or EIV		Third party In-writing	
	2007	**2008**	**2007**	**2008**
Earned Income	90%	91%	76%	74%
Pensions	98%	98%	90%	87%
Public Assistance	94%	92%	73%	71%
Other Income	81%	86%	58%	65%
Asset Income	86%	87%	65%	69%
Child Care Expense	70%	83%	59%	76%
Medical Expense	75%	83%	48%	57%

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). 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 exhibit indicates, while primarily the percentage of households where the rent component was fully verified remained the same, for the child care and medical expense rent components, the percentage of households where the rent component was fully verified increased. It should be

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[3] If third party verification was not available, documentation from the tenant file was used to calculate the QC rent. If neither third party verification 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).

IV. Findings

noted that since the sample size for disability expenses is so small, the findings are not reliable national estimates and not included in Exhibit IV-1.

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 recertification, the rent was calculated correctly (within $5) in 63 percent of the households, a minor decrease from the percentage in FY 2007, 64 percent. There was an exact match of rent payment in 50 percent of households in FY 2008, again a slight decrease from 51 percent in FY 2007.

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
	2006	2007	2008	2008	2006	2007	2008	2008
Public Housing	65%	69%	66%	1.7%	54%	57%	53%	2.6%
PHA-administered Section 8	61%	62%	61%	2.7%	49%	50%	47%	2.6%
Total PHA-administered	62%	64%	63%	2.0%	51%	53%	49%	1.9%
Owner-administered	66%	64%	64%	2.1%	53%	48%	52%	2.3%
Total	64%	64%	63%	1.8%	51%	51%	50%	1.9%

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 2007. 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 $16 in FY 2008, the same average gross dollar error as in FY 2007. The total 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 7 percent in both FY 2008 and FY 2007.

IV. Findings

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	
	2007	**2008**	**2007**	**2008**	**2007**	**2008**
Public Housing	31%	34%	$13	$16	6%	7%
PHA-administered Section 8	39%	39%	$20	$18	9%	9%
Total PHA-administered	36%	37%	$17	$17	8%	8%
Owner-administered	36%	36%	$13	$12	6%	5%
Total	36%	37%	$16	$16	7%	7%

Source: Table 4 and 5, 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. Eighteen percent of all households paid in excess of $5 less than they should have in FY 2008. This finding is the same as in FY 2007. For the FY 2008 households, the average monthly payment error was $49, significantly lower than the mean of $57 in FY 2007 and the mean of $67 in FY 2006.

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

Administration Type				Average Dollar Amount of Error					
	Percent of Households In Error			For Underpayment Households (with errors > $5)			For All Households		
	2006	**2007**	**2008**	**2006**	**2007**	**2008**	**2006**	**2007**	**2008**
Public Housing	19%	16%	16%	$54	$57	$49	$10	$9	$8
PHA-administered Section 8	22%	19%	19%	$73	$67	$52	$16	$13	$10
Total PHA-administered	21%	18%	18%	$67	$64	$51	$14	$12	$9
Owner-administered	16%	19%	17%	$68	$44	$43	$11	$8	$7
Total	19%	18%	18%	$67	$57	$49	$13	$11	$9

Source: Table 2 and 4, Appendix C

As shown in Exhibit IV-4b, 19 percent of all households paid in excess of $5 more than they should have in FY 2008, compared to 18 percent in FY 2007, and 17 percent in FY 2006. The average monthly overpayment for households with overpayment error was $37 in FY 2008, up from $30 in FY 2007 and $36 in FY 2006.

IV. Findings

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)			For All Households		
	2006	2007	2008	2006	2007	2008	2006	2007	2008
Public Housing	15%	14%	18%	$31	$26	$45	$5	$4	$8
PHA-administered Section 8	18%	20%	19%	$42	$35	$41	$7	$7	$8
Total PHA-administered	17%	18%	19%	$39	$32	$42	$6	$6	$8
Owner-administered	17%	17%	19%	$31	$24	$25	$5	$4	$5
Total	17%	18%	19%	$36	$30	$37	$6	$5	$7

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
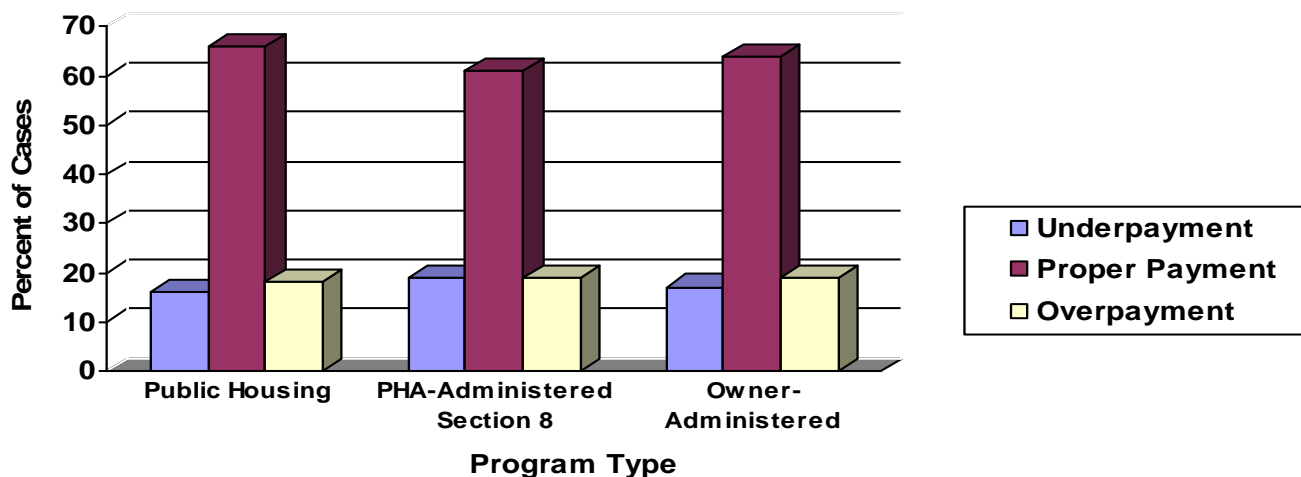
Gross and Net Dollars in Error. Exhibit IV-5 presents the gross and net average dollars in error and their associated standard error. To obtain the Gross and Net Rent Error, the dollar amount of overpayments is added to the dollar amount of underpayments, first using the absolute values for gross error, and then the arithmetic values for the net error. The net error measures the dollar cost of the errors and is -$2 (indicating a tenant underpayment) for FY 2008; the average gross dollar error is $16 for FY 2008 and represents the dollars associated with the errors (the magnitude of the errors).

IV. Findings

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	**2007**	**2008**	**2007**	**2008**	**2007**	**2008**	**2007**	**2008**
Public Housing	$13	$16	$1.89	$2.43	-$6	<$1	$2.04	$2.12
PHA-administered Section 8	$20	$18	$2.51	$2.42	-$6	-$2	$2.04	$1.47
Total PHA-administered	$17	$17	$1.86	$1.91	-$6	-$1	$1.72	$1.26
Owner-administered	$13	$12	$1.71	$1.15	-$4	-$3	$1.82	$1.04
Total	$16	$16	$1.52	$1.48	-$5	-$2	$1.57	$1.89

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. While the Gross Error Rates for FY 2008 are only slightly different from FY 2007, the Net Error Rates for all programs are significantly lower in FY 2008 than in FY 2007.

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

	Error Rates			
	Gross Error Rate		Net Error Rate	
Administration Type	**2007**	**2008**	**2007**	**2008**
Public Housing	5.6%	6.6%	-2.4%	.1%
PHA-administered Section 8	9.0%	8.8 %	-2.7%	-1.1%
Total PHA-administered	7.8%	7.9%	-2.6%	-.7%
Owner-administered	5.9%	5.4%	-2.1%	-1.2%
Total	7.2%	7.1%	-2.4%	-.8%

Source: Table 5, Appendix C

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.

IV. Findings

Figure IV-2: Case Type
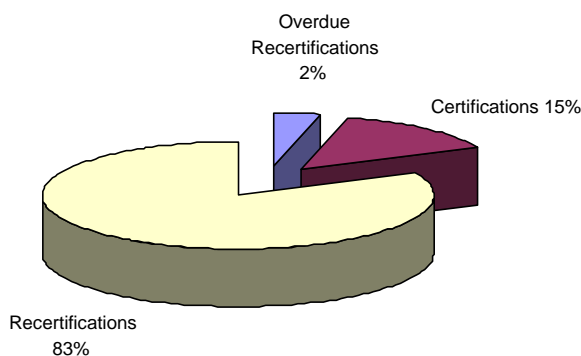
Source: Table 6, Appendix C

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 2008 83 percent of the households were recertifications, and 2 percent of the households were overdue recertifications, percentages unchanged from FY 2007. The findings indicate that there was a slight decrease in the total percentage of certifications from 16 percent in FY 2007 to 15 percent in FY 2008.

Exhibit IV-7
Certifications and Recertifications by Administration Type

	Certifications		Timely Recertifications		Overdue Recertifications		Row Total By Year*
Administration Type	**2007**	**2008**	**2007**	**2008**	**2007**	**2008**	
Public Housing	16%	14%	82%	83%	3%	3%	100%
PHA-administered Section 8	15%	15%	83%	83%	2%	1%	100%
Total PHA-administered	15%	14%	83%	83%	2%	2%	100%
Owner-administered	16%	16%	84%	83%			100%
Total	16%	15%	83%	83%	2%	2%	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 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. Only one household (according to the QC Rent calculation) did not fall within the low-income limit for total gross income.

IV. Findings

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, in FY 2008, six percent of the households had at least one household member for whom there was no verification of citizenship. In FY 2007, two percent of households failed to have citizenship verification for a household member. 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.

Two 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	
	2007	**2008**
Citizenship	98%	94%
Social Security Number	98%	98%
Consent Form	96%	95%
Low and Very Low Income	100%	100%
Meets All Eligibility Criteria	91%	90%

Source: Table 7, Appendix C

IV. Findings

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

	Percent of Households Meeting the Criteria		
Certification Criteria	**Public Housing**	**PHA-administered Section 8**	**Owner-administered**
Citizenship	94%	96%	92%
Social Security Number	95%	98%	99%
Consent Form	95%	93%	97%
Low and Very Low Income	99%	100%	100%
Meets All Eligibility Criteria	88%	92%	90%

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 ($6.4M) was divided by the total number of certifications for whom QC Rent could be calculated (.63M). The result is an underpayment average dollar amount of $10.

The data indicate that the amount of underpayment and overpayment dollar error in new certifications in FY 2008 is virtually the same as the amount for recertifications. As might be expected, there is a very large difference in the underpayment error for overdue and timely recertifications ($32 and $8, respectively). For overdue recertifications, underpayment average dollar error decreased from $53 in FY 2007 to $32 in FY 2008. Overpayment average dollar error increased for overdue recertifications, from $6 average overpayment dollar amount in FY 2007 to $14 in FY 2008.

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

	Underpayment Average Dollar Amount		Overpayment Average Dollar Amount	
Household Type	**2007**	**2008**	**2007**	**2008**
Certifications	$9	$10	$6	$8
Timely Recertifications	$10	$8	$5	$7
Overdue Recertifications	$53	$32	$6	$14
Total	$11	$9	$5	$7

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

IV. Findings

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		For Negative Subsidy Households (with errors > $5)		For All Households	
	2007	**2008**	**2007**	**2008**	**2007**	**2008**
Public Housing	14%	18%	$26	$45	$4	$8
PHA-administered Section 8	20%	19%	$35	$41	$7	$8
Total PHA-administered	18%	19%	$32	$42	$6	$8
Owner-administered	17%	19%	$24	$25	$4	$5
Total	18%	20%	$30	$37	$5	$7

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		For Positive Subsidy Households (with errors > $5)		For All Households	
	2007	**2008**	**2007**	**2008**	**2007**	**2008**
Public Housing	16%	16%	$57	$49	$9	$8
PHA-administered Section 8	19%	19%	$67	$52	$13	$10
Total PHA-administered	18%	18%	$64	$51	$12	$9
Owner-administered	19%	17%	$44	$43	$8	$7
Total	18%	18%	$57	$49	$11	$9

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

IV. Findings

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	
	2007	**2008**	**2007**	**2008**
Certifications	$6	$8	$9	$10
Timely Recertifications	$5	$7	$10	$8
Overdue Recertifications	$6	$14	$53	$32
Total	$5	$7	$11	$9

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 of the Impact of Component Errors			
Component	**File Data**	**QC Data**	**Dollar Error**
Earned Income	$2,200	$3,000	$800
Child Care Expense	$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 income, with an average error of $3,047, in the 23 percent of households in error where earned income is the largest component error. Medical expense was the next most frequent component, 21 percent of the errors with an average dollar error of $1,202. Pensions were a component of error 21 percent of the time, with an average associated dollar error of $2,598. Other income was the largest component of error in 14 percent of households in error, with the associated average dollar amount being $2,260.

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[5] The denominator in the percentage is the number of households with any component error, which was 37 percent of total households in FY 2008.

IV. Findings

Between FY 2006 and FY 2007, average dollar error amounts had decreased for most income Rent components. In FY 2008, average dollar error amounts have modestly increased in all components, except asset income, public assistance and other income. The largest component increase was in pensions which went up by over $500 in FY 2008 to an average dollar error amount of $2,598 compared to $2,075 in FY 2007. The largest component decrease was seen in asset income. In the 3 percent of households where asset income was the largest component in error, the average dollar amount of error was $678 in FY 2008 compared to $1,502 in FY 2007, a decrease of $824.

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	
	2007	**2008**	**2007**	**2008**
Earned Income	24%	23%	$2,887	$3,047
Other Income	11%	14%	$2,437	$2,260
Pensions	21%	21%	$2,075	$2,598
Asset Income	4%	3%	$1,502	$678
Public Assistance	6%	6%	$2,492	$1,986
Child Care Allowance	4%	4%	$2,259	$2,442
Medical Allowance	23%	21%	$972	$1,202
Dependent Allowance	3%	5%	$622	$715
Elderly/Disabled Allowance	3%	2%	$400	$400
No Rent Component Error	1%	1%	$0	$0
Total	100%*	100%*	$1,957	$2,091

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 percent of households in error stayed the same or changed only slightly for most Rent components. The Rent component with the largest increase in percent of households in error was other income, which rose from 11 percent in FY 2007 to 14 percent in FY 2008.

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 for all program types from FY 2007 to FY 2008, with Public Housing showing the largest increase of $688. There were also modest increases in the Average Largest Dollars in Error for all program types, except Section 8 Vouchers, in FY 2008. On average, the total for all programs increased by $134 between FY 2007 and FY 2008.

IV. Findings

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	
	2007	**2008**	**2007**	**2008**
Public Housing	$2,126	$2,814	$1,778	$2,263
PHA-administered Section 8	$2,688	$2,749	$2,281	$2,237
Total PHA-administered	$2,525	$2,769	$2,135	$2,245
Owner-administered	$1,907	$2,215	$1,583	$1,751
Total	$2,326	$2,597	$1,957	$2,091

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, six percent of all households with underpayment rent error had errors in earned income, six 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	7%	3%	6%	8%	2%	6%	7%	2%	5%
Pensions	7%	9%	8%	11%	12%	11%	5%	8%	6%
Public Assistance	3%	1%	2%	2%	1%	2%	2%	-	1%
Other Income	5%	4%	4%	3%	1%	3%	5%	2%	4%
Asset Income	3%	4%	3%	6%	6%	6%	2%	6%	3%
Dependent Allowance	2%	1%	1%	1%	1%	1%	3%	1%	2%
Elderly/Disabled Allowance	<1%	1%	1%	1%	<1%	1%	1%	2%	1%
Child Care Allowance	1%	<1%	1%	1%	<1%	1%	2%	1%	2%
Disability Allowance	-	--	-	<1%	--	<1%	--	--	-
Medical Allowance	3%	8%	5%	6%	11%	7%	5%	13%	7%
No Rent Component Error	<1%	<1%	<1%	36%	37%	37%	<1%	<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 (14 percent = 8 percent underpayment + 6 percent overpayment), followed by medical expenses (13 percent) and earned income (11 percent). The components with the highest error remain the same.

IV. Findings

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 two percent of all households in FY 2008. Four percent of the elderly/disabled households received an incorrect allowance, while less than one 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 four percent of all 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 (9 percent), either a dependent allowance was not given when it should have been or the wrong allowance amount was given. In total, 6 percent of all households had an incorrect allowance in FY 2008.

Exhibit IV-15
Elderly/Disabled Allowances and Dependent Allowances

Allowance	Elderly Allowance			Dependent Allowance		
	Non-Elderly/ Disabled Households	Elderly/ Disabled Households	All Households	Households Without Dependents	Households With Dependents	All Households
No Allowance	100%	--	43%	100%	--	56%
Incorrect Allowance	<1%	4%	2%	<1%	9%	4%
Correct Allowance	--	96%	55%	--	91%	39%
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

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[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).

IV. Findings

a program sponsor made the correct income determination, failure to document the determination 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 just over half of the cases with tenant underpayments (subsidy overpayments) and subsidy underpayments (tenant overpayments). The data regarding average dollar error indicate the tenant file more closely predicts the subsidy overpayments, but overestimates subsidy underpayments.

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	18%	19%	$49	$37
Error *Without* Income and Expense Items Identified during the Household Interview	10%	11%	$55	$63

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.

IV. Findings

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 FY 2006. 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	2%	5%	3%
Household Composition	7%	4%	6%	5%	5%	5%
Net Family Assets and Income	7%	3%	6%	6%	<1%	4%
Allowances and Adjusted Income	45%	3%	32%	11%	1%	8%
Family Rent and Subsidy Information	9%	2%	7%	3%	<1%	2%

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 6 percent of the households in FY 2008, a small decrease from FY 2007's figure of 7 percent. The QC error calculation found errors in 37 percent of the households in FY 2008, a minor increase from FY 2007'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 43 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 2007 and FY 2008.

IV. Findings

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

Rent Calculation	Percentage of Households Correct		Percentage of Households Incorrect	
	2007	**2008**	**2007**	**2008**
Using Information on the 50058/50059 Form	93%	94%	7%	6%
According to the QC Rent Calculation	64%	63%	36%	37%
Both 50058/50059 Form Calculation and QC Rent Calculation	60%	60%	3%	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. In FY 2008, the number of households where verification was not obtained by the PHA/owner remained unchanged or relatively the same in all Rent components. Public assistance showed the largest increase in lack of verification (11 percent in FY 2007 compared to 15 percent in FY 2008). Consequently the percentage of items which were verified by the PHA/owner was also unchanged or varied only slightly in all seven rent components between FY 2007 and FY 2008 with the largest percentage difference being the decrease in percentage of verification in public assistance (89 percent verified in FY 2007 compared to 85 percent in FY 2008). The percentage of items where the verification matched within $100 was slightly higher in FY 2008 compared to FY 2007 for four of the seven rent components, with child care expense verification showing the greatest increase in percent of cases matching the 50058/50059 within $100, from 67 percent in FY 2007 to 77 percent in FY 2008. Decreases in percent of verifications matching within $100 were evidenced in public assistance (from 75 percent in FY 2007 to 67 percent in FY 2008), earned income (from 68 percent in FY 2007 to 62 percent in FY 2008) and pension income (from 84 percent in FY 2007 to 83 percent in FY 2008).

IV. Findings

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	
	2007	2008	2007	2008	2007	2008
Earned Income	10%	12%	90%	88%	68%	62%
Pensions	4%	5%	96%	95%	84%	83%
Public Assistance	11%	15%	89%	85%	75%	67%
Other Income	25%	24%	75%	76%	61%	63%
Asset Income	7%	7%	93%	93%	84%	85%
Child Care Expense	12%	11%	88%	89%	67%	77%
Medical Expense	7%	7%	93%	93%	75%	76%

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 2008 results to the FY 2007 findings, the following changes are of note:

♦ In the **Public Housing** program, there were decreases in the verification rate for four out of the seven rent components in FY 2008 when compared to FY 2007 with the largest loss occurring in child care expense verification (81 percent in FY 2007 compared to 71 percent in FY 2008). Verification rate decreases were also seen in earned income (from 91 percent in FY 2007 to 86 percent in FY 2008, pension income (from 95 percent in FY 2007 to 92 percent in FY 2008) and public assistance (from 89 percent in FY 2007 to 87 percent in FY 2008). There was an increase in the percentage of verification rates in asset income, other income and medical expenses with the largest increase occurring in asset income verification (from 85 percent in FY 2007 to 89 percent in FY 2008). The degree to which the verifications matched the 50058 within $100 (indicating correct usage of verification data) fell in every Rent component except asset income. Child care expenses appeared to be the most problematic in FY 2008, with only 46 percent matching in FY 2008 compared to FY 2007's 66 percent of child care verifications matching the 50058 data within $100.

♦ In the **PHA-administered Section 8** programs, there were minor increases and decreases in percentages of all rent components verified in FY 2008 compared to FY 2007 The greatest gain was seen in pension income (from 94 percent verified in FY 2007 to 96 percent verified in FY 2008), and the greatest loss was seen in public assistance verifications (from 89 percent in FY 2007 to 85 percent in FY 2008). Verifications were used more often in most cases in FY 2008 than in FY 2007 as seen in the degree to which verification matched within $100. Greatest gains in verifications matching data within $100 were in child care expenses (from 66 percent in FY 2007 to 78 percent in FY 2008) and in asset income (from 87 percent in FY 2007 to 91 percent in FY 2008). Between FY 2006 and FY 2007 there had been an upward trend in degree to which verifications were used and matched data. In general this

IV. Findings

trend continues in FY 2008 with modest increases. Two exceptions to this trend were drops in public assistance verifications matching within $100 (public assistance fell to its FY 2006 level of 60 percent verification matching from a high of 74 percent in FY 2007) and earned income matching (from 70 percent in FY 2007 to 59 percent in FY 2008, well below the FY 2006 level of 67 percent).

♦ In the **owner-administered** programs, increases in percentages verified were seen in three of the seven rent components in FY 2008. Between FY 2006 to FY 2007 verification rate for all rent components had increased, except child care which remained the same. In FY 2008, the greatest verification rate increase was child care expense which went from 92 percent verified in FY 2007 to 100 percent verified in FY 2008. Modest increases were evident in medical expense verification and other income verification. The greatest decreases occurred in public assistance verification (90 percent in FY 2007 compared to 86 percent in FY 2008) and asset income (96 percent in FY 2007 compared to 92 percent in FY 2008). Verification rate also dropped slightly for earned income and pension income between FY 2007 and FY 2008. However, the percentage of verifications actually *used* in rent calculation increased for most components, except pension (minus one percent) and asset income (minus two percent), with the greatest increase in verification use occurring in child care expense from 69 percent verification matching the 50059 data in FY 2007 to 92 percent matching in FY 2008. Earned income verifications matched 70 percent of the time in FY 2007 compared to 77 percent in FY 2008. One to two percent increases in matched verifications were seen in public assistance, other income and medical expenses in FY 2008.

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

| | PHA-administered | | | | | |
| | Public Housing | | Section 8 | | Owner-administered | |
Rent Component	Verified	Matched**	Verified	Matched**	Verified	Matched**
Earned Income	86% (91%)	54% (62%)	88% (89%)	60% (70%)	91% (93%)	77% (70%)
Pensions	92% (95%)	76% (83%)	96% (94%)	85% (82%)	96% (97%)	85% (86%)
Public Assistance	87% (89%)	66% (69%)	85% (89%)	60% (74%)	86% (90%)	80% (82%)
Other Income	66% (65%)	51% (53%)	80% (78%)	66% (63%)	77% (76%)	66% (64%)
Asset Income	89% (85%)	79% (77%)	96% (95%)	91% (87%)	92% (96%)	84% (86%)
Child Care Expense	71% (81%)	46% (66%)	89% (89%)	78% (66%)	100% (92%)	92% (69%)
Medical Expense	93% (92%)	68% (74%)	93% (96%)	80% (79%)	94% (92%)	76% (74%)

Source: Table 15g, Appendix C   * Findings from FY 2007 are in parentheses.
                                        ** Matched within $100

Comparing across program types in FY 2008, pension income, medical expense and asset income are the most frequently verified rent components. Pension income verification rate is 92 percent in Public Housing, 96 percent in Section 8 programs, and 96 percent in owner-administered programs. Medical expenses are verified at a rate of 93 percent in both Public Housing and Section 8 programs and 94 percent in owner administered programs. Asset income

IV. Findings

verification rate is 89 percent in Public Housing, 96 percent in Section 8 programs and 92 percent in owner administered programs. Other income shows the lowest verification rates across program types, 66 percent in Public Housing, 80 percent in Section 8 programs and 77 percent in owner administered programs.

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 Rent components was missing in at least 58 percent of all households with QC error.

In general, between FY 2007 and FY 2008, data from PHA-administered programs show there were modest decreases in households where error was related to missing verification indicating a slight increase in other factors contributing to error. However, the largest decrease, in disability expenses (from 100 percent in FY 2007 to 76 percent in FY 2008), relates to the very small numbers of cases with disability error. Earned income showed a decrease, from 74 percent missing verification in FY 2007 to 68 percent missing verification in FY 2008. There were one to three percent decreases in missing verification in pension, medical expense, asset income, and public assistance income components with error. The only component increase in verification missing in households with QC error was child care expense, which rose from 82 percent of households with QC error lacking verification in FY 2007 to 90 percent in FY 2008.

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

	50058				50059			
	Households with QC Error		Households with QC Errors and Missing Verification		Households with QC Error		Households with QC Errors and Missing Verification	
Rent Component	2007	2008	2007	2008	2007	2008	2007	2008
Earned Income	13%	14%	74%	68%	6%	6%	71%	78%
Pensions	12%	12%	85%	82%	15%	17%	81%	80%
Public Assistance	3%	4%	59%	56%	2%	1%	85%	90%
Other Income	7%	9%	75%	75%	4%	6%	81%	89%
Asset Income	5%	5%	81%	78%	11%	10%	77%	81%
Child Care Expense	2%	3%	82%	90%	2%	1%	71%	70%
Disability Expense	1%	<1%	100%	76%	0%	1%	--	100%
Medical Expense	11%	10%	90%	87%	20%	22%	89%	91%
No Component Error	66%	65%	--	--	65%	66%	--	--

Source: Tables 16a and 16b, Appendix C

In owner-administered cases in FY 2008, there were minor increases in percentage of cases in which error was associated with missing verification in all rent components, except pension and child care expense, which both decreased by one percent compared to FY 2007. Again the 100

percent increase in disability expense error relative to missing verification must be discounted due to the small sample number. Minor increases were most evident in other income, which showed an 8 percent increase in errors with missing verification, (81 percent in FY 2007 compared to 89 percent in FY 2008), earned income, (71 percent in FY 2007 compared to 78 percent in FY 2008) and public assistance (85 percent in FY 2007 compared to 90 percent in FY 2008).

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 most 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 66 percent of households and any type of administrative error (transcription, consistency, calculation, or overdue recertifications) are associated with QC Rent Error in 75 percent of the households.

When the findings in this exhibit are compared with the FY 2007 findings, there is significant increase in percentage of households with QC rent for households with transcription error (40 percent in FY 2007 compared to 53 percent in FY 2008) and a small increase in households with consistency error (32 percent in FY 2007 compared to 35 percent in FY 2008). There were also modest decreases in the households for recalculated 50058/50059 error, households with other calculation error (12 percent in FY 2007 compared to 8 percent in FY 2008), and households with income calculation error (4 percent in FY 2007 compared to 2 percent in FY 2008).

In addition, both the average dollar error for households with QC rent error and the average dollar error for recalculated 50058/50059 error tend to increase relative to FY 2007 with the largest increases for households with recalculated 50058/50059 error. The largest increase by specific error type is other calculation error (average dollar error is $44 in FY 2007 and $78 in FY 2008). For households with QC rent error the largest increase in average dollar error occurred with overdue recertifications ($78 in FY 2007 and $86 in FY 2008). Despite an overall upward trend in average dollar error, significant decreases in average dollar error amounts were seen in households with recalculated 50058/59 error in income calculation error ($94 in FY 2007 and $1 in FY 2008) and overdue recertifications ($78 in FY 2007 and $12 in FY 2008).

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 allowance calculation errors is $92, because many of these cases have a large rent error (which may have nothing to do with the allowances) and the number of cases with allowance calculation error is small (7 percent of households in error), the average dollar error is large.

IV. Findings

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

Error Type Based on 50058/50059 Recalculation	Households with Recalculated 50058/9 Error				Households with QC Rent Error			
	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%	4.2%	$32	$10.78	66%	2.0%	$45	$3.53
Households with Consistency Error	35%	4.7%	$41	$17.60	20%	2.0%	$49	$5.90
Households with Allowance Calculation Error	7%	3.0%	$92	$27.89	3%	.6%	$46	$9.64
Households with Income Calculation Error	2%	1.3%	$1	$0	2%	0.6%	$45	$16.73
Households with Other Calculation Error	8%	3.3%	$78	$28.65	7%	1.5%	$55	$6.83
Overdue Recertifications	2%	1.5%	$12	$3.09	2%	0.6%	$86	$19.21
Unduplicated Count, Any Type of Administrative Error	69%	4.4%	$27	$8.60	75%	1.7%	$45	$3.25
Total Households	100%		$28	$7.23	100%		$43	$2.59

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 50058/50059 error. Percent of households in error remained stable when compared to FY 2007 for all error types. Gross average dollars in error decreased for other calculation errors from $34 in FY 2007 to $25 in FY 2008 and for overdue recertifications from $59 in FY 2007 to $47 in FY 2008; otherwise the gross average amounts by error type are comparable to FY 2007. Net average dollars in error decreased for all error types, except for income calculation errors (increase from -$4 in FY 2007 to $9 in FY 2008) and allowance calculation errors (from $0 in FY 2007 to $3 in FY 2008).

IV. Findings

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	43%	$26	$2.66	-$2	$1.91
Consistency Errors	18%	$21	$3.24	-$2	$2.41
Calculation Errors—Allowances	2%	$26	$6.88	$3	$7.97
Calculation Errors—Income	2%	$16	$6.60	$9	$7.61
Calculation Errors—Other	6%	$25	$4.93	-$9	$5.82
Overdue Recertifications	2%	$47	$22.60	-$19	$19.04
Any Administrative Errors	54%	$23	$2.69	-$3	$2.28
Total	100%	$16	$1.48	-$2	$.89

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.

Thirteen percent of all households occupied a unit with too many or too few bedrooms in FY 2008, according to the guidelines used for this study. This number is down slightly from FY 2007, where fifteen percent of all households occupied a unit with an incorrect number of bedrooms. Fifteen percent of Public Housing households, eight percent of households, and sixteen percent of Housing Choice voucher program households were over- or under-housed in FY 2008.

IV. Findings

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					
	2007	2008	2007	2008	2007	2008	2007	2008
0	96%	96%	90%	100%	100%	98%	96%	98%
1	99%	100%	100%	98%	100%	99%	100%	99%
2	71%	77%	74%	73%	75%	79%	74%	75%
3	81%	75%	77%	86%	93%	77%	81%	83%
4	55%	64%	58%	68%	44%	21%	56%	63%
5+	19%	48%	58%	74%	--	--	43%	66%
All Units	83%	85%	81%	84%	93%	92%	85%	87%

Source: Table 19, Appendix C

Exhibits IV-24a and IV-24b show the percentage of households that met these guidelines for each bedroom size for FY 2007 and FY 2008, respectively. The shaded cells indicate the percentage of households that fall within study guidelines.

Exhibit IV-24a
Percentage of All Households in *FY 2007* by
Number of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2007							
	Number of Household Members							
	1	2	3	4	5	6	7	8+
0	96%	4%	--	--	--	--	--	--
1	90%	10%	<1%	--	<1%	--	--	--
2	25%	45%	20%	8%	1%	--	--	--
3	6%	11%	29%	30%	17%	5%	2%	1%
4	1%	2%	6%	32%	27%	12%	13%	5%
5	8%	6%	10%	16%	5%	9%	11%	--

Source: Table 19a, Appendix C

IV. Findings

Exhibit IV-24b
Percentage of All Households in *FY 2008* by
Number of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2008 Number of Household Members							
	1	2	3	4	5	6	7	8+
0	98%	2%	--	--	--	--	--	--
1	90%	9%	1%	--	-	--	--	--
2	23%	42%	27%	7%	2%	<1%	--	--
3	6%	10%	35%	30%	15%	3%	1%	1%
4	1%	3%	12%	20%	31%	15%	5%	3%
5				5%	30%		27%	39%

Source: Table 19a, Appendix C

F. 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. Each of the 143 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 789 voucher households in the tenant sample to locate the documents supporting the rent reasonableness certification. For new certifications (there were 000)[7] field interviewers searched the file for the initial rent reasonableness certification and recorded its date. For annual recertifications (000), 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-25a).

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[7] Beginning in FY 2007, portability move-ins were classified as annual recertifications. In FY 2006 they were categorized as new admissions.

IV. Findings

Sixty two 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	2007 Number	2007 Percent	2008 Number	2008 Percent
Unit-to-Unit Comparison	78	53%	88	62%
Unit-to-Market Comparison	12	8%	14	10%
Point System	17	12%	22	15%
Other or Rent Control	9	6%	3	2%
No Single Predominant Method	26	18%	13	9%
Other	0	0	3	2%
No information	4	3%	0	0%
Total	146	100%	143	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. Ten percent of housing authorities reported using this method solely or primarily. However, twenty six percent of the PHAs used the unit-to-market method in combination with other methods. Fifteen percent of housing authorities indicated that their primary method of making rent reasonableness determinations was based on a point system; Seven 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.

Nine percent of the PHAs used a combination of methods equally, meaning no predominant method was identified. Two 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.

IV. Findings

Exhibit IV-25b
PHAs using Rent Reasonableness Method Combinations (unweighted)

	100 % Method	Predominant Method	Equivalent Method	Lesser Component
Unit-to-Unit				
Total times cited = 115	**50**	**38**	**12**	**15**
Unit-to-Unit and Unit-to-Market		23	7	14
Unit-to-Unit and Point Ranking		6	2	8
Unit-to-Unit and Professional Judgment		25	3	4
Unit-to-Market				
Total times cited = 51	**10**	**4**	**9**	**28**
Unit -to-Market and Unit-to-Unit		3	8	26
Unit-to-Market and Point Ranking		1	1	5
Unit-to-Market and Professional Judgment		1	0	14
Point Ranking				
Total times cited = 32	**13**	**9**	**3**	**7**
Point Ranking and Unit-to-Unit		7	2	7
Point Ranking and Unit-to-Market		3	1	3
Point Ranking and Professional Judgment		3	1	4
Other and Rent Control				
Total times cited = 3	**0**	**3**	**0**	**0**
Other and Unit-to-Unit		3	0	0
Other and Unit-to-Market		0	0	0

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 one hundred fifteen PHA's and is used as a sole method of rent reasonableness determination in fifty Section 8 voucher programs. It is the predominant method in thirty eight voucher programs. In twenty five of the thirty eight programs, project staff report using professional judgment as a component of their rent reasonableness methodology. Twenty three of these thirty eight voucher programs include unit-to-market analysis and six include point ranking. Without identifying specific mixes and proportions, one can see that the thirty eight 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.

Findings Pertaining To Rent Reasonableness Documentation Found In Tenant Files for New Admissions. In FY 2008, 88 percent of new admission files contained rent reasonableness documents compared to 71 percent in FY 2007 and 88 percent in FY 2006 (see Exhibit IV-26a).

IV. Findings

Exhibit IV-26a
Rent Reasonableness Documentation for New Admissions

Status	2006	2007	2008
Determination Documented	88%	71%	88%
No Determination Documented	12%	29%	12%
Total	100%	100%	100%

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, 61 percent contained a statement signed by the PHA staff certifying that the rent is reasonable (see Exhibit IV-26b).

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

Type	2006	2007	2008
A signed statement certifying that the rent is reasonable	68%	61%	61%
Comparable units documented by the property owner in section 12a of HUD 52517	10%	11%	16%
Comparable units documented on other documents	16%	24%	16%
Any other reference to rent reasonableness	6%	4%	8%
Total	100%	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.

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

Determination-Certification Chronology	2006	2007	2008
More than 4 months before lease date	3%	5%	<1%
Up to 4 months before lease date	75%	77%	79%
After lease date—up to 2 months	9%	10%	4%
After lease date—greater than 2 months	2%	5%	1%
Date missing	12%	3%	16%
Total	100%	100%	100%

IV. Findings

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 decreased from FY 2007 (15 percent) to FY 2008 (5 percent).

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 2008, 78 percent of these case files had certified rent reasonableness documents within the past two years compared to 65 percent in FY 2007 (see Exhibit IV-28a).

Exhibit IV-28a
Rent Reasonableness Documentation for Annual Recertifications

Status	2006	2007	2008
Determination Documented	69%	65%	78%
No Determination Documented	31%	35%	22%
Total	100%	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 within the last two years, 55 percent contained a statement signed by the PHA staff certifying that the rent is reasonable (see Exhibit IV-28b).

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

Type	2006	2007	2008
A signed statement certifying that the rent is reasonable	68%	63%	55%
Comparable units documented by the property owner in section 12a of HUD 52517	4%	10%	10%
Comparable units documented on other documents	16%	22%	26%
Any other reference to rent reasonableness	12%	5%	9%
Total	100%	100%	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 2008, 11 percent of the rent reasonable determinations were made after rents had been established, compared with 9 percent in FY 2007(see Exhibit IV-29).

IV. Findings

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

Determination-Certification Chronology	2006	2007	2008
More than 4 months before lease date	8%	15%	7%
Up to 4 months before lease date	47%	42%	59%
After lease date—up to 2 months	3%	2%	5%
After lease date—greater than 2 months	19%	7%	6%
Date missing	23%	34%	23%
Total	100%	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. While timely reviews have increased in FY 2008, the proportion of cases lacking rent reasonableness documentation is still high (12 percent of new admissions and 22 percent of Annual Recertifications). 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.

G. Utility Allowance Analysis

As part of the FY 2008 HUDQC study, two separate analyses were conducted of the utility allowances provided to households assisted through the PHA-administered Section 8 Voucher program. The first analysis focused on whether there was documentation in the tenant file indicating how the utility allowance amount used in rent determination was calculated, and whether those documents were used correctly in calculating the utility allowance amounts. The second analysis focused on identifying discrepancies between the utility allowance on the 50058 form, and the utility allowance determined by using the appropriate Utility Allowance Schedule provided by the PHA staff. These schedules often varied by unit type, effective date of recertification and location within a county.

Documentation of Utilities and Utility Allowance Values. To support these analyses, PHAs were asked to provide information about the forms used to document and calculate the utility allowance, and to provide the utility allowance schedules used for actions effective in Federal FY 2008. In addition, field interviewers were asked to copy documents showing calculation of utility allowances found in tenant files at the PHA office.

One-hundred and forty-three (143) PHA-administered Section 8 Housing Choice Voucher "projects"[8], administered by 126 housing authorities (several of which administered the voucher program in multiple counties) participated in the 2008 HUDQC study. According to information

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[8] For purposes of this study, a project for the Section 8 Voucher Program is defined as a PHA/county combination. Therefore, if a PHA administers vouchers in more than one county, that PHA could be represented in this study by more than one "project".

IV. Findings

provided at the PHA level, less than half (48%) of the projects used HUD Form 52517 (Request for Tenancy Approval) as the official source for identifying the utilities for which the households were responsible. This is down from the FY 2007 HUDQC study when slightly more than half (51%) of the projects used the HUD Form 52517. Also a lower majority (57%) in FY 2008 and (73%) in FY 2007 of the projects used HUD Form 52667 (Schedule of Allowances for Tenant Furnished Utilities) to calculate the value of the utilities paid by the tenants. Exhibit IV-30a provides the information on the type of documents used as the official source for identifying utilities for which the households were responsible, as well as the type of documents used to calculate the value of the utilities paid by the tenants.

Exhibit IV-30a
Types of Documents Used by PHAs to Identify Utilities and Calculate the Utility Allowance Value

Type of Document Used for:	Identifying Utilities				Calculating the Utility Allowance Value			
	FY 2008		FY 2007		FY 2008		FY 2007	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
HUD Form 52517 (Tenancy Approval)	69	48%	75	51%	6	4%	8	6%
HUD Form 52641 (HAP Contract)	8	6%	13	9%	1	1%	2	1%
HUD Form 52667 (Allowance Schedule)	9	6%	17	12%	81	57%	107	73%
Other (Lease, Reports, Comparisons etc)	7	5%	20	14%	30	21%	25	17%
Various *combinations of above*	45	35%	21	14%	25	18%	4	3%
Total	143	100%	146	100%	143	101%	146	100%

Data in this exhibit are not weighted   *101% is due to rounding

Seven hundred and ninety-two (792) households, assisted through the PHA-administered Section 8 Housing Choice Voucher Program, participated in this study. Field interviewers were able to locate worksheets or other documents indicating how the utility allowance was calculated for 699 households (88%). Of the 93 households for whom no utility allowance documents were found in the household file, 42 of them were for households receiving assistance through the New York City Housing Authority (where the utility allowance is calculated electronically and no paper document is kept in the paper file).

Comparison of 50058 Utility Allowance Values to Worksheets Found in the Household File.
For each household for whom utility allowance documentation was available, the utility allowance amount from the 50058 was matched with the amount on the utility allowance worksheet obtained from the tenant files. For 87 percent of the households (610 units), the 50058 utility allowance amount matched the worksheet amount. This included 50 households that did not have any utility expenses because either they were included in the rent or the owner paid all utilities. For five percent of the households, the worksheet provided was for the incorrect period of time or was missing critical information. Hence, we could not determine whether the utility allowance amount used in the rent calculation was correct. In the remaining 7 percent of the households there were discrepancies between the amount on the worksheet and the 50058 amount. Exhibit IV- 30b provides a summary of the findings from the comparison between the utility allowance listed on the 50058 and the amount on the worksheets found in tenant files.

IV. Findings

Exhibit IV-30b
Comparison of Utility Allowance on the 50058 to the Utility Allowance Worksheet

Number	Percent	Outcome
610	87%	50058 (AC) amount matched with Worksheet (WS) amount
34	5%	Worksheet in file for incorrect period of time or is missing critical information
17	2%	Discrepancy due to math error or other clerical errors
38	5%	Discrepancy – Unable to determine reasons
699	100%	Total

Data in this exhibit are not weighted.

Comparison of 50058 Utility Allowance Values to the Correct (QC) Utility Allowance Value. The QC utility allowance was calculated using two steps. In the first step, the utilities for which the tenants were responsible were identified by using documents – usually PHA utility allowance worksheets – found in tenant files that indicated those specific utilities. In the second step, the identified household's specific utilities were mapped onto the utility allowance schedule, and the total summed to determine the QC allowance amount.

The utility allowance amount on the 50058 form was matched with the QC utility allowance amount. As in the previous comparison, we were unable to calculate the QC utility allowance in 7 percent (56 households) of the cases because their worksheet was not available and consequently the specific utilities the household paid for could not be identified. Furthermore, we were unable to calculate the QC utility allowance in 5 percent of the cases because the worksheets in the files did not include specific utilities or other critical information needed for QC allowance calculation; and in another 16 percent because the appropriate Utility Allowance Schedule was not available. Exhibit IV-30c below differentiates between the cases whose QC allowance amount was able to be calculated and lists the reasons and number of cases whose QC utility allowance amount was not able to be calculated.

Exhibit IV-30c
Availability of all Information to Enable QC Utility Allowance Calculation

Number	Percent	Outcome	QC UA amount calculated
574	72%	Appropriate worksheet and schedule available	Yes
56	7%	UA worksheet or other comparable document not available	No
126	16%	Appropriate UA schedule not available	No
36	5%	Worksheet was missing critical information	No
792	100%	Total	

Data in this exhibit are not weighted.

For the 574 cases whose QC utility allowance amounts were calculated, the QC utility allowance was compared to the 50058 utility allowance amounts. In 90 percent of those households, the 50058 and QC utility allowance values matched. The remaining (discrepant) 10 percent were categorized into 2 broad categories. One of these categories fell under administrative errors,

IV. Findings

whereas for the remaining cases, we were unable to determine the reason for the discrepancy. Exhibit IV-30d below presents the findings from this analysis.

Exhibit IV-30d
QC Utility Allowance Compared to 50058 Utility Allowance

Number	Percent	Outcome
516	90%	QC UA matched amount on 50058
21	4%	Discrepancy due to math error / transfer error
37	6%	Discrepancy – unable to determine reasons
574	100%	Total

Data in this exhibit are not weighted.

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Note: When calculating the QC rent, the utility allowance amount from the 50058 was used; <u>not</u> the QC allowance amount calculated for this exercise.

H. Payment Standard Analysis

As part of the FY 2008 HUDQC study, a special analysis was conducted to determine if PHAs are using the correct Payment Standards. This special analysis was conducted independently of the rent calculation error findings presented elsewhere in this chapter, and the Payment Standard Analysis did not affect the rent calculation determinations. 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 was compared to the Fair Market Rent 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 their Payment Standards, errors in tenant rent determinations will result.

There are a variety of ways PHAs may apply Payment Standards incorrectly resulting in errors in tenant rents. A PHA may have several Payment Standards for different geographic 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 Payment Standard for the unit size (number of bedrooms in the unit) when the family-size is greater than the payment standard for the unit size. Other potential areas for error include whether a PHA has been authorized to use FMRs based on the 50th percentile of the rents in the area; whether the PHA has been authorized to use Success Rate Payment Standards based on the 50th 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 the family composition requires an interim recertification with several family members moving in or out,

IV. Findings

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 schedule (QC) provided by the PHA. For all voucher households 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

♦ the determination and application of any exception listed on the information provided by the 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. The 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 historic 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-examination.

♦ PHAs whose computer software systems filled the Payment Standard field on the 50058 Form with the lesser of the Gross Rent or the Payment Standard.

There were 792 Housing Choice Voucher households in the study. For the majority (85%) of the households, the AC Payment Standard matched the QC Payment Standard. There were 122 households (15%) with discrepant Payment Standards. Sixty-three (52%) of the households with discrepant Payment Standards were elderly or disabled households. Elderly and disabled households are identified separately because they are often entitled to individual exemptions to the Payment Standard rules. One hundred fourteen (93%) of the total discrepancies were attributable to one of seven common reasons, as listed in Exhibit IV-31. The most typical reason for a discrepancy between the AC and QC Payment Standard was that the project staff used the

IV. Findings

incorrect Payment Standard. Also, the use of either the incorrect number of bedrooms or household members accounted for a cumulative 15% of the discrepancies found. Exhibit IV-31 below summarized the number and percent of households 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 with Discrepancies
Incorrect Number of Bedrooms/Household Member was Used	6	12	15 %
Incorrect Payment Standard Schedule was Used	26	22	39 %
Fair Market Rent was Used Instead of the Payment Standard	8	8	13 %
Gross Rent was Used Instead of the Payment Standard	3	10	11 %
Project Staff Used Enhanced Rate for Disabled/Elderly Tenant	5	0	4 %
Project Staff Made a Typo	3	2	4 %
Section 12 of the 50058 was Incomplete or Missing	6	2	7 %
Other Reasons – Overdue Recertification, 105% of FMR Used, Software Limitations, Original Payment Standard Over 110 %.	6	3	7 %
Total	**63**	**59**	**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 Geographic Area. The second analysis consisted of comparing the Payment Standard on the 50058 Form (AC) to the Fair Market Rents (FMR) for the appropriate geographic area. The Payment Standard for 728 of the households (92%) fell within the 90 to 110 percent FMR band; 48% of the households that fell outside of the 90 to 110 percent band used an amount that exceed 110 percent of the FMR, and 52% of the households used an amount that was less than 90% of the FMR. Exhibit IV-32 below summarizes the number and percent of households by the relationship of the Payment Standard to the acceptable FMR.

Exhibit IV-32
Number of Households Meeting Payment Standard Requirements

	Fair Market Rent			Percent of Cases Outside the 90–110% Band
	Under 90%	90–110 %	Over 110%	
Non-Elderly or Disabled	14	388	17	4 %
Elderly or Disabled	18	340	15	4 %
Payment Standard Compared with Fair Market Rent	**32**	**728**	**32**	**8 %**

IV. Findings

The analysis of the households that fell outside the 90 to 110 percent FMR band indicated that 88% of households fell outside of the 90 to 100 percent band of the FMR for six general reasons; project staff calculated Payment Standards that fell outside the accepted FMR limit, Gross Rent was used instead of the established Payment Standard; the incorrect number of bedrooms was used when determining the appropriate Payment Standard, the incorrect Payment Standard was used, Project Staff used the FMR for a more costly region; or Section 12 of the 50058 was incomplete or missing. Exhibit IV-33 summarizes the number and percent of households that fall outside the 90 to 110 percent FMR band by category.

Exhibit IV-33
Details of Cases Falling Outside 90 – 110% of the Fair Market Rent

Reason	Fair Market Rent		Percent of Cases Outside the 90 to 110 % Band
	Under 90%	Over 110%	
Project Staff Calculated Payment Standards that Fell Outside the Accepted FMR Limit	2	16	28 %
Gross Rent Instead of the Payment Standard was Used	5	2	11 %
Incorrect Number of Bedrooms was Used	9	5	22 %
Incorrect Payment Standard was Used	7	0	11 %
Section 12 of the 50058 was Incomplete or Missing	5	1	9 %
Project Staff Used the FMR for a More Costly Region	0	4	6 %
Other Reasons – Typo, Enhanced Rate for Disabled/Elderly Tenant, HA Software Limitations, Overdue Recertification	4	4	13 %
Total	**32**	**32**	**100 %**

Comparison of the FY 2007 to the FY 2008 Payment Standard Analysis Results. The same Payment Standard Analysis was conducted for the FY 2007 study. Of the 789 Housing Choice Voucher households in the FY 2007 study, the AC and the QC Payment Standard matched for 728 (92%) households. Additionally, 32 (4%) households had Payment Standards that did not fall within the 90 to 110 percent Fair Market Rent band. Of those 32 households, 26 cases were not granted any exemptions. Therefore, a total of 3 percent of the Housing Choice Voucher households included in the FY 2007 did not meet HUD's Payment Standard requirements.

Of the 792 Housing Choice Voucher households in the FY 2008 study, the AC and the QC Payment Standard matched for 670 (85%) households. Additionally, 64 (8%) households had Payment Standards that did not fall within the 90 to 110 percent Fair Market Rent band. Of those 64 households, no cases were granted exemptions. Therefore, a total of 8 percent of the Housing Choice Voucher households included in the FY 2008 did not meet HUD's Payment Standard requirements. Exhibit IV-34 below summarizes the results from the FY 2007 and FY 2008 Payment Standard Analysis.

IV. Findings

Exhibit IV-34
Comparison of the FY 2007 to FY 2008 Payment Standard Analysis

	FY 2007		FY 2008	
	Number	Percent	Number	Percent
Housing Choice Voucher Sample	789		792	
Households where the AC and QC Payment Standard Did Not Match	61	8 %	122	15 %
Households where the AC Payment Standard Did Not Meet the 90 to 110 Percent of FMR Threshold	31	4 %	64	8 %
Households that Were Not Exempt from the 90 to 110 Percent of FMR Threshold – <u>Did Not Meet HUD's Payment Standard Requirements</u>	26	3 %	64	8 %

Data provided in this exhibit are not weighted.

I. 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 2008, an attempt was made to use historical PIC/TRACS files to identify the 50058/50059 data for the specific effective date and type of action for which study data were collected.

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 1,714 of the 2,401 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 97 percent of the households in PHA-administered projects; TRACS records were found for 97 percent of the households in owner-administered projects. Of the 2,401 households sampled, 2,323 households (or 97%) were matched against PIC/TRACS.

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-35a 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-35b 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.

IV. Findings

Exhibit IV-35a
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	96%	$16	4%	$23
PHA-administered Section 8	97%	$19	3%	$37
Total PHA-administered	97%	$18	3%	$31
Total Owner-administered	97%	$12	3%	$7
Total	97%	$16	3%	$24

Source: Table 20a

As presented in Exhibit IV-35b the average dollars in error for households in error is higher for households when PIC/TRACS data is absent in PHA-administered programs, but a little higher in owner-administered programs.

Exhibit IV-35b
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	95%	$46	5%	$57
PHA-administered Section 8	97%	$48	3%	$77
Total PHA-administered	96%	$48	4%	$69
Total Owner-administered	98%	$34	3%	$23
Total	97%	$43	3%	$59

Source: Table 20c   Note: Percent of households may not add up due to rounding.

IV. Findings

Exhibit IV-36 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-36
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	18%	$49	20%	$64
Overpayment	20%	$39	21%	$54
Proper Payment	63%	n/a	60%	n/a
Total	100%	$16	100%	$24

Source: Table 21a   [1]Average dollar error per under- and overpayment subgroups.

Exhibit IV-37 examines net and gross errors by program type and matched PIC/TRACS data. This exhibit illustrates that it is important to review net error and gross error separately as their average dollar errors are substantially different.

Exhibit IV-37
Average Net and Gross Dollars in Error by Administration Type
and PIC/TRACS Data for all Households

	Average Net Rent Error		Average Gross Rent Error	
Administration Type	PIC/TRACS Present	PIC/TRACS Absent	PIC/TRACS Present	PIC/TRACS Absent
Public Housing	$1	-$12	$16	$23
PHA-administered Section 8	-$1	$5	$19	$37
Total PHA-administered	-$0.32	-$3	$18	$31
Total Owner-administered	-$3	$0.44	$13	$7
Total	-$1	-$2	$16	$24

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-38 provides the percentage of households where the data gathered through the QC process matched that in PIC/TRACS.

IV. Findings

Exhibit IV-38
Percentage of Matched and Non-Matched Dollar Amounts for Key Variables
Matching Variables from the 50058/50059 Form and PIC/TRACS

Match Status	Gross Income		Net Income		Total Tenant Payment		Tenant Rent	
	PIC	TRACS	PIC	TRACS	PIC	TRACS	PIC	TRACS
No Match	1.8%	2.4%	2.0%	3.3%	1.7%	7.1%	*	21.3%
Match	98.2%	97.6%	98.0%	96.7%	98.3%	92.9%	*	78.7%
Total	100%	100%	100%	100%	100%	100%	*	100%

Source: Table 22c   *Tenant Rent for PIC data was not provided by HUD in FY 2008

J. Project Staff Questionnaire Analysis

The purpose of the Project Staff Questionnaire (PSQ) was to obtain information on project and PHA practices and procedures, 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 2008 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 recertifications, communicating information about changes in HUD policies to the staff, quality control monitoring of work done by recertification staff, methods of obtaining household information, automation use when processing recertifications, various verification procedures employed in the process of recertifications, 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 is 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 66 units per project staff member, and 152 units per full-time recertification 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-administered Section 8 reported the highest number of units per project staff (106 units per staff member, on average) and highest number of units per full-time recertification staff (216 on average). Owner-administered projects had the lowest number of units per project staff (41) and units per full-time recertification staff (99). Overall, 86 percent of PHA/projects recertification staff had over one year of experience, compared to 71 percent who had over 5 years of experience. PHA/projects typically required at least a high school diploma/GED for new employees, with only 7 percent stating that no minimum education was required. Owner-administered projects were most likely not to require any education (11 percent).

♦ New recertification Staff. About 34 percent of PHA/projects had new staff assigned to conduct recertifications in the past 12 months. These PHA/projects reported 2 new staff members being assigned to conduct recertifications in the past 12 months, on average.

IV. Findings

More PHA-administered Section 8 projects assigned new staff to recertifications compared to Public Housing and owner-administered projects (51% versus 30% and 27%, respectively). PHA-administered Section 8 projects also assigned the most new staff to conduct recertifications (4 new staff, on average). Both Public Housing and owner-administered projects assigned only 1 new staff member to conduct recertifications, on average.

♦ New Recertification Staff Training. PHA/projects provided on average 109 training hours to all new recertification staff in the past 12 months. Three methods of training new staff were most prevalent – working one-on-one with experienced staff; attending training sessions conducted by the supervisor; and reading manuals, watching videos, or asking questions. PHA-administered Section 8 projects provided the most hours of training (130 hours, on average). This year, Public Housing projects provided the fewest hours of training (73 hours, on average).

♦ Training of Experienced Recertification Staff. About 80 percent of PHA/projects trained experienced staff in the past 12 months. This year, 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 4 experienced staff members received an average of 31 training hours. PHA/projects had experienced staff who usually or always read HUD manuals, watched videos, or asked questions, held training sessions conducted by the supervisor, and worked one-on-one with 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 staff meetings, distributing a memo that described the changes and provided instructions for implementation, and distributing copies of HUD announcements to staff. PHA/projects found answers to staff questions by referring to HUD PHA/owner memos or manuals, figuring out the answer for themselves, using Internet/web-based information and training, and asking the HUD field office or other HUD staff.

♦ Quality Control via Work Monitoring. Most PHA/projects conduct quality control monitoring of recertification work. PHA/projects typically have the supervisor conduct work monitoring, although an increasing number are turning to outside auditors to monitor their work. 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 checking cases on certain dates or times of the year. During the review process PHA/projects usually or always (77 percent) found mistakes in calculating rent, missing or incomplete verifications of income (67 percent), and missing or incomplete verifications of expenses (63 percent). The most commonly stated reason for errors was tenants providing inaccurate or incomplete information (85 percent).

♦ Issues in Conducting Tenant Interviews. The average duration of the typical initial certification interview was 40 minutes, while the average duration of a typical recertification interview was 29 minutes. PHA-administered Section 8 and owner-administered projects reported slightly longer initial and recertification interviews, while

IV. Findings

Public Housing projects reported the shortest. PHA/projects overall were most likely to start the annual recertification process 4 months or less before the effective date (95 percent). Fifty-six percent of PHA/projects overall were likely to have 20 or less percent of their tenants primary language be something other than English. PHA-administered Section 8 projects were most likely to have 20 or less percent speak a primary language other than English at 64 percent, compared to Public Housing and owner-administered projects.

♦ Using Computers and Software Programs. Almost all PHA/projects are using computers to support processing recertifications, as well as a wide variety of purposes. The number of PHA/projects using computers and software has been increasing. 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 the residents. Interestingly, one of the least frequently reported use of computers was to interview tenants and record answers.

♦ Use of Electronic Systems. Ninety-three percent of PHA/projects transmit 50058/50059 data electronically, and about 83 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. PHA/projects reported that they verified the income, asset, and expense components of tenant rent at least 95 percent of the time for both the initial and annual recertification. When it came to household information, they were more likely to verify the information only during the initial certification. Of all the program types, owner-administered projects were most likely to verify information only during the initial certification. Most PHA/projects keep track of outstanding verification in the tenant file. PHA/projects reported that it caused some or much difficulty to verify sporadic, infrequent, or seasonal employment; sources of income other than employment; and income from employment. Most PHA/projects use various procedures to get verification information, including calling the third party, calling the tenants, sending letters to the third party, and using electronic verification or data matching such as EIV. 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 employers and other institutions not responding to requests in a timely manner. TASS and EIV were most frequently used to verify Social Security/SSI benefits, employment income, and disability status and dual entitlement benefits. Most PHA/projects also used other methods such as pay stubs, third party verification, and employer information to supplement EIV information.

K. Multivariate Analysis

Multivariate modeling was used to determine the tenant and project characteristics that are predictive of gross rent error, tenant underpayment and tenant overpayment. This technique was used (in addition to the tabulations already presented) to provide additional information about the causes of rent error while statistically controlling for the effects of other tenant and project

IV. Findings

variables. The multivariate analysis was used as a means to address five study objectives. Each objective is taken in turn below and the results of the multivariate analysis are provided.

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

Bivariate and multivariate results indicate that program type alone is not an important predictor for rent error in FY 2008.

♦ 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 the program sponsor staff.

Consistent with prior studies, rent errors are the result of the following PHA/project-caused errors: overdue recertifications, transcription errors, and failure to verify income, asset and expense sources with third party verification. In addition the analysis did identify a number of household characteristics that were predictive of rent error, namely: households with four or more sources of income and expenses, those with earned income, and those with other income sources.

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

The multivariate analysis did not reveal any particular relationship between rent error and program type or specific projects.

♦ 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.

The use of an automated rent calculation system alone was not a specifically strong predictor of rent error. This finding is most likely due to the fact the nearly all PHAs/projects use some form of automated system to calculate rent and thus there is little variation in this variable.

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

Project characteristics as defined by this study were not predictive of rent error. This was evidenced in both the bivariate and multivariate analyses. The analysis did identify, however, a number of tenant characteristics that were predictive of rent error, namely: those with four or more sources of income and expenses, those with earned income, and those with other income sources.

In addition, the following conclusions can be reached about how PHA/project staff can minimize their rent calculation errors.

♦ Eliminate overdue recertifications by starting the recertification process with enough time to conclude all the needed tasks

IV. Findings

- Reduce transcription error by implementing specific quality control procedures for the interpretation and transfer of information from household supporting documents to the 50058 or 50059 forms.

- Dedicate additional resources to the often difficult task of obtaining third party verification for income, asset and expense sources.

- Select cases with specific characteristics for more intensified quality control review. Such cases should include those with four or more sources of income and expenses, those with earned income, and those with other income sources. Such targeted review would help reduce errors that occur in the process of payment determination.

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. However, if further reduction in error is desired, it continues to be important to learn more about local policies and procedures that impact error, and methods of changing those processes to reduce error.

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

V. Recommendations

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). The most recent match of the study sample households with PIC/TRACS data indicated that 97 percent of the sample households are included in the PIC/TRACS databases. This continues to be an improvement over the findings from matches in previous studies – the FY 2007 study indicated 95 percent of the sample households were included in the PIC/TRACS database, while the FY 2006 study indicated that 83 percent of the sample households were included in the PIC/TRACS databases. We are at the point now where consideration should be given to using these data for selecting the household sample. However, using the PIC/TRACS data for selecting the household sample may not be appropriate unless it is clear that data are available for the specific period of time covered by the study.

V.   Recommendations

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 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. In fact, the errors associated with tenant overpayments are increasing. 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 to require both PHAs and owners to use the information available through the Department of Health and Human Services' "New Hires" income matching database.* The majority of subsidy overpayment errors are associated with earned income, and a large majority of tenant income underreporting also relates to earned income. The "New Hires" income matching database provides the opportunity to correct errors associated with reported and unreported income. However, our experience working with the "New Hires" data indicates that caution needs to be taken when using the information provided by the database. 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

V. Recommendations

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 FY 2008 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.

V. Recommendations

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 policy related to students is the most 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

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. De
        termine 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.

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

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

h. Add a. (TTP) to g. (Gross Rent minus Payment Standard).

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 l.**

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

k. 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.**

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

m. 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)

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

o. 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.**

4. **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 e.**

  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.**

5. **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 Procedure

Appendix B—Weighting Procedure

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.

Appendix B—Weighting Procedure

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.

One exception to this occurred for flat rent cases in Public Housing Projects. A flat rent case could not be a refusal, since no interview was necessary for such cases. However, it could replace a refusal. As a result, the probability of selection for flat rent cases was different than for non-flat-rent cases. In order to take this into account an additional category (beyond non-flat rent completes, out-of-scope and completes) was created for flat-rent cases. The estimates would be created by first estimating the number of non-flat rent cases and letting the weight be the estimated total divided by the number sampled. Then the weights for the non-flat-rent cases would be calculated as before. For example, suppose in the situation mentioned above one of the completes had been a flat rent case. Then we would estimate that 1/6 of the 120 tenants, or 20 tenants, were flat rent. Of the remaining 100, 4/5 would estimated to be be in scope, or 80, and 3 would be in the sample. So the tenant weight for the flat-rent case would be 20 and the tenant weight for the non-flat-rent case would be 80/3 or 26 2/3.

Appendix B—Weighting Procedure

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 2005 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 737 (down from an actual size of 799) for the Office of Housing-administered projects, 737 for the Public Housing projects (down from 800), and 721 for the PHA-administered Section 8 projects (down from 802).

Variance Estimation. Standard errors were obtained for a number of estimates using a delete-a-group Jackknife procedure. This was implemented using twenty replicate groups and creating twenty sets of replicate weights. This procedure is available in SAS 9.2 and is considered more robust with respect to design characteristics than the Taylor Series method used in the previous cycle (Kott, 1998).

Kott, P. S. (1998), "Using the Delete-a-Group Jacknife Variance Estimator in Practice," *Proceedings of the Annual Meeting of the American Statistical Association, Section on Survey Research Methods*, pp. 763-768. Alexandria, VA: American Statistical Association.

Appendix C—Source Tables Based on Quality Control Data

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 1A. Verification of QC Rent Components

	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	72	(5.6%)	39	(3.0%)	1,158	(91.3%)
Pension, Etc.	3	(.1%)	43	(1.7%)	2,463	(98.2%)
Public Assistance	31	(6.8%)	8	(1.7%)	415	(91.5%)
Other Income	92	(11.2%)	24	(2.9%)	701	(85.8%)
Asset Income	12	(1.4%)	100	(11.7%)	738	(86.9%)
Child Care Expense	34	(13.5%)	10	(4.0%)	211	(82.6%)
Disability Expense	8	(63.5%)			5	(36.5%)
Medical Expense	76	(5.2%)	176	(12.1%)	1,200	(82.7%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	273	(20.7%)	72	(5.4%)	978	(73.9%)
Pension, Etc.	116	(4.6%)	215	(8.6%)	2,185	(86.8%)
Public Assistance	141	(28.6%)	3	(.6%)	348	(70.8%)
Other Income	276	(30.8%)	39	(4.4%)	582	(64.8%)
Asset Income	66	(7.8%)	197	(23.1%)	590	(69.1%)
Child Care Expense	49	(19.0%)	12	(4.8%)	195	(76.2%)
Disability Expense	11	(89.1%)			1	(10.9%)
Medical Expense	160	(11.0%)	462	(31.8%)	829	(57.1%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 1c. Verification of QC Rent Components
Third Party In Writing 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	231	(17.4%)	64	(4.8%)	1,028	(77.7%)
Pension, Etc.	66	(2.6%)	151	(6.0%)	2,299	(91.4%)
Public Assistance	139	(28.3%)	3	(.6%)	350	(71.2%)
Other Income	275	(30.6%)	39	(4.4%)	584	(65.0%)
Asset Income	66	(7.8%)	197	(23.1%)	590	(69.1%)
Child Care Expense	49	(19.0%)	12	(4.8%)	195	(76.2%)
Disability Expense	11	(89.1%)			1	(10.9%)
Medical Expense	146	(10.1%)	437	(30.1%)	868	(59.8%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	1,298	(98.2%)	10	(.7%)	14	(1.1%)
Pension, Etc.	2,508	(99.7%)	8	(.3%)		
Public Assistance	489	(99.6%)			2	(.4%)
Other Income	893	(99.4%)	3	(.3%)	2	(.2%)
Asset Income	848	(99.4%)	3	(.4%)	2	(.2%)
Child Care Expense	253	(99.1%)			2	(.9%)
Disability Expense	9	(74.4%)			3	(25.6%)
Medical Expense	1,446	(99.6%)	4	(.2%)	2	(.1%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	1,210	(91.5%)	25	(1.9%)	87	(6.6%)
Pension, Etc.	2,354	(93.6%)	106	(4.2%)	56	(2.2%)
Public Assistance	422	(85.9%)	5	(1.0%)	64	(13.0%)
Other Income	780	(86.8%)	18	(2.0%)	100	(11.1%)
Asset Income	673	(78.9%)	138	(16.2%)	42	(4.9%)
Child Care Expense	240	(94.1%)	4	(1.7%)	11	(4.3%)
Disability Expense	12	(100.0%)				
Medical Expense	1,070	(73.7%)	329	(22.6%)	53	(3.7%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	1,261	(95.4%)	28	(2.1%)	33	(2.5%)
Pension, Etc.	2,388	(94.9%)	81	(3.2%)	47	(1.9%)
Public Assistance	489	(99.6%)			2	(.4%)
Other Income	896	(99.8%)			2	(.2%)
Asset Income	853	(100.0%)				
Child Care Expense	255	(100.0%)				
Disability Expense	12	(100.0%)				
Medical Expense	1,399	(96.4%)	38	(2.6%)	14	(1.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 2. Percent 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	154	(16.2%)	(20.8%)	631	(66.0%)	(24.1%)	170	(17.8%)	(22.0%)	955	(100.0%)	(23.1%)
	Section 8	362	(19.5%)	(48.7%)	1,136	(61.2%)	(43.5%)	359	(19.3%)	(46.4%)	1,858	(100.0%)	(45.0%)
	Total	517	(18.4%)	(69.5%)	1,767	(62.8%)	(67.6%)	530	(18.8%)	(68.4%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED	Owner-Administered	227	(17.2%)	(30.5%)	848	(64.3%)	(32.4%)	245	(18.5%)	(31.6%)	1,320	(100.0%)	(31.9%)
	Total	227	(17.2%)	(30.5%)	848	(64.3%)	(32.4%)	245	(18.5%)	(31.6%)	1,320	(100.0%)	(31.9%)
Total		744	(18.0%)	(100.0%)	2,615	(63.3%)	(100.0%)	774	(18.7%)	(100.0%)	4,133	(100.0%)	(100.0%)

2009.10.06 [Weighted]

HUD QC FY 2008
Table 2(S). Percent 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	209	(21.9%)	(20.6%)	501	(52.5%)	(24.4%)	245	(25.6%)	(23.0%)	955	(100.0%)	(23.1%)
	Section 8	496	(26.7%)	(48.9%)	873	(47.0%)	(42.5%)	489	(26.3%)	(45.9%)	1,858	(100.0%)	(45.0%)
	Total	706	(25.1%)	(69.5%)	1,374	(48.8%)	(66.9%)	734	(26.1%)	(68.9%)	2,813	(100.0%)	(68.1%)
OWNER ADMINISTERED	Owner-Administered	309	(23.4%)	(30.5%)	680	(51.5%)	(33.1%)	331	(25.1%)	(31.1%)	1,320	(100.0%)	(31.9%)
	Total	309	(23.4%)	(30.5%)	680	(51.5%)	(33.1%)	331	(25.1%)	(31.1%)	1,320	(100.0%)	(31.9%)
Total		1,015	(24.6%)	(100.0%)	2,053	(49.7%)	(100.0%)	1,065	(25.8%)	(100.0%)	4,133	(100.0%)	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
PHA ADMINISTERED	Public Housing	954	(23.1%)	230,701	241.89	955	(23.1%)	231,044	241.93	955	(23.1%)	15,275	16.00
	Section 8	1,858	(45.0%)	377,017	202.92	1,858	(45.0%)	381,190	205.16	1,858	(45.0%)	33,354	17.95
	Total	2,812	(68.1%)	607,718	216.14	2,813	(68.1%)	612,235	217.64	2,813	(68.1%)	48,629	17.29
OWNER ADMINISTERED	Owner-Administered	1,320	(31.9%)	293,097	222.04	1,320	(31.9%)	296,726	224.79	1,320	(31.9%)	15,977	12.10
	Total	1,320	(31.9%)	293,097	222.04	1,320	(31.9%)	296,726	224.79	1,320	(31.9%)	15,977	12.10
Total		4,132	(100.0%)	900,816	218.02	4,133	(100.0%)	908,960	219.93	4,133	(100.0%)	64,606	15.63

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
PHA ADMINISTERED	Public Housing	154	(20.8%)	7,550	48.91	170	(22.0%)	7,726	45.42	955	(23.1%)	231,044	241.93
	Section 8	362	(48.7%)	18,743	51.75	359	(46.4%)	14,611	40.65	1,858	(45.0%)	381,190	205.16
	Total	517	(69.5%)	26,293	50.90	530	(68.4%)	22,336	42.18	2,813	(68.1%)	612,235	217.64
OWNER ADMINISTERED	Owner-Administered	227	(30.5%)	9,815	43.20	245	(31.6%)	6,162	25.19	1,320	(31.9%)	296,726	224.79
	Total	227	(30.5%)	9,815	43.20	245	(31.6%)	6,162	25.19	1,320	(31.9%)	296,726	224.79
Total		744	(100.0%)	36,108	48.55	774	(100.0%)	28,498	36.81	4,133	(100.0%)	908,960	219.93

2009.10.06 [Weighted]

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
PHA ADMINISTERED	Public Housing	209	(20.6%)	7,719	36.89	245	(23.0%)	7,865	32.14	955	(23.1%)	231,044	241.93
	Section 8	496	(48.9%)	19,128	38.54	489	(45.9%)	14,955	30.57	1,858	(45.0%)	381,190	205.16
	Total	706	(69.5%)	26,847	38.05	734	(68.9%)	22,820	31.10	2,813	(68.1%)	612,235	217.64
OWNER ADMINISTERED	Owner-Administered	309	(30.5%)	10,034	32.42	331	(31.1%)	6,406	19.35	1,320	(31.9%)	296,726	224.79
	Total	309	(30.5%)	10,034	32.42	331	(31.1%)	6,406	19.35	1,320	(31.9%)	296,726	224.79
Total		1,015	(100.0%)	36,880	36.34	1,065	(100.0%)	29,226	27.45	4,133	(100.0%)	908,960	219.93

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
PHA ADMINISTERED	Public Housing	955	(23.1%)	15,275	16.00	955	(23.1%)	176	.18	955	(23.1%)	231,044	241.93
	Section 8	1,858	(45.0%)	33,354	17.95	1,858	(45.0%)	-4,132	-2.22	1,858	(45.0%)	381,190	205.16
	Total	2,813	(68.1%)	48,629	17.29	2,813	(68.1%)	-3,957	-1.41	2,813	(68.1%)	612,235	217.64
OWNER ADMINISTERED	Owner-Administered	1,320	(31.9%)	15,977	12.10	1,320	(31.9%)	-3,654	-2.77	1,320	(31.9%)	296,726	224.79
	Total	1,320	(31.9%)	15,977	12.10	1,320	(31.9%)	-3,654	-2.77	1,320	(31.9%)	296,726	224.79
Total		4,133	(100.0%)	64,606	15.63	4,133	(100.0%)	-7,610	-1.84	4,133	(100.0%)	908,960	219.93

2009.10.06 [Weighted]

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
PHA ADMINISTERED	Public Housing	955	(23.1%)	15,584	16.32	955	(23.1%)	147	.15	955	(23.1%)	231,044	241.93
	Section 8	1,858	(45.0%)	34,083	18.34	1,858	(45.0%)	-4,173	-2.25	1,858	(45.0%)	381,190	205.16
	Total	2,813	(68.1%)	49,667	17.66	2,813	(68.1%)	-4,026	-1.43	2,813	(68.1%)	612,235	217.64
OWNER ADMINISTERED	Owner-Administered	1,320	(31.9%)	16,439	12.45	1,320	(31.9%)	-3,628	-2.75	1,320	(31.9%)	296,726	224.79
	Total	1,320	(31.9%)	16,439	12.45	1,320	(31.9%)	-3,628	-2.75	1,320	(31.9%)	296,726	224.79
Total		4,133	(100.0%)	66,106	15.99	4,133	(100.0%)	-7,655	-1.85	4,133	(100.0%)	908,960	219.93

2009.10.06 [Weighted]

HUD QC FY 2008
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	109	(13.6%)	(30.2%)	667	(83.2%)	(33.3%)	26	(3.2%)	(68.4%)	802	(100.0%)	(33.4%)
	Section 8	122	(15.3%)	(33.8%)	667	(83.4%)	(33.3%)	11	(1.4%)	(28.9%)	800	(100.0%)	(33.3%)
	Total	231	(14.4%)	(64.0%)	1,334	(83.3%)	(66.6%)	37	(2.3%)	(97.4%)	1,602	(100.0%)	(66.7%)
OWNER ADMINISTERED	Owner-Administered	130	(16.3%)	(36.0%)	668	(83.6%)	(33.4%)	1	(.1%)	(2.6%)	799	(100.0%)	(33.3%)
	Total	130	(16.3%)	(36.0%)	668	(83.6%)	(33.4%)	1	(.1%)	(2.6%)	799	(100.0%)	(33.3%)
Total		361	(15.0%)	(100.0%)	2,002	(83.4%)	(100.0%)	38	(1.6%)	(100.0%)	2,401	(100.0%)	(100.0%)

2009.10.06 [Weighted]

HUD QC FY 2008
Table 7. Percent 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	591	(94.2%)	36	(5.8%)
Social Security Number	614	(98.0%)	13	(2.0%)
Consent Form	594	(94.8%)	33	(5.2%)
Low and Very Low Income	626	(99.8%)	1	(.2%)
Meets All Eligibility Criteria	567	(90.4%)	60	(9.6%)

2009.10.06 [Weighted]

HUD QC FY 2008
Table 7b. Percent 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	118	(94.3%)	7	(5.7%)
	Social Security Number	119	(95.1%)	6	(4.9%)
	Consent Form	118	(94.6%)	7	(5.4%)
	Low and Very Low Income	124	(99.2%)	1	(.8%)
	Meets All Eligibility Criteria	110	(88.1%)	15	(11.9%)
PHA-ADMINISTERED SECTION 8	Citizenship	274	(96.2%)	11	(3.8%)
	Social Security Number	280	(98.4%)	4	(1.6%)
	Consent Form	266	(93.4%)	19	(6.6%)
	Low and Very Low Income	285	(100.0%)		
	Meets All Eligibility Criteria	261	(91.8%)	23	(8.2%)
OWNER-ADMINISTERED	Citizenship	199	(91.5%)	18	(8.5%)
	Social Security Number	215	(99.1%)	2	(.9%)
	Consent Form	210	(96.7%)	7	(3.3%)
	Low and Very Low Income	217	(100.0%)		
	Meets All Eligibility Criteria	195	(89.9%)	22	(10.1%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
CERTIFICATION		120	(16.1%)	6,430	53.74	137	(17.7%)	5,067	37.08	627	(15.2%)	110,546	176.35
	Total	120	(16.1%)	6,430	53.74	137	(17.7%)	5,067	37.08	627	(15.2%)	110,546	176.35
RECERTIFICATION	Non-Overdue	601	(80.8%)	27,416	45.61	623	(80.4%)	22,452	36.06	3,436	(83.1%)	784,927	228.44
	Overdue	23	(3.1%)	2,262	98.47	15	(1.9%)	979	65.80	70	(1.7%)	13,487	192.43
	Total	624	(83.9%)	29,679	47.55	638	(82.3%)	23,431	36.75	3,506	(84.8%)	798,414	227.72
Total		744	(100.0%)	36,108	48.55	774	(100.0%)	28,498	36.81	4,133	(100.0%)	908,960	219.93

2009.10.06 [Weighted]

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
CERTIFICATION	.0000	162	(16.0%)	6,562	40.46	170	(16.0%)	5,123	30.11	627	(15.2%)	110,546	176.35
	Total	162	(16.0%)	6,562	40.46	170	(16.0%)	5,123	30.11	627	(15.2%)	110,546	176.35
RECERTIFICATION	Non-Overdue	819	(80.7%)	28,012	34.21	878	(82.5%)	23,122	26.32	3,436	(83.1%)	784,927	228.44
	Overdue	34	(3.4%)	2,307	67.67	16	(1.5%)	980	60.59	70	(1.7%)	13,487	192.43
	Total	853	(84.0%)	30,319	35.55	895	(84.0%)	24,103	26.94	3,506	(84.8%)	798,414	227.72
Total		1,015	(100.0%)	36,880	36.34	1,065	(100.0%)	29,226	27.45	4,133	(100.0%)	908,960	219.93

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
TABLE 9. Largest Component Error for Households with Rent Error (Annual Dollars)

	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
Earned Income	355	(23.4%)	1,080,764	3,047
Pension, Etc.	312	(20.5%)	810,051	2,598
Public Assistance	96	(6.3%)	190,507	1,986
Other Income	213	(14.0%)	481,654	2,260
Asset Income	44	(2.9%)	29,608	678
Dependent Allowance	72	(4.7%)	51,150	715
Elderly HH Allowance	31	(2.1%)	12,454	400
Child Care Allowance	54	(3.5%)	131,298	2,442
Medical Allowance	322	(21.2%)	387,177	1,202
No Error	20	(1.3%)	0	0
Total	1,518	(100.0%)	3,174,663	2,091

2009.10.06 [Weighted]

HUD QC FY 2008
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	Ave. Dollar Amount	# of Cases (in 1,000)	Col % of Cases	Sum Dollar Amount	Ave. Dollar Amount
PHA ADMINISTERED	Public Housing	324	(21.4%)	912,926	2,813.63	324	(21.4%)	734,262	2,262.99
	Section 8	722	(47.5%)	1,983,821	2,749.14	722	(47.5%)	1,614,237	2,236.98
	Total	1,046	(68.9%)	2,896,748	2,769.14	1,046	(68.9%)	2,348,499	2,245.05
OWNER ADMINISTERED	Owner-Administered	472	(31.1%)	1,045,003	2,214.62	472	(31.1%)	826,164	1,750.84
	Total	472	(31.1%)	1,045,003	2,214.62	472	(31.1%)	826,164	1,750.84
Total		1,518	(100.0%)	3,941,750	2,596.77	1,518	(100.0%)	3,174,663	2,091.42

2009.10.06 [Weighted]

HUD QC FY 2008
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
UNDERPAYMENT	Earned Income	198	(7.0%)	(82.1%)	43	(3.3%)	(17.9%)	241	(5.8%)	(100.0%)
	Pension, Etc.	192	(6.8%)	(61.7%)	119	(9.0%)	(38.3%)	311	(7.5%)	(100.0%)
	Public Assistance	75	(2.7%)	(83.1%)	15	(1.2%)	(16.9%)	90	(2.2%)	(100.0%)
	Other Income	127	(4.5%)	(73.1%)	47	(3.5%)	(26.9%)	174	(4.2%)	(100.0%)
	Asset Income	74	(2.6%)	(55.9%)	58	(4.4%)	(44.1%)	132	(3.2%)	(100.0%)
	Dependent Allowance	46	(1.6%)	(80.4%)	11	(.9%)	(19.6%)	58	(1.4%)	(100.0%)
	Elderly HH Allowance	12	(.4%)	(55.7%)	10	(.7%)	(44.3%)	22	(.5%)	(100.0%)
	Child Care Allowance	29	(1.0%)	(84.9%)	5	(.4%)	(15.1%)	34	(.8%)	(100.0%)
	Disability Allowance	1	(.0%)	(100.0%)				1	(.0%)	(100.0%)
	Medical Allowance	84	(3.0%)	(44.1%)	106	(8.0%)	(55.9%)	190	(4.6%)	(100.0%)
	No Error	13	(.4%)	(84.1%)	2	(.2%)	(15.9%)	15	(.4%)	(100.0%)
PROPER PAYMENT	Earned Income	215	(7.6%)	(87.1%)	32	(2.4%)	(12.9%)	246	(6.0%)	(100.0%)
	Pension, Etc.	300	(10.7%)	(64.9%)	162	(12.3%)	(35.1%)	462	(11.2%)	(100.0%)
	Public Assistance	53	(1.9%)	(74.4%)	18	(1.4%)	(25.6%)	71	(1.7%)	(100.0%)
	Other Income	92	(3.3%)	(83.2%)	19	(1.4%)	(16.8%)	111	(2.7%)	(100.0%)
	Asset Income	179	(6.3%)	(68.1%)	84	(6.3%)	(31.9%)	262	(6.3%)	(100.0%)
	Dependent Allowance	31	(1.1%)	(81.8%)	7	(.5%)	(18.2%)	37	(.9%)	(100.0%)
	Elderly HH Allowance	24	(.9%)	(95.3%)	1	(.1%)	(4.7%)	25	(.6%)	(100.0%)
	Child Care Allowance	27	(1.0%)	(84.1%)	5	(.4%)	(15.9%)	32	(.8%)	(100.0%)
	Disability Allowance	4	(.2%)	(100.0%)				4	(.1%)	(100.0%)
	Medical Allowance	166	(5.9%)	(54.1%)	141	(10.7%)	(45.9%)	308	(7.4%)	(100.0%)
	No Error	1,019	(36.2%)	(67.5%)	490	(37.1%)	(32.5%)	1,509	(36.5%)	(100.0%)
OVERPAYMENT	Earned Income	182	(6.5%)	(85.5%)	31	(2.3%)	(14.5%)	213	(5.2%)	(100.0%)
	Pension, Etc.	149	(5.3%)	(58.5%)	105	(8.0%)	(41.5%)	254	(6.1%)	(100.0%)
	Public Assistance	43	(1.5%)	(100.0%)				43	(1.0%)	(100.0%)
	Other Income	127	(4.5%)	(83.0%)	26	(2.0%)	(17.0%)	153	(3.7%)	(100.0%)
	Asset Income	65	(2.3%)	(47.1%)	73	(5.5%)	(52.9%)	138	(3.3%)	(100.0%)
	Dependent Allowance	70	(2.5%)	(88.1%)	9	(.7%)	(11.9%)	79	(1.9%)	(100.0%)
	Elderly HH Allowance	22	(.8%)	(50.5%)	21	(1.6%)	(49.5%)	43	(1.0%)	(100.0%)
	Child Care Allowance	55	(1.9%)	(82.6%)	11	(.9%)	(17.4%)	66	(1.6%)	(100.0%)
	Disability Allowance									
	Medical Allowance	142	(5.0%)	(46.2%)	166	(12.6%)	(53.8%)	308	(7.4%)	(100.0%)
	No Error	4	(.1%)	(77.3%)	1	(.1%)	(22.7%)	5	(.1%)	(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%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	1,763	(99.7%)	(100.0%)				1,763	(42.7%)	(100.0%)
Incorrect Allowance	5	(.3%)	(5.4%)	86	(3.6%)	(94.6%)	90	(2.2%)	(100.0%)
Correct Allowance				2,280	(96.4%)	(100.0%)	2,280	(55.2%)	(100.0%)
Total	1,768	(100.0%)	(42.8%)	2,365	(100.0%)	(57.2%)	4,133	(100.0%)	(100.0%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	2,333	(99.7%)	(100.0%)				2,333	(56.4%)	(100.0%)
Incorrect Allowance	8	(.3%)	(4.4%)	166	(9.3%)	(95.6%)	174	(4.2%)	(100.0%)
Correct Allowance				1,626	(90.7%)	(100.0%)	1,626	(39.4%)	(100.0%)
Total	2,340	(100.0%)	(56.6%)	1,793	(100.0%)	(43.4%)	4,133	(100.0%)	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 13. Calculation Errors on Form 50058/59

	58		59		Total	
	# of Errors	# of Cases (in 1,000)	# of Errors	# of Cases (in 1,000)	# of Errors	# of Cases (in 1,000)
HOUSEHOLD COMPOSITION	201	194	59	55	260	248
NET FAMILY ASSETS AND INCOME	324	191	82	43	406	235
ALLOWANCES AND ADJUSTED INCOME	1,501	1,275	91	38	1,592	1,313
FAMILY RENT AND SUBSIDY INFORMATION	427	255	39	27	467	282

2009.10.06 [Weighted]

HUD QC FY 2008
Table 14. Consistency Errors on Form 50058/59

	58		59		Total	
	# of Errors	# of Cases (in 1,000)	# of Errors	# of Cases (in 1,000)	# of Errors	# of Cases (in 1,000)
GENERAL INFORMATION	44	44	84	71	128	116
HOUSEHOLD COMPOSITION	258	130	71	65	330	194
NET FAMILY ASSETS AND INCOME	177	171	3	3	180	173
ALLOWANCES AND ADJUSTED INCOME	312	305	9	7	321	311
FAMILY RENT AND SUBSIDY INFORMATION	83	83	3	3	86	86

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15a. Verification of Form 50058/59 Rent Components
Third Party Verbal or In Writing, or 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	151	(11.6%)	347	(26.8%)	800	(61.6%)	1,299	(100.0%)
Pension, Etc.	127	(5.1%)	303	(12.2%)	2,059	(82.7%)	2,489	(100.0%)
Public Assistance	66	(14.8%)	84	(18.7%)	297	(66.5%)	447	(100.0%)
Other Income	194	(23.7%)	112	(13.7%)	513	(62.6%)	818	(100.0%)
Asset Income	53	(7.4%)	54	(7.6%)	602	(85.0%)	708	(100.0%)
Child Care Expense	22	(10.8%)	25	(12.2%)	155	(76.9%)	201	(100.0%)
Disability Expense			1	(100.0%)			1	(100.0%)
Medical Expense	72	(6.7%)	192	(17.9%)	810	(75.5%)	1,073	(100.0%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	520	(40.1%)	153	(11.8%)	626	(48.2%)	1,299	(100.0%)
Pension, Etc.	1,620	(65.1%)	104	(4.2%)	765	(30.7%)	2,489	(100.0%)
Public Assistance	160	(35.9%)	49	(11.0%)	237	(53.1%)	447	(100.0%)
Other Income	401	(49.0%)	55	(6.7%)	362	(44.3%)	818	(100.0%)
Asset Income	277	(39.1%)	26	(3.6%)	406	(57.3%)	708	(100.0%)
Child Care Expense	45	(22.4%)	19	(9.5%)	137	(68.1%)	201	(100.0%)
Disability Expense			1	(100.0%)			1	(100.0%)
Medical Expense	645	(60.1%)	48	(4.5%)	380	(35.4%)	1,073	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15c. Verification of Form 50058/59 Rent Components
Third Party In Writing 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	428	(33.0%)	232	(17.8%)	638	(49.2%)	1,299	(100.0%)
Pension, Etc.	711	(28.6%)	217	(8.7%)	1,561	(62.7%)	2,489	(100.0%)
Public Assistance	159	(35.5%)	51	(11.4%)	237	(53.1%)	447	(100.0%)
Other Income	399	(48.8%)	55	(6.7%)	364	(44.5%)	818	(100.0%)
Asset Income	277	(39.1%)	26	(3.6%)	406	(57.3%)	708	(100.0%)
Child Care Expense	45	(22.4%)	19	(9.5%)	137	(68.1%)	201	(100.0%)
Disability Expense			1	(100.0%)			1	(100.0%)
Medical Expense	506	(47.2%)	83	(7.7%)	484	(45.1%)	1,073	(100.0%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	1,269	(97.7%)	12	(.9%)	18	(1.4%)	1,299	(100.0%)
Pension, Etc.	2,480	(99.7%)			8	(.3%)	2,489	(100.0%)
Public Assistance	440	(98.6%)			6	(1.4%)	447	(100.0%)
Other Income	815	(99.6%)	2	(.3%)	1	(.1%)	818	(100.0%)
Asset Income	706	(99.7%)			2	(.3%)	708	(100.0%)
Child Care Expense	199	(98.9%)			2	(1.1%)	201	(100.0%)
Disability Expense	1	(100.0%)					1	(100.0%)
Medical Expense	1,069	(99.7%)			4	(.3%)	1,073	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	1,078	(83.0%)	93	(7.2%)	128	(9.8%)	1,299	(100.0%)
Pension, Etc.	2,084	(83.7%)	45	(1.8%)	360	(14.5%)	2,489	(100.0%)
Public Assistance	360	(80.6%)	33	(7.3%)	54	(12.0%)	447	(100.0%)
Other Income	635	(77.6%)	45	(5.5%)	138	(16.8%)	818	(100.0%)
Asset Income	566	(79.9%)	15	(2.1%)	128	(18.1%)	708	(100.0%)
Child Care Expense	180	(89.6%)	5	(2.7%)	16	(7.7%)	201	(100.0%)
Disability Expense	1	(100.0%)					1	(100.0%)
Medical Expense	918	(85.5%)	31	(2.8%)	125	(11.6%)	1,073	(100.0%)

2009.10.06 [Weighted]

HUD QC FY 2008
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	1,221	(94.0%)	69	(5.3%)	9	(.7%)	1,299	(100.0%)
Pension, Etc.	1,716	(69.0%)	82	(3.3%)	690	(27.7%)	2,489	(100.0%)
Public Assistance	445	(99.6%)	2	(.4%)			447	(100.0%)
Other Income	817	(99.8%)			2	(.2%)	818	(100.0%)
Asset Income	708	(100.0%)					708	(100.0%)
Child Care Expense	201	(100.0%)					201	(100.0%)
Disability Expense	1	(100.0%)					1	(100.0%)
Medical Expense	997	(92.9%)	19	(1.8%)	57	(5.3%)	1,073	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15g. Verification of Form 50058/59 Rent Components
Third Party Verbal or In Writing, or 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
Public Housing	Earned Income	47	(13.7%)	108	(31.9%)	185	(54.4%)	339	(100.0%)
	Pension, Etc.	45	(8.0%)	91	(16.3%)	421	(75.6%)	557	(100.0%)
	Public Assistance	14	(13.5%)	21	(20.1%)	71	(66.4%)	107	(100.0%)
	Other Income	57	(34.3%)	24	(14.3%)	86	(51.4%)	167	(100.0%)
	Asset Income	14	(11.2%)	12	(9.5%)	101	(79.3%)	128	(100.0%)
	Child Care Expense	8	(28.9%)	7	(24.7%)	14	(46.4%)	29	(100.0%)
	Disability Expense			1	(100.0%)			1	(100.0%)
	Medical Expense	15	(7.2%)	54	(25.1%)	144	(67.7%)	213	(100.0%)
PHA-Administered Section 8	Earned Income	84	(11.7%)	205	(28.6%)	429	(59.8%)	718	(100.0%)
	Pension, Etc.	41	(4.2%)	109	(11.1%)	829	(84.7%)	979	(100.0%)
	Public Assistance	36	(15.5%)	56	(24.4%)	139	(60.2%)	231	(100.0%)
	Other Income	92	(20.1%)	66	(14.4%)	301	(65.5%)	459	(100.0%)
	Asset Income	8	(3.8%)	10	(5.1%)	180	(91.1%)	198	(100.0%)
	Child Care Expense	13	(11.1%)	13	(10.9%)	94	(78.1%)	121	(100.0%)
	Medical Expense	18	(6.6%)	35	(13.2%)	213	(80.2%)	266	(100.0%)
Owner-Administered	Earned Income	21	(8.6%)	34	(14.1%)	186	(77.3%)	241	(100.0%)
	Pension, Etc.	41	(4.3%)	103	(10.8%)	809	(84.8%)	953	(100.0%)
	Public Assistance	16	(14.5%)	6	(5.4%)	88	(80.1%)	109	(100.0%)
	Other Income	44	(23.0%)	22	(11.5%)	126	(65.6%)	193	(100.0%)
	Asset Income	31	(8.1%)	31	(8.2%)	321	(83.8%)	383	(100.0%)
	Child Care Expense			4	(8.3%)	47	(91.7%)	51	(100.0%)
	Medical Expense	39	(6.5%)	103	(17.3%)	452	(76.1%)	594	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15h. 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
Public Housing	Earned Income	141	(41.5%)	48	(14.2%)	150	(44.3%)	339	(100.0%)
	Pension, Etc.	390	(70.1%)	19	(3.5%)	147	(26.5%)	557	(100.0%)
	Public Assistance	38	(35.2%)	14	(13.4%)	55	(51.4%)	107	(100.0%)
	Other Income	96	(57.5%)	12	(7.1%)	59	(35.4%)	167	(100.0%)
	Asset Income	49	(38.3%)	8	(6.0%)	71	(55.7%)	128	(100.0%)
	Child Care Expense	14	(47.7%)	4	(12.4%)	12	(39.8%)	29	(100.0%)
	Disability Expense			1	(100.0%)			1	(100.0%)
	Medical Expense	143	(67.0%)	15	(7.3%)	55	(25.7%)	213	(100.0%)
PHA-Administered Section 8	Earned Income	312	(43.4%)	80	(11.1%)	327	(45.5%)	718	(100.0%)
	Pension, Etc.	664	(67.9%)	42	(4.3%)	272	(27.8%)	979	(100.0%)
	Public Assistance	88	(38.3%)	32	(14.0%)	110	(47.7%)	231	(100.0%)
	Other Income	212	(46.3%)	35	(7.5%)	212	(46.2%)	459	(100.0%)
	Asset Income	102	(51.7%)	1	(.5%)	94	(47.7%)	198	(100.0%)
	Child Care Expense	27	(22.5%)	11	(9.3%)	82	(68.2%)	121	(100.0%)
	Medical Expense	137	(51.7%)	8	(2.9%)	120	(45.4%)	266	(100.0%)
Owner-Administered	Earned Income	67	(28.0%)	25	(10.2%)	149	(61.8%)	241	(100.0%)
	Pension, Etc.	565	(59.3%)	43	(4.5%)	345	(36.2%)	953	(100.0%)
	Public Assistance	34	(31.4%)	3	(2.3%)	72	(66.2%)	109	(100.0%)
	Other Income	93	(48.1%)	9	(4.5%)	91	(47.4%)	193	(100.0%)
	Asset Income	126	(32.9%)	17	(4.4%)	240	(62.7%)	383	(100.0%)
	Child Care Expense	4	(7.5%)	4	(8.3%)	43	(84.2%)	51	(100.0%)
	Medical Expense	365	(61.4%)	25	(4.1%)	205	(34.5%)	594	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15i. 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
Public Housing	Earned Income	112	(33.0%)	73	(21.6%)	154	(45.3%)	339	(100.0%)
	Pension, Etc.	169	(30.4%)	61	(11.0%)	326	(58.6%)	557	(100.0%)
	Public Assistance	36	(33.6%)	16	(15.1%)	55	(51.4%)	107	(100.0%)
	Other Income	94	(56.5%)	12	(7.1%)	61	(36.3%)	167	(100.0%)
	Asset Income	49	(38.3%)	8	(6.0%)	71	(55.7%)	128	(100.0%)
	Child Care Expense	14	(47.7%)	4	(12.4%)	12	(39.8%)	29	(100.0%)
	Disability Expense			1	(100.0%)			1	(100.0%)
	Medical Expense	90	(42.1%)	33	(15.5%)	90	(42.4%)	213	(100.0%)
PHA-Administered Section 8	Earned Income	249	(34.6%)	134	(18.6%)	336	(46.8%)	718	(100.0%)
	Pension, Etc.	228	(23.2%)	80	(8.2%)	672	(68.6%)	979	(100.0%)
	Public Assistance	88	(38.3%)	32	(14.0%)	110	(47.7%)	231	(100.0%)
	Other Income	212	(46.3%)	35	(7.5%)	212	(46.2%)	459	(100.0%)
	Asset Income	102	(51.7%)	1	(.5%)	94	(47.7%)	198	(100.0%)
	Child Care Expense	27	(22.5%)	11	(9.3%)	82	(68.2%)	121	(100.0%)
	Medical Expense	101	(38.0%)	14	(5.3%)	151	(56.7%)	266	(100.0%)
Owner-Administered	Earned Income	67	(28.0%)	25	(10.2%)	149	(61.8%)	241	(100.0%)
	Pension, Etc.	314	(33.0%)	76	(8.0%)	563	(59.1%)	953	(100.0%)
	Public Assistance	34	(31.4%)	3	(2.3%)	72	(66.2%)	109	(100.0%)
	Other Income	93	(48.1%)	9	(4.5%)	91	(47.4%)	193	(100.0%)
	Asset Income	126	(32.9%)	17	(4.4%)	240	(62.7%)	383	(100.0%)
	Child Care Expense	4	(7.5%)	4	(8.3%)	43	(84.2%)	51	(100.0%)
	Medical Expense	316	(53.1%)	36	(6.0%)	243	(40.9%)	594	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15j. 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
Public Housing	Earned Income	333	(98.2%)	3	(1.0%)	3	(.8%)	339	(100.0%)
	Pension, Etc.	557	(100.0%)					557	(100.0%)
	Public Assistance	105	(98.7%)			1	(1.3%)	107	(100.0%)
	Other Income	166	(99.3%)			1	(.7%)	167	(100.0%)
	Asset Income	128	(100.0%)					128	(100.0%)
	Child Care Expense	29	(100.0%)					29	(100.0%)
	Disability Expense	1	(100.0%)					1	(100.0%)
	Medical Expense	213	(100.0%)					213	(100.0%)
PHA-Administered Section 8	Earned Income	700	(97.5%)	6	(.9%)	12	(1.7%)	718	(100.0%)
	Pension, Etc.	973	(99.4%)			6	(.6%)	979	(100.0%)
	Public Assistance	229	(99.1%)			2	(.9%)	231	(100.0%)
	Other Income	457	(99.5%)	2	(.5%)			459	(100.0%)
	Asset Income	196	(99.0%)			2	(1.0%)	198	(100.0%)
	Child Care Expense	119	(98.2%)			2	(1.8%)	121	(100.0%)
	Medical Expense	266	(100.0%)					266	(100.0%)
Owner-Administered	Earned Income	235	(97.7%)	2	(.8%)	4	(1.5%)	241	(100.0%)
	Pension, Etc.	951	(99.8%)			2	(.2%)	953	(100.0%)
	Public Assistance	107	(97.4%)			3	(2.6%)	109	(100.0%)
	Other Income	193	(100.0%)					193	(100.0%)
	Asset Income	383	(100.0%)					383	(100.0%)
	Child Care Expense	51	(100.0%)					51	(100.0%)
	Medical Expense	591	(99.4%)			4	(.6%)	594	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15k. 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
Public Housing	Earned Income	288	(85.0%)	25	(7.4%)	26	(7.6%)	339	(100.0%)
	Pension, Etc.	476	(85.5%)	19	(3.4%)	62	(11.1%)	557	(100.0%)
	Public Assistance	87	(81.2%)	5	(5.0%)	15	(13.7%)	107	(100.0%)
	Other Income	133	(79.8%)	10	(5.8%)	24	(14.3%)	167	(100.0%)
	Asset Income	105	(82.6%)	2	(1.8%)	20	(15.6%)	128	(100.0%)
	Child Care Expense	24	(81.1%)	4	(12.3%)	2	(6.6%)	29	(100.0%)
	Disability Expense	1	(100.0%)					1	(100.0%)
	Medical Expense	184	(86.3%)	8	(3.8%)	21	(9.9%)	213	(100.0%)
PHA-Administered Section 8	Earned Income	584	(81.3%)	61	(8.5%)	73	(10.2%)	718	(100.0%)
	Pension, Etc.	850	(86.8%)	12	(1.2%)	117	(11.9%)	979	(100.0%)
	Public Assistance	180	(78.0%)	24	(10.4%)	27	(11.6%)	231	(100.0%)
	Other Income	354	(77.2%)	24	(5.1%)	81	(17.6%)	459	(100.0%)
	Asset Income	119	(60.1%)	9	(4.6%)	70	(35.3%)	198	(100.0%)
	Child Care Expense	109	(90.4%)	2	(1.6%)	10	(8.1%)	121	(100.0%)
	Medical Expense	224	(84.5%)	15	(5.5%)	27	(10.0%)	266	(100.0%)
Owner-Administered	Earned Income	206	(85.4%)	7	(2.7%)	29	(11.8%)	241	(100.0%)
	Pension, Etc.	758	(79.5%)	14	(1.5%)	181	(19.0%)	953	(100.0%)
	Public Assistance	94	(85.6%)	3	(3.1%)	12	(11.3%)	109	(100.0%)
	Other Income	148	(76.6%)	12	(6.2%)	33	(17.2%)	193	(100.0%)
	Asset Income	342	(89.2%)	3	(.9%)	38	(10.0%)	383	(100.0%)
	Child Care Expense	47	(92.5%)			4	(7.5%)	51	(100.0%)
	Medical Expense	509	(85.7%)	8	(1.3%)	77	(13.0%)	594	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 15I. 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
Public Housing	Earned Income	314	(92.7%)	21	(6.3%)	4	(1.0%)	339	(100.0%)
	Pension, Etc.	376	(67.6%)	32	(5.7%)	149	(26.8%)	557	(100.0%)
	Public Assistance	105	(98.4%)	2	(1.6%)			107	(100.0%)
	Other Income	166	(99.1%)			2	(.9%)	167	(100.0%)
	Asset Income	128	(100.0%)					128	(100.0%)
	Child Care Expense	29	(100.0%)					29	(100.0%)
	Disability Expense	1	(100.0%)					1	(100.0%)
	Medical Expense	174	(81.9%)	13	(6.3%)	25	(11.9%)	213	(100.0%)
PHA-Administered Section 8	Earned Income	665	(92.6%)	48	(6.7%)	5	(.7%)	718	(100.0%)
	Pension, Etc.	590	(60.3%)	28	(2.8%)	361	(36.9%)	979	(100.0%)
	Public Assistance	231	(100.0%)					231	(100.0%)
	Other Income	459	(100.0%)					459	(100.0%)
	Asset Income	198	(100.0%)					198	(100.0%)
	Child Care Expense	121	(100.0%)					121	(100.0%)
	Medical Expense	244	(91.9%)	4	(1.4%)	18	(6.7%)	266	(100.0%)
Owner-Administered	Earned Income	241	(100.0%)					241	(100.0%)
	Pension, Etc.	750	(78.7%)	23	(2.4%)	180	(18.9%)	953	(100.0%)
	Public Assistance	109	(100.0%)					109	(100.0%)
	Other Income	193	(100.0%)					193	(100.0%)
	Asset Income	383	(100.0%)					383	(100.0%)
	Child Care Expense	51	(100.0%)					51	(100.0%)
	Medical Expense	579	(97.4%)	2	(.3%)	14	(2.3%)	594	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	2,433	(86.5%)	1,246	(94.4%)	3,679	(89.0%)
	w/Error	380	(13.5%)	74	(5.6%)	454	(11.0%)
Pensions, Etc.	No Error	2,472	(87.9%)	1,096	(83.0%)	3,568	(86.3%)
	w/Error	341	(12.1%)	224	(17.0%)	565	(13.7%)
Public Assistance	No Error	2,695	(95.8%)	1,305	(98.8%)	4,000	(96.8%)
	w/Error	118	(4.2%)	15	(1.2%)	133	(3.2%)
Other Income	No Error	2,559	(91.0%)	1,247	(94.5%)	3,806	(92.1%)
	w/Error	254	(9.0%)	73	(5.5%)	327	(7.9%)
Asset Income	No Error	2,674	(95.1%)	1,189	(90.1%)	3,863	(93.5%)
	w/Error	139	(4.9%)	131	(9.9%)	270	(6.5%)
Child Care Expense	No Error	2,730	(97.0%)	1,303	(98.7%)	4,033	(97.6%)
	w/Error	83	(3.0%)	17	(1.3%)	100	(2.4%)
Disability Expense	No Error	2,807	(99.8%)	1,313	(99.5%)	4,121	(99.7%)
	w/Error	6	(.2%)	7	(.5%)	12	(.3%)
Medical Expense	No Error	2,534	(90.1%)	1,031	(78.1%)	3,565	(86.3%)
	w/Error	279	(9.9%)	289	(21.9%)	568	(13.7%)
All Components	No Error	1,829	(65.0%)	867	(65.7%)	2,696	(65.2%)
	w/Error	984	(35.0%)	453	(34.3%)	1,437	(34.8%)
Total		2,813	(100.0%)	1,320	(100.0%)	4,133	(100.0%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
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	122	(32.0%)	17	(22.4%)	138	(30.4%)
	Not Verified	259	(68.0%)	57	(77.6%)	316	(69.6%)
Pension, Etc.	Verified	61	(17.8%)	44	(19.6%)	105	(18.5%)
	Not Verified	280	(82.2%)	180	(80.4%)	461	(81.5%)
Public Assistance	Verified	52	(44.0%)	1	(9.7%)	53	(40.1%)
	Not Verified	66	(56.0%)	14	(90.3%)	80	(59.9%)
Other Income	Verified	63	(24.9%)	8	(10.5%)	71	(21.7%)
	Not Verified	191	(75.1%)	65	(89.5%)	256	(78.3%)
Asset Income	Verified	31	(22.2%)	24	(18.6%)	55	(20.5%)
	Not Verified	108	(77.8%)	107	(81.4%)	215	(79.5%)
Child Care Expense	Verified	8	(10.1%)	5	(30.1%)	13	(13.4%)
	Not Verified	75	(89.9%)	12	(69.9%)	86	(86.6%)
Disability Expense	Verified	1	(23.7%)			1	(10.9%)
	Not Verified	4	(76.3%)	7	(100.0%)	11	(89.1%)
Medical Expense	Verified	35	(12.6%)	26	(9.0%)	61	(10.8%)
	Not Verified	244	(87.4%)	262	(91.0%)	507	(89.2%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 17. Administrative Error: Number & Percent of Households, Average Dollars in Error
For Households with Recalculated 50058/59 Rent Error and Households with QC Rent Error by Administrative Error Type

	Households with Recalculated 50058/59 Rent Error			Households with QC Rent Error		
	# of Households in Error	% of Households in Error	Average Gross Dollar Error	# of Households in Error	% of Households in Error	Average Gross Dollar Error
Transcription Error	137	(52.7%)	32.24	999	(65.8%)	45.26
No Transcription Error	123	(47.3%)	22.53	519	(34.2%)	37.36
Consistency Error	91	(35.2%)	40.53	308	(20.3%)	48.52
No Consistency Error	168	(64.8%)	20.66	1,210	(79.7%)	41.04
Allowances Calculation Error	18	(7.1%)	91.56	47	(3.1%)	46.09
No Allowances Calculation Error	241	(92.9%)	22.79	1,471	(96.9%)	42.45
Income Calculation Error	6	(2.2%)	1.00	28	(1.9%)	44.71
No Income Calculation Error	254	(97.8%)	28.25	1,490	(98.1%)	42.52
Other Calculation Error	20	(7.7%)	77.67	111	(7.3%)	54.51
No Other Calculation Error	240	(92.3%)	23.50	1,407	(92.7%)	41.62
Overdue Recertification	6	(2.4%)	11.94	38	(2.5%)	85.63
On-time Recertification	207	(79.6%)	26.14	1,224	(80.6%)	40.75
Certification	47	(18.0%)	36.46	256	(16.9%)	44.86
Any Admin/proc Error	178	(68.6%)	27.46	1,133	(74.6%)	44.65
No Admin/proc Error	82	(31.4%)	28.06	385	(25.4%)	36.41
Total Households	259	(100.0%)	27.65	1,518	(100.0%)	42.56

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 18. Administrative Error: Number & Percent of Households, Average Dollars in Error
For All Households by Administrative Error Type

	Gross QC Rent Error			Net QC Rent Error		
	# of Households	% of Households	Average Dollar Error	# of Households	% of Households	Average Dollar Error
Transcription Error	1,783	(43.1%)	25.80	1,783	(43.1%)	-2.32
No Transcription Error	2,350	(56.9%)	8.56	2,350	(56.9%)	-1.50
Consistency Error	743	(18.0%)	20.57	743	(18.0%)	-2.34
No Consistency Error	3,390	(82.0%)	14.99	3,390	(82.0%)	-1.75
Allowances Calculation Error	86	(2.1%)	25.55	86	(2.1%)	3.20
No Allowances Calculation Error	4,047	(97.9%)	15.79	4,047	(97.9%)	-1.96
Income Calculation Error	82	(2.0%)	15.93	82	(2.0%)	9.12
No Income Calculation Error	4,051	(98.0%)	16.00	4,051	(98.0%)	-2.07
Other Calculation Error	245	(5.9%)	24.91	245	(5.9%)	-8.53
No Other Calculation Error	3,888	(94.1%)	15.43	3,888	(94.1%)	-1.43
Overdue Recertification	70	(1.7%)	46.90	70	(1.7%)	-18.92
On-time Recertification	3,436	(83.1%)	14.88	3,436	(83.1%)	-1.42
Certification	627	(15.2%)	18.64	627	(15.2%)	-2.29
Any Admin/proc Error	2,246	(54.4%)	22.92	2,246	(54.4%)	-2.60
No Admin/proc Error	1,887	(45.6%)	7.75	1,887	(45.6%)	-.96
Total	4,133	(100.0%)	15.99	4,133	(100.0%)	-1.85

2009.10.06 [Weighted]

HUD QC FY 2008
Table 19. Occupancy Standards on Form 50058/59

		PUBLIC HOUSING		PHA-ADMINISTERED 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	2	(3.6%)			1	(2.0%)	4	(2.0%)
	1	2	(.5%)	8	(1.6%)	6	(.7%)	15	(.9%)
	2	9	(3.0%)	13	(2.0%)			22	(1.8%)
	3	2	(1.0%)	8	(1.5%)	3	(2.5%)	12	(1.5%)
	4			2	(2.2%)			2	(1.3%)
	All Units	14	(1.5%)	31	(1.7%)	10	(.7%)	55	(1.3%)
CORRECT	0	55	(96.4%)	42	(100.0%)	71	(98.0%)	169	(98.0%)
	1	359	(99.5%)	477	(98.4%)	847	(99.3%)	1,682	(99.1%)
	2	219	(76.5%)	489	(73.2%)	221	(78.8%)	929	(75.2%)
	3	146	(75.1%)	482	(86.3%)	78	(77.1%)	706	(82.7%)
	4	33	(64.4%)	66	(67.6%)	3	(20.9%)	101	(62.8%)
	5+	2	(48.2%)	6	(74.0%)			8	(65.8%)
	All Units	813	(85.4%)	1,562	(84.0%)	1,220	(92.4%)	3,594	(87.0%)
OVER-HOUSED	2	59	(20.5%)	166	(24.8%)	59	(21.2%)	284	(23.0%)
	3	46	(23.9%)	68	(12.2%)	21	(20.5%)	135	(15.8%)
	4	18	(35.6%)	29	(30.2%)	10	(79.1%)	58	(35.8%)
	5+	2	(51.8%)	2	(26.0%)			4	(34.2%)
	All Units	125	(13.1%)	265	(14.3%)	90	(6.8%)	481	(11.6%)

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Quality Control Data

HUD QC FY 2008
Table 19a. Frequency & Percent of All Households
by Number of Bedrooms and Number of Household Members

| | Number of Household Members | | | | | | | | | | | | | | | | | | | |
| | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | | 7 | | 8 | | 9 | | 10 | |
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
0	169	98.0%	4	2.0%																
1	1527	90.0%	155	9.1%	15	.9%														
2	284	23.0%	512	41.5%	332	26.9%	85	6.9%	19	1.5%	3	.2%								
3	48	5.7%	87	10.2%	299	35.1%	254	29.8%	126	14.8%	27	3.1%	6	.7%	6	.7%				
4	1	.7%	5	3.1%	19	11.9%	32	20.1%	50	30.8%	24	15.1%	24	15.2%	3	1.7%	2	1.3%		
5+							1	4.6%	4	29.6%			3	27.2%	2	17.2%	2	14.5%	1	7.0%

2009.10.06 [Weighted]

Appendix C—Source Tables Based on Tenant File Data

HUD QC FY 2008 [Tenant File]
Table 2. Percent 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	95	(9.9%)	(23.2%)	730	(76.5%)	(22.5%)	129	(13.5%)	(27.3%)	954	(100.0%)	(23.1%)
	Section 8	194	(10.5%)	(47.5%)	1,421	(76.5%)	(43.7%)	242	(13.0%)	(51.4%)	1,858	(100.0%)	(45.0%)
	Total	289	(10.3%)	(70.7%)	2,152	(76.5%)	(66.2%)	371	(13.2%)	(78.7%)	2,812	(100.0%)	(68.1%)
OWNER ADMINISTERED	Owner-Administered	120	(9.1%)	(29.3%)	1,100	(83.3%)	(33.8%)	100	(7.6%)	(21.3%)	1,320	(100.0%)	(31.9%)
	Total	120	(9.1%)	(29.3%)	1,100	(83.3%)	(33.8%)	100	(7.6%)	(21.3%)	1,320	(100.0%)	(31.9%)
Total		409	(9.9%)	(100.0%)	3,252	(78.7%)	(100.0%)	472	(11.4%)	(100.0%)	4,132	(100.0%)	(100.0%)

2009.09.28 [Weighted]

HUD QC FY 2008 [Tenant File]
Table 2(S). Percent 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	133	(14.0%)	(21.6%)	612	(64.2%)	(22.0%)	208	(21.8%)	(28.7%)	954	(100.0%)	(23.1%)
	Section 8	301	(16.2%)	(48.8%)	1,206	(64.9%)	(43.2%)	351	(18.9%)	(48.4%)	1,858	(100.0%)	(45.0%)
	Total	434	(15.5%)	(70.4%)	1,818	(64.7%)	(65.2%)	559	(19.9%)	(77.1%)	2,812	(100.0%)	(68.1%)
OWNER ADMINISTERED	Owner-Administered	183	(13.9%)	(29.6%)	971	(73.6%)	(34.8%)	166	(12.6%)	(22.9%)	1,320	(100.0%)	(31.9%)
	Total	183	(13.9%)	(29.6%)	971	(73.6%)	(34.8%)	166	(12.6%)	(22.9%)	1,320	(100.0%)	(31.9%)
Total		617	(14.9%)	(100.0%)	2,789	(67.5%)	(100.0%)	726	(17.6%)	(100.0%)	4,132	(100.0%)	(100.0%)

HUD QC FY 2008 [Tenant File]
Table 3. Dollar Rent Error by Program Type

		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	953	(23.1%)	230,113	241.52	954	(23.1%)	229,015	240.05	954	(23.1%)	14,271	14.96
	Section 8	1,858	(45.0%)	377,017	202.92	1,858	(45.0%)	372,086	200.26	1,858	(45.0%)	29,310	15.78
	Total	2,811	(68.0%)	607,130	216.00	2,812	(68.1%)	601,101	213.76	2,812	(68.1%)	43,581	15.50
OWNER ADMINISTERED	Owner-Administered	1,320	(32.0%)	293,097	222.04	1,320	(31.9%)	292,339	221.47	1,320	(31.9%)	8,629	6.54
	Total	1,320	(32.0%)	293,097	222.04	1,320	(31.9%)	292,339	221.47	1,320	(31.9%)	8,629	6.54
Total		4,131	(100.0%)	900,228	217.93	4,132	(100.0%)	893,440	216.22	4,132	(100.0%)	52,211	12.64

2009.09.28 [Weighted]

HUD QC FY 2008 [Tenant File]
Table 4. 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)	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	95	(23.2%)	6,362	67.05	129	(27.3%)	7,909	61.36	954	(23.1%)	229,015	240.05
	Section 8	194	(47.5%)	12,176	62.65	242	(51.4%)	17,134	70.70	1,858	(45.0%)	372,086	200.26
	Total	289	(70.7%)	18,538	64.09	371	(78.7%)	25,044	67.46	2,812	(68.1%)	601,101	213.76
OWNER ADMINISTERED	Owner-Administered	120	(29.3%)	3,924	32.80	100	(21.3%)	4,706	46.88	1,320	(31.9%)	292,339	221.47
	Total	120	(29.3%)	3,924	32.80	100	(21.3%)	4,706	46.88	1,320	(31.9%)	292,339	221.47
Total		409	(100.0%)	22,462	54.94	472	(100.0%)	29,749	63.08	4,132	(100.0%)	893,440	216.22

2009.09.28 [Weighted]

HUD QC FY 2008 [Tenant File]
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)				DC RENT (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	133	(21.6%)	6,447	48.39	208	(28.7%)	8,036	38.57	954	(23.1%)	229,015	240.05
	Section 8	301	(48.8%)	12,432	41.27	351	(48.4%)	17,363	49.46	1,858	(45.0%)	372,086	200.26
	Total	434	(70.4%)	18,879	43.45	559	(77.1%)	25,398	45.40	2,812	(68.1%)	601,101	213.76
OWNER ADMINISTERED	Owner-Administered	183	(29.6%)	4,088	22.36	166	(22.9%)	4,846	29.15	1,320	(31.9%)	292,339	221.47
	Total	183	(29.6%)	4,088	22.36	166	(22.9%)	4,846	29.15	1,320	(31.9%)	292,339	221.47
Total		617	(100.0%)	22,967	37.21	726	(100.0%)	30,245	41.68	4,132	(100.0%)	893,440	216.22

2009.09.28 [Weighted]

		GROSS RENT ERROR (MONTHLY)				NET RENT ERROR (MONTHLY)				DC RENT (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	954	(23.1%)	14,271	14.96	954	(23.1%)	1,548	1.62	954	(23.1%)	229,015	240.05
	Section 8	1,858	(45.0%)	29,310	15.78	1,858	(45.0%)	4,958	2.67	1,858	(45.0%)	372,086	200.26
	Total	2,812	(68.1%)	43,581	15.50	2,812	(68.1%)	6,506	2.31	2,812	(68.1%)	601,101	213.76
OWNER ADMINISTERED	Owner-Administered Total	1,320	(31.9%)	8,629	6.54	1,320	(31.9%)	782	.59	1,320	(31.9%)	292,339	221.47
		1,320	(31.9%)	8,629	6.54	1,320	(31.9%)	782	.59	1,320	(31.9%)	292,339	221.47
Total		4,132	(100.0%)	52,211	12.64	4,132	(100.0%)	7,288	1.76	4,132	(100.0%)	893,440	216.22

2009.09.28 [Weighted]

HUD QC FY 2008 [Tenant File]
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)				DC RENT (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	954	(23.1%)	14,483	15.18	954	(23.1%)	1,588	1.66	954	(23.1%)	229,015	240.05
	Section 8	1,858	(45.0%)	29,794	16.04	1,858	(45.0%)	4,931	2.65	1,858	(45.0%)	372,086	200.26
	Total	2,812	(68.1%)	44,277	15.75	2,812	(68.1%)	6,519	2.32	2,812	(68.1%)	601,101	213.76
OWNER ADMINISTERED	Owner-Administered	1,320	(31.9%)	8,935	6.77	1,320	(31.9%)	758	.57	1,320	(31.9%)	292,339	221.47
	Total	1,320	(31.9%)	8,935	6.77	1,320	(31.9%)	758	.57	1,320	(31.9%)	292,339	221.47
Total		4,132	(100.0%)	53,212	12.88	4,132	(100.0%)	7,278	1.76	4,132	(100.0%)	893,440	216.22

2009.09.28 [Weighted]

Appendix D—Consistency and Calculation Errors

Appendix D—Consistency and Calculation Errors

50058—Consistency Errors

50058 ITEM	ERROR
General Information:	
1c. Program	Must equal P, CE, 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

Appendix D—Consistency and Calculation Errors

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:
	  - Contract Rent to Owner must be completed
	  - Tenant Rent (13k), or Mixed Family Tenant Rent (13x) must be completed;
	  - Sections 10, 11, 12, and 14 must be blank.

Appendix D—Consistency/Calculations

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 33 < Item 111

Appendix D—Consistency/Calculations

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

Appendix D—Consistency/Calculations

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

Appendix D—Consistency/Calculations

50059 - Calculation Errors

50059 ITEM	ERROR CALCULATION
Household Composition:	
51. Age	Must equal age calculated based on Date of Birth (46) and Effective Date of Action (13)
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

Appendix D—Consistency/Calculations

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 Rent	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 (PSQ) was created to obtain project level information regarding project characteristics and practices that promote accurate (re)certifications, to identify difficulties experienced by PHAs/projects, and to identify areas of potential improvement. The PSQ is a self-administered questionnaire sent to project managers and executive directors of PHA/projects included in the FY 2008 study. Sections of the questionnaire covered the number and type of staff in the project, staff training for both new and experienced staff, procedures for communicating policy change information from HUD, methods to ensure quality control, methods of household information extraction, and procedures and difficulties in verification of information.

A. Methodology

The PSQ was mailed in February 2009 to the executive director or manager of each PHA/project, and respondents mailed their completed questionnaires back to Macro headquarters. For those PHA/projects who did not return the PSQ, Macro staff followed up, by making phone calls to request the hard copy document be returned by mail or by fax. In instances where these requests were not successful, during subsequent follow up contacts (both by phone and by email), Macro staff offered to send electronic versions of the questionnaire to PHA/projects to facilitate a prompt response. Overall, Macro's efforts lead to a response rate of 99.8 percent, with only one project out of 546 not responding. After PSQs were completed and returned to headquarters, Macro staff developed and implemented editing instructions to verify and correct all items in the PSQ with respect to validity of responses and accuracy of the skip patterns. 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. After the data entry was complete, the responses were scrutinized further using SPSS 15 prior to analyzing the data.

B. Results

Number and Type of Staff. (Re)certification staff 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 recertifications. In FY 2008, PHA/projects had on average 152 units per staff member responsible for certifying and recertifying households, increasing from FY 2007 with 145 units per staff member. Owner-administered projects had the lowest unit to staff ratio (99 units per staff member), while PHA-administered Section 8 projects had the highest unit to staff ratio (216 units per staff member). Public Housing projects were in the middle with a ratio of 158 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).

Appendix E—Project Staff Questionnaire Descriptive Analysis

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	157.5	215.6	99.4	151.5
Median Ratio	110.3	205.8	68.5	100.0
Units per All Project Staff Members				
Average Ratio	60.5	105.8	41.4	65.5
Median Ratio	31.0	90.1	37.8	30.0
Total Number of PHA/projects	201	144	200	545

In previous years' studies, the questionnaire asked PHA/projects about the number of staff they employ, including full and part time. This year's study attempts to distinguish the number of staff that work on the specific project included in the HUDQC study compared to the number of staff that the entire PHA/project employs. The *Units per Project Staff Member* refers to the number of staff that work on the specific project and while similar to previous year ratios, should be compared with caution.

Of those staff members, a majority of them worked on a variety of tasks in addition to working on (re)certifications. PHA-administered Section 8 projects were most likely to have staff work primarily on (re)certifications, with 20 percent of staff working mostly on (re)certifications, and owner-administered projects were most likely to have their staff multi-task on other responsibilities, with only 8 percent working mostly on (re)certifications. Overall, 10 percent of all projects had staff work mostly on (re)certifications, down from about 13 percent in FY 2007, and 78 percent of all projects had staff work on a variety of tasks, up from 71 percent in FY 2007.

Most PHA/projects had staff with more than one year of experience working with (re)certifications. All three program types had similar percentages of (re)certification staff with over one year of experience. However, when looking at the percentage of staff with over 5 years of experience, PHA-administered Section 8 projects drop down to 65 percent, while both Public Housing and owner-administered projects stay above 70 percent. Total rates of staff with 1 or 5 years of experience were little changed from FY 2007. The number of (re)certification staff that had a caseload of specific tenants increased in FY 2008 to 57 percent from 54.6 percent in FY 2007. Exhibit E-1b breaks down the percentages by program type.

Appendix E—Project Staff Questionnaire Descriptive Analysis

Exhibit E-1b.
Percentage of Staff Who Have Worked with (Re)certifications for Over 1 Year and 5 Years,
by Program Type

	Program Type			
	Public Housing	**administered Section 8**	**Owner-administered**	**Total**
(Re)certification staff with over 1 year experience	86.7%	83.6%	88.0%	86.3%
(Re)certification staff with over 5 years experience	70.5%	65.0%	76.5%	70.8%

The minimum education requirements also remained little changed from the previous year, with a majority of PHA/projects at 64 percent requiring a High School Diploma or equivalent when hiring new staff who will be working with (re)certifications. Overall, only about 7 percent of PHAs/projects did not require some education. However, the percentage of PHA/projects requiring a 4 year college degree or equivalent increased slightly to 14 percent from 12 percent in FY 2007. Owner-administered projects were most likely not to require any education at about 11 percent, while Public Housing and PHA-administered Section 8 projects were least likely at 4 percent.

In addition to minimum education requirements, PHAs/projects also in general had other minimum requirements when hiring new staff to work with (re)certifications. The percent of PHA/projects who required various skills, training, and certifications remained relatively the same compared to FY 2007. Overall, 79 percent of PHAs/projects required some computer skills, 74 percent required background checks, 70 percent required administrative or clerical experience, and 63 percent required math or logic skills. The requirements that were least important to PHA/projects were: special housing related training or certification (35 percent), and other housing related experience (48 percent). This shows an emphasis on general office skills and experience over more specific housing related experience. Despite being less likely to have minimum education requirements, owner-administered projects were significantly more likely to have other minimum requirements in most categories than their Public Housing and PHA-administered Section 8 counterparts. Exhibit E-1c and E-1d describe the minimum requirements reported by the PHA/projects for education and other requirements, by program type.

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

	Program Type			
	Public Housing	**administered Section 8**	**Owner-administered**	**Total**
No Minimum Requirements	3.9%	4.0%	11.1%	6.6%
High School/GED	56.1%	65.1%	70.0%	63.6%
Associates/2 years college/some college	7.8%	7.1%	10.6%	8.6%
Bachelor's Degree	20.0%	16.7%	6.7%	14.2%

Appendix E—Project Staff Questionnaire Descriptive Analysis

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

	Program Type			
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Computer Skills	71.1%	81.9%	85.0%	79.1%
Background Checks	67.2%	70.1%	83.0%	73.8%
Administrative or Clerical Experience	69.2%	64.6%	73.5%	69.5%
Math or Logic Skills	58.7%	62.5%	67.5%	62.9%
Other Housing Related Experience	38.3%	46.5%	59.0%	48.1%
Special Housing Related Training or Certification	30.8%	28.5%	44.0%	35.0%

Training of New (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. While the percent of PHA/projects who assigned new staff dropped from 38 percent to 34 percent in FY 2008, the average number of new staff who were assigned to conduct (re)certifications overall remained the same at 2.2 staff per PHA/project. While the average number of new staff remained the same, the average number of hours of training received by each new (re)certification staff increased from 92 hours on average to 109 hours on average, which is similar to the training received in FY 2005, at 106 hours on average. PHA-administered Section 8 programs reported the largest proportion of new (re)certification staff members (51%), 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 (130 hours).

Exhibit E-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	1.1	3.7	1.2	2.2
Average number of training hours received by each new (re)certification staff	72.9	129.8	119.4	108.7
Percent of PHA/projects with new (re)certification staff	29.5%	50.7%	26.6%	34.1%

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 (94% of PHA/projects), training sessions with the supervisor (86% of PHA/projects), and self training through manuals, videos, or informal questions (57% of PHA/projects). These remained unchanged from FY 2007.

Appendix E—Project Staff Questionnaire Descriptive Analysis

Exhibit E-2b.
Three Most Frequently Used Training 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	88.1%	95.9%	98.1%	94.0%
Supervisor/senior staff held training sessions with new staff explaining procedures	78.0%	89.1%	90.6%	86.0%
Read HUD/PHA/owner manual, watched videos, or asked informal questions	50.8%	61.6%	56.5%	56.8%

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. Eighty percent of PHA/projects provided training of some form for their experienced (re)certification staff in the past 12 months. On average, PHA/projects trained 4 experienced staff members for an average of 31 hours during the year, slightly less than in FY 2007. PHA-administered Section 8 projects trained the most number of experienced staff (9 on average), and provided the most hours of training (33 hours, on average). Owner-administrated projects trained the fewest number of experienced staff (2), but the amount of training was comparable to PHA-administered Section 8 projects. 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	2.0	8.5	1.8	3.8
Average number of training hours received by each experienced (re)certification staff	23.2	33.3	34.9	30.6
Percent of PHA/projects that trained Experienced (Re)Certification STAFF	71.1%	89.6%	81.5%	79.8%

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 in reverse order of frequency. On average, 82 percent of PHA/projects used self-training through manuals, videos, and informal questions to train (re)certification staff, 60 percent used training sessions conducted by a supervisor/senior staff, and 52 percent used experienced staff to work one-on-one with other experienced staff. The use of self-training was more prevalent for training experienced staff than for new staff, and PHA/projects also were less likely to work one-on-one with experienced staff as well. The percent of PHA/projects who usually or always used tele-courses or Internet/web-based training increased to 25 percent from 20 percent in FY 2007. For more detailed figures by individual program type, please refer to Exhibit E-3b.

Appendix E—Project Staff Questionnaire Descriptive Analysis

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	78.4%	80.7%	85.8%	81.8%
Had supervisor/senior staff hold training sessions with new staff explaining procedures	54.6%	69.8%	58.3%	60.4%
Had experienced staff work one-on-one with other experienced staff to conduct (re)certifications	42.0%	55.9%	57.7%	51.9%

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

The top three topics most frequently covered in training for experienced staff were covered in training over 90 percent of the time, and were the same as in FY 2007. Training related to general HUD policies and rules for conducting (re)certifications and tools available in the PHA/project were covered about 95 percent of the time, and training related to HUD or PHA/project changes in polices or procedures relating to (re)certifications were covered about 93 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
HUD policies and rules for conducting (re)certifications	95.1%	92.2%	96.9%	94.9%
Changes in HUD or PHA/project policies or procedures related to (re)certifications	96.5%	98.4%	90.8%	94.9%
Tools available in the PHA/project (e.g., software, forms) to help in conducting (re)certifications	90.2%	96.1%	93.9%	93.3%

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

Transfer of Information about Changes in HUD Policies. This year's questions regarding methods used to inform staff about changes in HUD eligibility and rent calculation policies asked respondents to answer yes or no to the use of various methods instead of asking them to check all that apply. The result was a change in the percent that responded positively. However, the most utilized methods remained the same. Due to this structural change in the question, responses between years are not comparable. In both FY 2007 and FY 2008, the most commonly used methods in order of usage were: one-on-one discussions between supervisors and staff (29 percent in FY 2008), through staff meetings (28 percent in FY 2008), detailed staff memos describing changes (27 percent in FY 2008), and distributing to the staff copies of HUD announcements (25 percent in FY 2008). PHA Section 8 projects were most likely to respond that they had used any method, as shown in Exhibit E-4a.

Appendix E—Project Staff Questionnaire Descriptive Analysis

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 and staff	25.9%	34.0%	28.5%	29.0%
Staff Meetings	23.4%	35.4%	27.0%	27.9%
Detailed staff memo describing changes	23.4%	34.0%	25.0%	26.8%
Copies of HUD announcement distributed to staff	19.4%	29.9%	27.5%	25.1%

PHA/projects implemented many changes in policy or procedures that affected household eligibility or rent calculations. The most commonly cited were the Violence Against Women Act, Utility Allowance changes, Student Eligibility status, Flat Rent changes, and EIV changes.

When PHA/projects had questions concerning HUD policies, they used a variety of methods to seek answers. Similar to the question regarding methods of information communication, the question regarding methods used to seek answers about HUD policies changed in structure. The question asked respondents to answer yes or no to the use of various methods instead of asking them to check all that apply. The result was a change in the percent that responded positively. Thus, results year to year are not comparable. However, referring to the HUD/PHA/owner-administered manual remained the most used method for getting answers at 92 percent. The second most used method was figuring out the answer for themselves at 84 percent, and 74 percent used Internet/web-based information/training, which increased significantly. 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	84.1%	99.3%	95.5%	92.3%
Figured the answer out for themselves	80.1%	85.4%	85.5%	83.5%
Used Internet, web-based information or training	61.2%	90.3%	75.5%	74.1%
Asked HUD field office or other HUD staff	64.2%	91.0%	71.0%	73.8%

Quality Control via Work Monitoring. A majority of PHA/projects usually or always have the team leader or supervisor monitor (re)certification work (67 percent). Of the remaining methods, PHA/projects used outside auditors (33 percent), staff auditors (32 percent), and co-workers (30 percent) as well. 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 (75 percent) in both FY 2007 and FY 2008. However, using

computer programs (70 percent) increased about 4 percent from FY 2007 to become the second most used method. Using a pre-designed form to check key steps came in third at 62 percent. Other commonly used techniques were making individualized notes for each case reviewed (55 percent), and discussing the (re)certification with staff after completion (49 percent) as shown in Exhibit E-5a. The least used technique was sitting in on the interview with the client (13 percent).

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

PHA/projects Usually or Always	Program Type			Total
	Public Housing	PHA-administered Section 8	Owner-administered	
Review files after completion	68.2%	85.4%	73.0%	74.5%
Use computer program	61.2%	69.4%	78.5%	69.7%
Use pre-designed form to check key steps	66.7%	76.4%	75.0%	62.3%
Make individualized notes for each case reviewed	50.8%	54.1%	58.5%	54.5%
Discuss (re)certification with staff after completion	44.4%	46.5%	53.5%	48.5%
Sit in on the interview with the client	15.5%	10.5%	12.0%	12.8%

In determining which cases to select for review, PHA/projects most frequently randomly spot checked a percentage of all cases (67 percent). Overall, 33 percent of PHA/projects reported reviewing all cases, same as in FY 2007. Other methods commonly used to select cases for review were: checking (re)certifications conducted by new staff (44 percent) and checking certain cases completed within a given period (36 percent).

Upon reviewing (re)certifications through the various methods above, PHA/projects found the most errors in calculating rent, with 77 percent of PHA/projects reporting finding errors occasionally, usually, or always. Sixty-seven percent of PHA/projects occasionally, usually, or always found missing or incomplete verifications of income and 63 percent occasionally, usually, or always found missing or incomplete verifications of expenses. Overall, PHA/projects were least likely to find errors in determining applicant eligibility at 10 percent. Owner-administered projects in general were less likely to find errors than Public Housing projects and PHA-administered Section 8 projects.

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

Types of Errors Found Always, Usually, or Occasionally	Program Type			Total
	Public Housing	PHA-administered Section 8	Owner-administered	
Mistakes in Calculating Rent	75.1%	87.6%	70.0%	76.5%
Missing or incomplete verifications of income	67.2%	80.5%	56.0%	66.7%
Missing or incomplete verification of expenses	60.7%	73.7%	56.5%	62.6%
Determination that applicants are eligible when not	10.0%	16.7%	5.5%	10.1%

Appendix E—Project Staff Questionnaire Descriptive Analysis

In this year's questionnaire, the most commonly stated cause occasionally, usually, or always resulted in errors was once again tenants providing inaccurate or incomplete information (85 percent). Other frequently cited reasons were: complex HUD regulations for rent calculations (42 percent), frequent changes in HUD regulations (36 percent), and not having enough staff to handle the workload (33 percent). PHA-administered Section 8 projects were most likely to cite tenants providing incomplete/inaccurate information as occasionally or often causing errors at 94 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 Occasionally, Usually, or Always Causing Errors | Program Type | | | |
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Tenants providing inaccurate/incomplete information	85.1%	93.8%	78.0%	84.8%
Complex HUD regulations for rent calculations	43.3%	50.0%	35.0%	42.0%
Frequent changes in HUD regulations	28.4%	38.2%	39.5%	35.7%
Not having enough staff to handle the workload	41.8%	48.6%	12.0%	32.7%

Overall, 70 percent of PHA/projects had HUD, field staff, or outside contractors review their files in the past 2 years. Of those PHA/projects who indicated that their files were reviewed, 17 percent had their files reviewed by a HUD related entity. Similarly, PHA/projects had their files reviewed by outside auditors and contractors 21 percent of the time. Lastly, about 12 percent had their files audited by a state housing authority.

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 (92 percent and 90 percent, respectively). When conducting annual recertifications, PHA/projects were more likely to use other methods compared to new certifications. The second most common method was having the tenant complete a form and return it via mail or in-person (60 percent and 67 percent, respectively). While 84 percent of PHA/projects required that all residents be interviewed for new certifications, only 76 percent required all residents be interviewed when conducting annual recertifications. PHA/projects were also less likely to use a formal guide or set of questions to conduct the interview at 71 percent compared to new certifications at 76 percent. A typical initial certification interview required about 40 minutes to complete, on average, while a typical recertification interview required only 29 minutes.

Exhibit E-6a.
Amount of Time Spent on Initial and Annual
**(Re)Certification Interviews in the Past 12 Months, by Program Type**

| | Program Type | | | |
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Average number of minutes spent on a typical initial certification interview	38.7	41.9	40.8	40.4

Average number of minutes spent on a typical annual recertification interview	27.8	29.3	30.4	29.2

This year, when PHA/projects were asked whether procedures were the same for households with stable income compared to those with volatile income, overall 93 percent said they were the same, compared to 97 percent in FY 2007. PHA/projects were also asked how many months prior to the effective date they start the recertification process. Most PHA/projects started the process six months before or earlier. Very few PHA/projects started greater than 6 months prior, while almost all started the process 4 months prior. Owner-administered projects were almost twice as likely to start 4 months ahead of time as Public Housing and PHA-administered Section 8 projects. Results and distributions were similar when looking at the number of days prior to the effective date various (re)certification tasks were performed. Overall, most PHA/projects started 4 months or less prior to the effective date. Exhibit E-6b shows the distribution of months by program type.

Exhibit E-6b.
Number of Months Prior to Effective Date PHA/projects Start the Annual Recertification Process, by Program Type
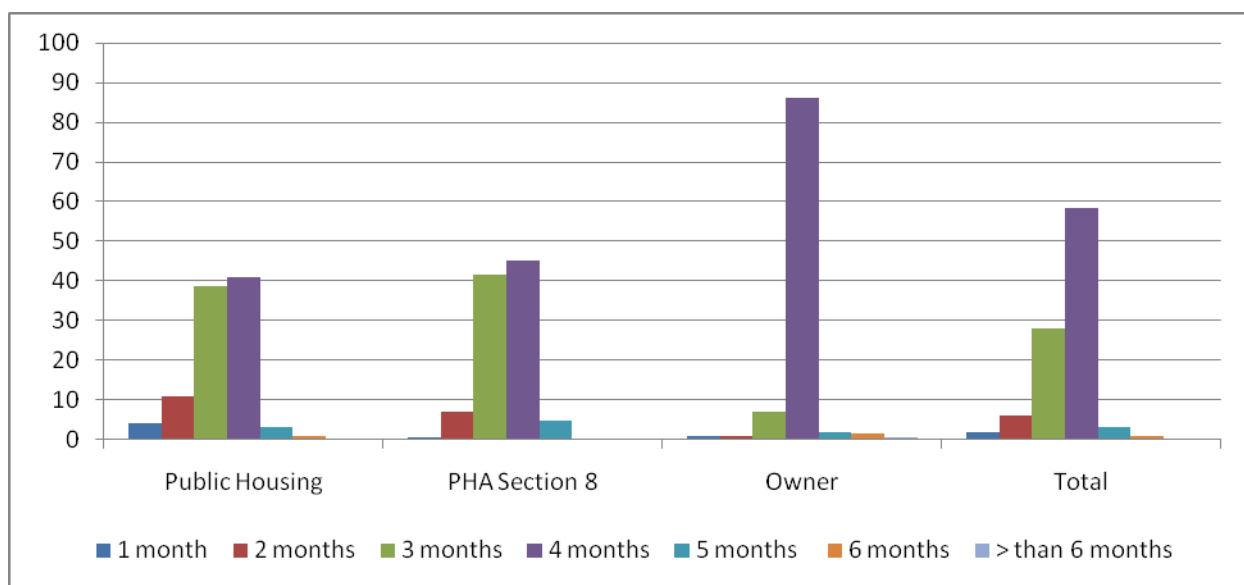
When it comes to languages other than English, 56 percent of PHA/projects have a proportion of tenants where 20 percent or less of tenants speak a language other than English as their primary language. In these cases PHA/projects used a combination of methods to communicate with their tenants. On average, a majority of tenants brought their own translators, often a family member (79 percent). Sixty-nine percent of PHA/projects had bilingual staff available, up from 60 percent in FY 2007, and 54 percent of PHA/projects brought in translators or used a language bank or third party service to communicate with tenants. In addition, 49 percent of PHAs used forms in other languages to communicate with tenants.

Computers and Software Use. Computer software is playing an increasingly integral part in PHA/projects daily tasks. In the past 12 months, almost all PHA/projects utilized computers and computer software when performing various (re)certification and other administrative tasks. Over 90 percent overall of PHA/projects use computer software to calculate rent, income, or

allowances, print the 50058/50059 form, input verified information, print letters to tenants, and record tenant demographics. In addition, an increasing number of PHA/projects are using computer software to submit tenant information to HUD. As has been the case in previous years, 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-7a.

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

| | Program Type | | | |
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Calculate rent	98.5%	98.6%	97.5%	98.2%
Print the 50058/50059 form	92.0%	100.0%	98.0%	96.3%
Print letters to the tenants	96.0%	97.2%	95.5%	96.1%
Maintain demographic information about residents	93.0%	98.6%	95.0%	95.2%
Input Verified Information	91.0%	96.5%	94.5%	93.8%
Submit tenant information to HUD	86.1%	97.9%	93.5%	91.9%
Interview tenants and record answers	19.9%	29.9%	18.5%	22.0%

In addition to asking about the different tasks performed by PHA/projects using computers and computer software, the Project Staff Questionnaire also asked what percent of a PHA/project's 50058/50059 data was transferred electronically to HUD, as opposed to specifying the PIC/TRACS system as in previous years. Most PHA/projects (93 percent, on average) reported doing so. The percentage of PHA/projects who reported transferring all their 50058/50059 data through this method increased two percent to 83 percent in FY 2008. Owner-administered projects were most likely to transmit through another agency as opposed to directly. For detailed transmission rates by program type, see Exhibit E-7b below.

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

| | Program Type | | | |
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Transmitted directly	83.1%	93.1%	54.0%	75.0%
Transmitted through another agency	6.0%	6.3%	44.0%	20.0%
Transmitted by other methods	5.0%	1.4%	5.5%	4.2%
Average percentage of 50058/50059 data transmitted electronically per PHA/project	88.4%	93.5%	96.6%	92.7%
Percent of PHA/projects electronically submitting some or all 50058/50059 data	94.5%	99.3%	98.5%	97.2%

Appendix E—Project Staff Questionnaire Descriptive Analysis

Verification Procedures. The most frequently reported methods of keeping track of when verification information was received were keeping a record in the tenant file (79 percent, on average), keeping files with outstanding verification in a separate location (73 percent, on average, and marking information using a paper list or tickler file (64 percent, on average).

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	79.1%	91.7%	70.5%	79.3%
Kept files with outstanding verification in separate location or folder	76.1%	70.1%	72.0%	73.0%
Marked on a paper list/tickler file (tracking sheet, monitoring form, checklist, or log)	56.7%	66.7%	69.0%	63.9%

Primarily, project (re)certification staff were responsible for keeping track of verifications at 90 percent of PHA/projects overall. Within program types, owner-administered projects were least likely to have project (re)certification staff keep track of verifications at 87 percent, and most likely to have a supervisor perform the task at 63 percent. They were also least likely to have clerical staff keep track of the verifications at only 28 percent. However, this is most likely due to owner-administered projects relatively small number of staff in comparison to the other program types.

This year's questionnaire included a revised question regarding PHA/projects' use of electronic systems to verify Social Security Benefits and Employment Income. Instead of asking whether they had used TASS or EIV in the past year, the questionnaire asked generally whether they had used electronic systems. Overall, 87 percent used an electronic system to verify Social Security Benefits, and 81 percent used one to verify employment income. PHA-administered Section 8 projects were most likely to use electronic systems to verify both Social Security Benefits and Employment Income (98 percent, and 97 percent respectively), and owner-administered projects were least likely to use them to verify both Social Security Benefits and Employment Income (74 percent and 58 percent, respectively).

Of the PHA/projects who have ever used TASS or EIV specifically, the most frequent uses were to verify: Social Security/SSI benefits (83 percent), employment income (74 percent), and dual entitlement benefits (66 percent). Owner-administered projects were much less likely to frequently use TASS or EIV to verify information. A breakdown of the frequency of use of TASS and EIV is provided in Exhibit E-8b.

Most PHA/projects did not rely solely on automated systems for information. Overall, 77 percent of PHA/projects used other methods to supplement automated systems. Those that supplemented the data most often listed pay stubs, third party verification, and employer information as other methods used to supplement. The most often cited reason for using other methods to supplement the automated systems was the outdated information in EIV. Other reasons included: using other methods when there is a discrepancy, and to double check the data in the automated system.

Appendix E—Project Staff Questionnaire Descriptive Analysis

Exhibit E-8b.
Frequency of Use: TASS, EIV to Verify Certain Factors, by Program Type

| Use TASS or EIV Usually or Always to Verify: | Program Type | | | |
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Social Security Benefits	90.5%	95.8%	66.0%	83.0%
Employment Income	87.6%	91.7%	46.5%	75.0%
Dual Entitlement Benefits	75.6%	82.6%	43.0%	65.5%
Disability Status	68.1%	73.6%	38.0%	58.6%
Unemployment Benefits	72.1%	74.3%	31.5%	57.8%
Black Lung Benefits	50.3%	61.8%	21.5%	42.8%

PHA/projects were most likely to verify income, asset, and expenses from household members, with 90 percent or more of PHA/projects verifying items in these categories in both the initial certification and annual recertification. Several categories were verified in both over 97 percent of the time, including: Social Security Benefits, employment income, other sources of income (98 percent), and the value of assets (97 percent).

Exhibit E-8c.
Items Most Likely to be Verified in Both Initial and Annual (Re)certifications, by Program Type

| Targets of Verification Procedures Verified in Both Initial and Annual (Re)certification | Program Type | | | |
	Public Housing	PHA-administered Section 8	Owner-administered	Total
Social Security Benefits	96.5%	97.9%	99.0%	97.8%
Income from Employment	96.5%	98.6%	98.0%	97.6%
Other Sources of Income	96.5%	99.3%	97.5%	97.6%
Value of Assets	95.0%	97.9%	98.5%	97.1%

Household information items, on the other hand, were least likely to be verified in both the initial certification and the annual (re)certification. For certain predictable or unchanging information such as age of household members, social security numbers, and citizenship information, PHA/projects were more likely to only verify that information during the initial certification. Owner-administered projects were least likely to re-verify household information during both the initial and annual (re)certifications.

Appendix E—Project Staff Questionnaire Descriptive Analysis

Exhibit E-8d.

Least Likely to be Verified: Household Information, by Program Type

	Public Housing	PHA-administered Section 8	Owner-administered	Total
Citizenship - Both	44.3%	42.4%	25.0%	36.7%
Citizenship - Initial	51.2%	56.9%	73.0%	60.7%
Citizenship - Recert	4.0%	0.7%	0.0%	1.7%
SSN - Both	65.2%	61.8%	37.0%	53.9%
SSN - Initial	31.3%	36.8%	62.5%	44.2%
SSN - Recert	3.5%	0.7%	0.0%	1.5%
Age - Both	71.6%	67.4%	34.5%	56.9%
Age - Initial	24.4%	31.9%	65.5%	41.5%
Age - Recert	4.0%	70.0%	0.0%	1.7%
Disability - Both	84.6%	85.4%	63.0%	76.9%
Disability - Initial	10.0%	13.2%	35.0%	20.0%
Disability - Recert	4.5%	1.4%	0.5%	2.2%
FT Student - Both	89.6%	96.5%	84.0%	89.4%
FT Student - Initial	3.0%	2.1%	8.5%	4.8%
FT Student - Recert	4.5%	1.4%	1.0%	2.4%

In addition to identifying how often PHA/projects verified household income, the Project Staff Questionnaire also asked PHA/projects to identify which types of household information were most difficult to verify. Sporadic income was listed as causing the most difficulty (53 percent of PHA/projects), along with other sources of income (43 percent) and income from employment (39 percent). Items least likely to cause some or much difficulty to verify were items that were least likely to be verified in both the initial and annual (re)certifications, including the age of household members (5 percent), Social Security numbers (7 percent), and citizenship (9 percent). In general, owner-administered projects seemed to have the least amount of difficulty among the program types, and PHA-administered Section 8 projects had the most difficulty.

Exhibit E-8e.

Tenant Information Most Difficult to Verify in the Past 12 Months, by Program Type

Tenant Information Causing Some or Much Difficulty to Verify	Program Type			
	Public Housing	administered Section 8	Owner-administered	Total
Sporadic, infrequent, or seasonal employment	57.7%	67.3%	38.0%	53.0%
Other sources of income	49.3%	56.2%	28.5%	43.1%
Income from employment	40.8%	46.5%	31.0%	38.7%

PHA/projects were also asked how often certain issues emerged when problems arose in obtaining complete verifications. PHA/projects cited employers not responding to requests in a timely manner as usually or always causing problems at 27 percent. Employers providing incomplete information and other institutions not responding in a timely manner (24 percent), were the other two reasons most cited as causing problems. More detailed figures broken down by program type are shown in Exhibit E-8f.

Appendix E—Project Staff Questionnaire Descriptive Analysis

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

	Program Type			
Issues Usually or Always Caused Problems	**Public Housing**	**PHA-administered Section 8**	**Owner-administered**	**Total**
Employers not responding to requests in timely manner	25.8%	32.7%	20.5%	27.0%
Other institutions not responding in a timely manner	20.9%	26.4%	25.5%	24.0%
Employers not providing all requested information	21.9%	32.0%	20.0%	23.8%

With respect to the level of cooperation of various individuals and institutions when verifying tenant information, the same institutions were the least cooperative in FY 2008 compared to FY 2007. Insurance companies were most likely to never or occasionally be cooperative (39 percent), and financial institutions (33 percent) and health care providers (28 percent) were also less likely to be cooperative.

Exhibit E-8g.
Uncooperativeness of People in Obtaining Verification
Information, in the Past 12 Months, by Program Type

	Program Type			
Never or Occasionally Uncooperative	**Public Housing**	**PHA-administered Section 8**	**Owner-administered**	**Total**
Insurance companies (e.g., health insurance)	42.3%	45.1%	28.5%	38.9%
Financial institutions (e.g., banks, investment firms)	35.4%	34.8%	29.0%	32.9%
Health care providers (e.g., doctors, pharmacies)	33.9%	29.9%	21.5%	28.2%

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 (95 percent). PHA/projects also called tenants (91 percent), sent follow-up letters to third parties (90 percent), used electronic verification or data matching such as EIV (81 percent), and sent follow-up letters to tenants (80%). On average, 73 percent of PHA/projects reported resorting to accepting other/less preferred verification, up slightly from 69 percent in FY 2007. Owner-administered programs were significantly less likely to resort to accepting less preferred verification.

Exhibit E-8h.
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	93.5%	96.5%	94.5%	94.7%
Called tenant	90.0%	89.6%	92.0%	90.6%
Sent follow-up letter to third party	90.5%	88.2%	91.5%	90.3%
Used electronic verification or data matching (e.g., EIV)	90.5%	93.8%	61.0%	80.6%
Sent follow-up letter to tenant	85.6%	82.6%	72.0%	79.8%
Accepted other/less preferred verification	72.1%	83.3%	67.0%	73.4%

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. However, some findings differed with respect to program type. Owner-administered projects were more likely to differ from the other two program types, perhaps due to their size. 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. They are also much more likely to start the annual recertification process 3 to 6 months before the effective date. Lastly, they seem to have fewer difficulties verifying tenant information, which would explain why they are also the least likely to resort to accepting less preferred verification information when difficulties arose in obtaining that information.

This year's study experimented with different scales and types of responses to various questions. It also expanded on questions to incorporate other items of interest. The results of these questions highlighted some new differences in procedures between owner-administered projects and their counterparts, as mentioned above. 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 of 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 rental assistance errors.

Appendix F—Multivariate Analysis
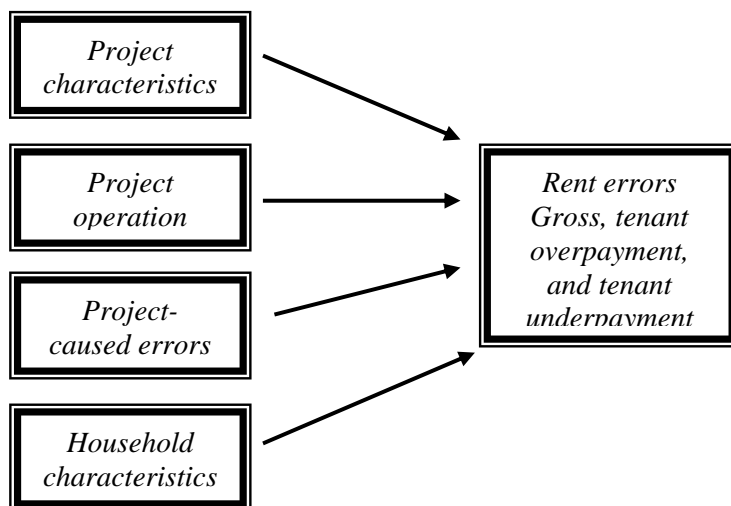
Appendix F—Multivariate Analysis

Multivariate modeling was used to determine the tenant and project characteristics[1] that are predictive of gross rent error, tenant underpayment and tenant overpayment. This technique was used (in addition to the tabulations already presented) to provide additional information about the causes of rent error while statistically controlling for the effects of other tenant and project variables. Specifically, the following study objectives are addressed by the multivariate modeling.

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

- ♦ 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 the program sponsor staff.

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

- ♦ 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.

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

A. Rent Error Conceptual Framework

The theoretical basis from which we will answer the above research objectives is depicted in Figure F-1.

Figure F-1
Conceptual Framework for Modeling Rent Errors

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[1] Recall that for the Voucher program type, a "project" is defined as Vouchers located in a specific county.

Appendix F—Multivariate Analysis

Conceptually, four groups of variables are being considered for their predictive ability for rent error: project characteristics, project operation, project-caused errors and household characteristics. Note that rent error is being defined both in gross and net terms. Both tenant-level QC data and Project Staff Questionnaire (PSQ) data were merged to conduct this analysis. In order to identify the best predictors of rent error, extensive data processing, descriptive analysis and data mining techniques were employed on the PSQ data (e.g., stepwise regression, maximal R-square methods and Akaike's Information Criteria). The PSQ data, as received from project staff, contained over 400 variables and was pared to the more manageable number of 11. Each group of final variables is listed below.

Project characteristics (PC) are comprised of six project-level variables that are descriptive in nature. For modeling purposes the following variables are being considered:

- PHA-administered Section 8 project (binary variable coded 1 for yes and 0 for no)

- Public Housing project (binary variable coded 1 for yes and 0 for no)

- Ratio of tenant units per project staff member

- Percent of experienced project staff who were training in the past 12 months

- Project staff are required to have a minimum education requirement in order to be hired (binary variable coded 1 for yes and 0 for no)

- Project staff are required to have administrative or clerical experience in order to be hired (binary variable coded 1 for yes and 0 for no)

Project operation (PO) variables include five items that are descriptive of how project staff conduct their recertifications. For the modeling purposes the following variables are being considered:

- Project staff report that needed verification is tracked using computers (binary variable coded 1 for yes and 0 for no)

- The number of items that project staff used Enterprise Income Verification (EIV) to verify. Values could range from 0 to 6, based on the number of elements they indicated (i.e., employment income, Social Security/SSI benefits, unemployment benefits, black lung benefits, disability status, and dual entitlement benefits).

- The number of methods that project staff use to monitor their recertifications

- Project staff report that they review all recertification cases (binary variable coded 1 for yes and 0 for no)

- Project staff report that they regularly use other methods to select cases for review (binary variable coded 1 for yes and 0 for no)

Appendix F—Multivariate Analysis

Project-caused error (PE) variables include household-level items that are collected during the QC Study. For the modeling purposes the following variables are being considered:

- Percent of household sources of income, assets or expenses with transcription errors between the supporting information in the tenant file and the 50058 or 50059.

- Percent of household sources of income, assets or expenses without third party verification

- Recertification was overdue for a household (binary variable coded 1 for yes and 0 for no)

- Any form of calculation error within the 50058 or 50059 (binary variable coded 1 for yes and 0 for no)

- Any form of consistency error within the 50058 or 50059 (binary variable coded 1 for yes and 0 for no)

- Any form of transcription error between the supporting information in the tenant file and the 50058 or 50059.

Household characteristics (HC) variables include household-level items that are collected during the QC Study. For the modeling purposes the following variables are being considered:

- Number of household members

- Total annual income amount of the household

- Number of bedrooms

- Earned income amount of the household

- Other income amount of the household

- Public assistance income amount of the household

- Social security and pension income amount in the household. This item corresponds to the *Pension* rent component discussed in Chapter IV.

- Head of household age

- Number of income and expense sources for the household

- Number of allowances for the household

- Number of household members who are elderly or disabled

Appendix F—Multivariate Analysis

Methodological Considerations. The distribution of rent error amounts (gross and net) was skewed. That is, very few cases had large dollar error amounts and many had zero error. As is common practice for addressing skewed distributions, we took the logarithm of each dollar value to condense the variables' skewed distributions.

Diagnostic and model testing procedures were run to ensure that, with the specified model, collinearity among predictor variables were at acceptable levels and that residual distribution of the predicted gross rent error was not biased.

Hierarchical linear modeling (HLM) was considered as a statistical technique, but was deemed not appropriate here. As a rule of thumb, the project proportion of the variance should be at least 8 percent for the use of HLM but the actual proportion of variance is only 5.6 percent

Statistical analyses were run with the SURVEY procedures of SAS 9.2, using the Jackknife replicate weights procedure to compensate for the design effects (with exception of un-weighted statistics). We opted for the Jackknife replicate weights (rather than previously used Taylor series) procedure to generate more realistic variance estimates from data collected under the clustered sampling design. SAS SURVEYREG was used for multiple regression modeling of gross rent error, overpayment, and underpayment, as well as the interval measures of project-caused errors. For modeling binary coded project-caused errors, we used the SURVEYLOGISTIC procedure. SURVEYMEANS was used to tabulate weighted descriptive statistics. For initial variance analysis we used PROC MIXED for estimating the two level variance and SAS conventional procedures to examine raw data and residual scores of the predicted gross error.

Gross Rent Error Findings – Bivariate. One way to try and understand the relationship between the above listed variables and gross rent error is to partition cases depending on whether they do or do not have a gross rent error and calculate their means and associated standard errors. Exhibit F-1 provides this information and indicates with an asterisk those variables that have significant differences between groups, thus suggesting that they may be predictive of gross error in a multivariate model. These 12 variables include:

Project Operation:

♦ The number of methods that project staff use to monitor their recertifications

Project-Caused Error:

♦ Percent of household sources of income, assets or expenses with transcription errors between the supporting information in the tenant file and the 50058 or 50059.

♦ Percent of household sources of income, assets or expenses without third party verification

♦ Any form of consistency error within the 50058 or 50059 (binary variable coded 1 for yes and 0 for no)

♦ Any form of transcription error between the supporting information in the tenant file and the 50058 or 50059.

Household Characteristics

♦ Total annual income amount of the household

♦ Earned income amount of the household

♦ Other income amount of the household

♦ Social security and pension income amount in the household. This item corresponds to the *Pension* rent component discussed in Chapter IV.

♦ Number of income and expense sources for the household

♦ Number of allowances for the household

♦ Number of household members who are elderly or disabled

Gross Rent Error Findings – Multivariate. The next step in this analysis is to use the four categories of variables to predict gross rent error using regression equations. Four multiple linear regression equations were specified to estimate the effects of different sets of predictor variables in relation to gross rent error (see Exhibit F-2). Predictor variables representing explanatory concepts were added into the equation in a sequence (a procedure known as sequential modeling). Each model allowed us to estimate the effect of a particular set of variables that were added into the equation, the changing estimates of the previously entered variables, and the model fit statistics. The final model (Model 4) included all four sets of variables representing the specified four categories: project characteristics, project operation, project-caused error, and household characteristics.

The results of Model 1 (including PC variables) indicate that none of the project characteristics were found to be related to gross rent error and the model fit was poor with an adjusted R-square close to zero.

The results of Model 2 (including PC and PO variables) indicate that increased gross rent error was associated with 1) project staff reporting that they use a computer to keep track of needed verification and 2) project staff reporting that they use fewer monitoring methods for recertifications.

Appendix F—Multivariate Analysis

Exhibit F-1
Unweighted Predictor Variables Used in Modeling: Households with and without Gross Rent Error

Predictors	Without Gross Rent Error (n=1202)				With Gross Rent Error (n=1122)			
	Mean	Std Error of Mean	95% CL for Mean		Mean	Std Error of Mean	95% CL for Mean	
PC: Section 8 program type	0.409	0.016	0.378	0.441	0.453	0.016	0.421	0.485
PC: Public Housing program type	0.248	0.012	0.225	0.272	0.232	0.012	0.208	0.255
PC: Unit per staff ratio (in 10s)	17.421	0.546	16.350	18.491	17.627	0.521	16.606	18.648
PC: Percent of experienced staff with training in the last 12 months	0.785	0.011	0.764	0.807	0.759	0.012	0.736	0.783
PC: Require a minimum education	0.889	0.011	0.869	0.910	0.890	0.010	0.869	0.910
PC: Admin/clerical experience required	0.686	0.015	0.657	0.715	0.645	0.016	0.614	0.676
PO: Verification tracked by computer	0.470	0.016	0.439	0.500	0.510	0.016	0.478	0.541
PO: Number of items always verified with EIV	3.239	0.075	3.092	3.387	3.361	0.076	3.212	3.511
PO: Number of methods used to monitor	16.845	0.199	16.455	17.235	15.770	0.215	15.349	16.192*
PO: All cases reviewed by project staff	0.333	0.015	0.304	0.362	0.324	0.015	0.294	0.353
PO: Case review conducted by other methods	0.038	0.006	0.026	0.050	0.064	0.008	0.048	0.080
PE: Percent of items with transcription errors	0.130	0.007	0.115	0.144	0.331	0.009	0.313	0.349*
PE: Percent of items without third party verification	0.040	0.006	0.029	0.051	0.081	0.007	0.067	0.096*
PE: Overdue recertification error	0.008	0.003	0.001	0.015	0.025	0.005	0.014	0.035
PE: Any calculation error	0.073	0.008	0.057	0.089	0.097	0.009	0.078	0.115
PE: Consistency error	0.152	0.011	0.131	0.174	0.212	0.013	0.186	0.237*
PE: Transcription error	0.224	0.012	0.200	0.249	0.633	0.015	0.603	0.664*
HC: Number of household members	2.050	0.042	1.968	2.133	2.095	0.048	2.001	2.188
HC: Total annual income	11562.0	267.2	11037.8	12085.9	13628.0	244.2	13148.8	14106.5*
HC: Number of bedrooms	1.757	0.030	1.698	1.815	1.789	0.031	1.728	1.849
HC: Earned income	0.295	0.017	0.262	0.328	0.506	0.028	0.452	0.560*
HC: Other income	0.194	0.014	0.165	0.222	0.271	0.019	0.234	0.308*
HC: Public assistance income	0.114	0.010	0.094	0.135	0.118	0.011	0.096	0.141
HC: Pension income	0.869	0.030	0.811	0.927	1.062	0.034	0.995	1.129*
HC: Household head age	50.527	0.614	49.323	51.732	52.640	0.635	51.394	53.886
HC: Number of income and expenses	2.345	0.062	2.224	2.467	4.259	0.112	4.040	4.478*
HC: Number of allowances	1.136	0.018	1.102	1.171	1.510	0.020	1.470	1.550*
HC: Household with a disabled or elderly person	0.544	0.016	0.514	0.575	0.649	0.016	0.619	0.680*

*p < .05 **p< .01 ***p< .001 (test with the null hypothesis that a coefficient=0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).
PC=project characteristics, PO=project operations, PE=project-caused errors, and HC=household characteristics.
Source: HUDQC FY 2008 Tenant-level QC data and PSQ data

Appendix F—Multivariate Analysis

Exhibit F-2
Log Gross Rent Error Accounted for by Selected Variables:
Multiple Regression Coefficients from Sequential Models with Design Effect Adjustment

Predictors	Model 1 PC Variables	Model 2 PC & PO Variables	Model 3 PC, PO & PE Variables	Model 4 PC, PO, PE & HC Variables
Intercept	1.389 ***	1.567 ***	1.07 ***	1.187 ***
PC: Section 8 program type	0.134	0.073	0.061	0.002
PC: Public Housing program type	0.042	-0.001	-0.187 *	-0.111
PC: Unit per staff ratio (in 10s)	0.002	0.001	0	0.001
PC: Percent of experienced staff with training in the last 12 months	-0.172	-0.131	-0.063	-0.044
PC: Require a minimum education	-0.070	-0.067	-0.126	-0.17
PC: Admin/clerical experience required	-0.149	-0.144	-0.054	-0.035
PO: Verification tracked by computer		0.165 *	0.11	0.143 *
PO: Number of items always verified with EIV		0.024	0.027	0.026
PO: Number of methods used to monitor		-0.013 *	-0.012 *	-0.009
PO: All cases reviewed by project staff		-0.029	-0.03	-0.018
PO: Case review conducted by other methods		0.325	0.275	0.183
PE: Percent of items with transcription errors			0.282	0.712 ***
PE: Percent of items without third party verification			0.573 ***	0.282 *
PE: Overdue recertification error			1.151 **	1.214 ***
PE: Any calculation error			-0.021	-0.089
PE: Consistency error			0.169	0.111
PE: Transcription error			1.09 ***	0.562 ***
HC: Number of household members				-0.076
HC: Total annual income				-0.016 ***
HC: Number of bedrooms				0.021
HC: Earned income				0.628 ***
HC: Other income				0.404 ***
HC: Public assistance income				0.438 ***
HC: Pension income				0.075
HC: Household head age				-0.005 **
HC: Number of income and expenses				0.061 ***
HC: Number of allowances				0.533 ***
HC: Household with a disabled or elderly person				0.083
R^2	**0.004 ***	**0.016 *** **	**0.191 ***	**0.317 ***
Adjusted R^2	**0.002 ***	**0.011 *** **	**0.185 ***	**0.309 ***
Cohen's f^2	**0.002**	**0.009**	**0.213**	**0.179**
Percent of variance accounted for	**0.002**	**0.009**	**0.174**	**0.124**

*p < .05 **p< .01 ***p< .001 (test with the null hypothesis that a coefficient=0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).

PC=project characteristics, PO=project operations, PE=project-caused errors, and HC=household characteristics.

Source: HUDQC FY 2008 Tenant-level QC data and PSQ data

Appendix F—Multivariate Analysis

The results of Model 3 (including PC, PO and PE variables) indicate that three additional variables were found significant and positively related to gross error. Holding other factors equal, 1) the percent of items without third party verification was highly significant, with a log .573, equivalent to $2.26 an increase of gross error relative to the reference group; 2) overdue recertification error had an even larger increasing effect on the gross error by a log 1.151 or $6.30; and 3) consistency error had an effect of 1.09 in log scale or $5.76 increasing the gross error. Note that the estimated large increase of gross error caused by overdue recertification was consistent with prior years' findings. For example, in the FY 2007 study, the effect was estimated to be 1.000 in log or $7.00. The coefficients for other measures of project errors (i.e., calculation error, transcription error, and percent of verification error), however, were not found to be statistically significant. The Public Housing program type was found negatively related to gross error, with a log -.187 or $.49, given other conditions equal. The number of monitoring methods remained a small but significant effect, reducing the gross error by .012 log value or $.039 given each additional method used. Using a computer to keep track of verification, however, was no longer significant in predicting gross rent error.

The results of Model 4 (including PC, PO, PE and HC variables) indicate a strong set of predictors of gross error. It is informative to examine the effects of project factors while controlling for the strong household covariates. Here, the three project error effects identified in Model 3 remained significant and large in magnitude. Additionally, the transcription item error rate was found significant and large in size, with a log estimate .712 which is equivalent to $3.40 of increased gross error, net of other effects. The difference in gross error associated with the Public Housing program disappeared after controlling for the tenant variables, suggesting the mild program difference was probably due to the differences in household characteristics between Public Housing and owner-administered programs. The effect of using a computer to keep track of verification became significant, with a log estimate .143, implying that using a computer for tracking process was related to a slight increase of gross error of about $.50, holding other factor constant. As found in prior years, households with complex financial conditions (more sources of income, items of expense and allowance) were likely to have larger gross rent error, given other project and household conditions being similar. Household head age and the total annual income, however, were found to relate to lower gross error. As indicated by the adjusted R-square value, 31% of the variance in the gross error was explained by the variables contained in Model 4.

Compared with FY 2007, the FY 2008 data presented largely similar patterns in which gross error was related to project and household factors. The most substantiated findings were:

- ♦ Few project characteristics and project operation variables were found strongly related to gross error, and even for those that were estimated statistically significant, the effect appeared unstable across models or relatively small in magnitude.

- ♦ Project-caused errors, particularly, overdue certification and transcription errors, contributed strongly to increased gross error, a finding highly consistent with that of the FY 2007 analysis.

- ♦ Households that were characterized with complex financial conditions were clearly linked to greater gross error with highly reliable estimates.

Appendix F—Multivariate Analysis

Relative Size of Effects by Variable Groups. Comparable with the result of the FY 2007 analysis, the predictor variables entered into the sequential models incrementally accounted for the variance of the gross rent error, with the largest share by indicators of the project-caused error (17.4 percent), followed by household characteristics and financial conditions (12.4 percent). The proportion of gross rent error variance explained by project variables totaled only 1.1 percent (Figure F-2). Corresponding to variance partitioning, the effect size estimates with Cohen's f^2 also showed that project errors represented the bulk of the effects on rent error (.213); measures of household characteristics also had sizable effect (.179); and project characteristics/operation effects were again found to be small (.011).

Figure F-2
Proportion of Gross Rent Error Variance Accounted for by Project Variables,
Project-Caused Errors, and Household Variables:
Multiple Regression Analysis with Design Effect Adjustment
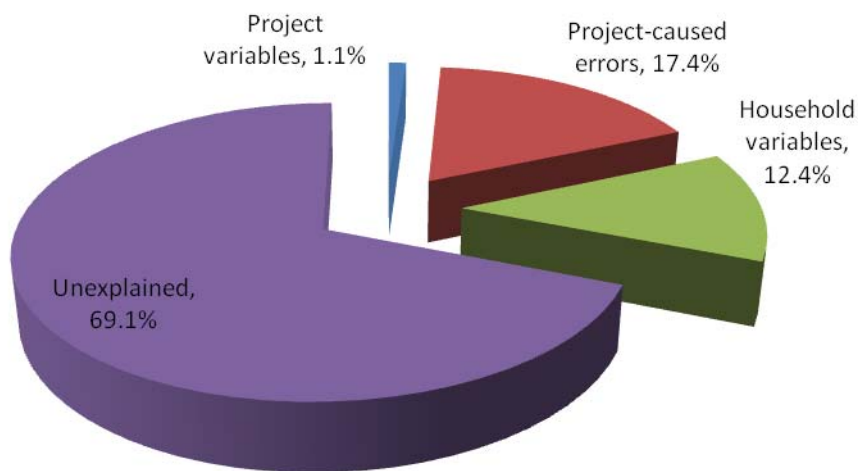
Underpayment and Overpayment Error Findings. Using the same four categories of predictor variables, two regression models were specified, one for underpayments and one for overpayments. A number of the variables that predicted gross rent error also predicted underpayment and overpayment. These include overdue recertification, the presence of a transcription error, earned income amount, other income amount and public assistance income amount. It is notable that the percentage of variance explained for these models is considerably lower than for the Model 4 for the gross rent. Recall that Model 4 accounted for 31 percent of the variance in gross rent error compared to 15 percent for underpayments and 14 percent for overpayments. Exhibit F-3 presents the findings for the underpayment and overpayment models.

Appendix F—Multivariate Analysis

Exhibit F-3
Log Under- And Overpayment Rent Errors Accounted for by Selected Variables:
Multiple Regression Coefficients with Design Effect Adjustment

Predictor	Underpayment	Overpayment
Intercept	0.526 **	0.599 ***
PC: Section 8 program type	0.014	-0.09
PC: Public Housing program type	-0.003	-0.142
PC: Unit per staff ratio (in 10s)	0.003	-0.001
PC: Percent of experienced staff with training in the last 12 months	-0.138	0.097
PC: Require a minimum education	-0.048	-0.153
PC: Admin/clerical experience required	-0.036	.000
PO: Verifications tracked by computer	0.117	0.018
PO: Number of items always verified with EIV	0.024	0.01
PO: Number of methods used to monitor	-0.001	-0.005
PO: All cases reviewed by project staff	0.001	-0.04
PO: Case review conducted by other methods	0.052	0.116
PE: Percent of items with transcription errors	0.557 **	0.168
PE: Percent of items without third party verification	0.022	0.191
PE: Overdue recertification error	-0.035	1.062 *
PE: Any calculation error	0.014	-0.09
PE: Consistency error	-0.031	0.13
PE: Transcription error	0.255 *	0.263 *
HC: Number of household members	0.007	-0.07
HC: Total annual income	-0.022 ***	0.004
HC: Number of bedrooms	-0.011	0.036
HC: Earned income	0.196 **	0.455 ***
HC: Other income	0.017	0.397 ***
HC: Public assistance income	-0.059	0.514 ***
HC: Pension income	-0.089 *	0.169 **
HC: Household head age	-0.003	-0.003
HC: Number of income and expenses	0.048 ***	0.015
HC: Number of allowances	0.501 ***	0.03
HC: Household with a disabled or elderly person	-0.058	0.065
R^2	**0.161** ***	**0.141** ***
Adjusted R^2	**0.151** ***	**0.13** ***

*$p < .05$ **$p < .01$ ***$p < .001$ (test with the null hypothesis that a coefficient=0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).
PC=project characteristics, PO=project operations, PE=project-caused errors, and HC=household characteristics.
Source: HUDQC FY 2008 Tenant-level QC data and PSQ data

B. Project-caused Error Conceptual Framework

As indicated in the multivariate analyses, the project-caused errors of transcription error, overdue recertification error and not obtaining third party verification were common predictors for gross and net rent errors. To help us further our understanding of possible causes for these project-caused errors, additional regression analyses were conducted using the following conceptual framework depicted in Figure F-3.

Appendix F—Multivariate Analysis

Figure F-3
Conceptual Framework for Modeling Project-Caused Errors
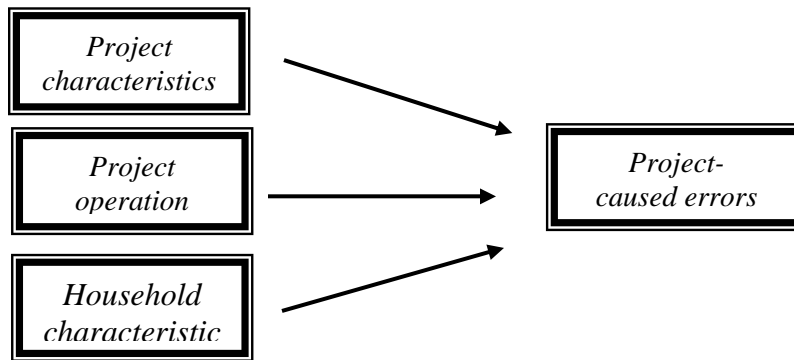
The binary measures of project-caused error (i.e., overdue recertification error and transcription error) were analyzed using multiple logistic regression. The interval measures of error (i.e., item transcription error rate and item verification error rate) were analyzed using linear regression. Exhibit F-4 presents the logit estimates (log odds) and Max-rescaled R^2 from the logistic models of the four errors in binary coding.

Across the models the adjusted R^2 (roughly interpreted as the proportion of variance accounted for by the model), was16 percent for overdue recertification error and 28 percent for transcription error. Focusing on identify salient factors contributing to project-caused errors, we did not conduct sequential modeling and presented only the full model estimates. To interpret the statistics, for each project-caused error, we highlight predictor variables that were found to have a significant effect (with $p < 0.05$). *All else equal*, the following predictors were found to relate to these project-caused errors:

Overdue recertification error

♦ Households administered by projects that used other methods for recertification review were far more likely than other households to have overdue recertification error.

♦ Earned income and other income of the household were related to greater likelihood of overdue recertification error.

Transcription error

♦ Households participating in the Public Housing program were less likely than those served by the owner-administered program to have transcription error.

♦ Households administered by projects that used computers to keep track of verification needs were slightly less likely to have transcription error.

♦ Households with more earned income were related to a larger likelihood of transcription error.

♦ The number of income and expense items was related to a greater likelihood of transcription error.

Exhibit F-4
Project-Caused Errors Accounted for by Selected Variables: Multiple Logistic Regression Coefficients with Design Effect Adjustment

Predictors	Overdue Recertification Error	Transcription Error
Intercept	-11.831 ***	-0.079
PC: Section 8 program type	-1.031	-0.13
PC: Public Housing program type	-1.456	-0.342 ***
PC: Unit per staff ratio (in 10s)	0.013	0.006
PC: Percent experienced staff with training in the last 12 months	0.056	-0.129
PC: Projects required minimal education for hiring	-0.025	-0.066
PC: Admin/clerical experience required for hiring	0.25	0.115
PO: Verification tracked by computer	0.249	-0.142 *
PO: Number of items always verified with EIV	0.016	-0.03
PO: Number of methods used to monitor	0.024	0.004
PO: All cases reviewed by project staff	0.13	-0.012
PO: Case review conducted by other methods	6.972 ***	-0.021
TC: Number of household members	0.221	0.052
HC: Total annual income	-0.026	0.006
HC: Number of bedrooms	-0.45	0.034
HC: Earned income	0.694 *	0.543 ***
HC: Other income	0.651 *	0.232
HC: Public assistance income	0.173	-0.068
HC: Pension income	0.259	-0.119
HC: Household head age	0.03	0.005
HC: Number of income and expense sources	-0.429	0.258 ***
HC: Number of allowances	0.506	0.11
HC: Household with a disabled or elderly person	0.169	-0.183
R^2	0.038 ***	0.253 ***
Max rescaled R^2	0.157 ***	0.281 ***

*p < .05 **p< .01 ***p< .001 (test with the null hypothesis that a coefficient=0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).
PC=project characteristics, PO=project operations and HC=household characteristics.
Source: HUDQC FY 2008 Tenant-level QC data and PSQ data

Two linear regression models were estimated for item transcription error rate and the item verification error rate variables. The estimated predictor effects, interestingly, were quite consistent. Some highlights include:

♦ Households administered by the Section 8 and Public Housing programs were more likely to have transcription and verification errors. A number of project operation predictors appeared marginally interpretable. Using computer to track verification has

apparently trivial effect on higher rate of item transcription error, but unrelated to other dependent measures. Reviewing cases with methods other than specified ones was associated with a slightly lower item verification error rate.

♦ Household variables were found more robust in predicting high error rates. Earned income, other income, number of income and expenses were related to larger error measures; so was household head age. Number of allowance was moderately associated with lower item transcription error rate.

Exhibit F-5
Project-Caused Errors Accounted for by Selected Variables: Multiple Linear Regression Coefficients with Design Effect Adjustment

Predictors[1]	Item Transcription Error Percent	Item Verification Error Percent
Intercept	0.191 ***	0.043
PC: Section 8 program type	0.033 *	0.006
PC: Public Housing program type	0.105 ***	0.035 *
PC: Unit per staff ratio (in 10s)	0.001	0
PC: Percent experienced staff with training in the last 12 months	-0.016	-0.018
PC: Require a minimum education	0.009	0.011
PC: Admin/clerical experience required	-0.027	0.003
PO: Verification tracked by computer	0.038 *	0.004
PO: Number of items always verified with EIV	-0.005	0.002
PO: Monitor: Number of methods used to monitor	0.001	0.001
PO: All cases reviewed by project staff	-0.011	0.012
PO: Case review conducted by other methods	0.016	-0.028 *
HC: Number of Household members	-0.009	0.015
HC: Total annual income	0.001	-0.002 *
HC: Number of bedrooms	0.005	-0.014
HC: Earned income	0.044 ***	0.023
HC: Other income	0.011	0.057 **
HC: Public assistance income	0.004	-0.025
HC: Pension income	-0.017	0
HC: Household head age	0.001	0
HC: Number of income and expenses	0.027 ***	0.008 ***
HC: Number of allowances	-0.03 *	-0.009
HC: Household with a disabled or elderly person	0.004	-0.013
R^2	**0.113 *****	**0.056 *****
Adjusted R^2	**0.104 *****	**0.047 *****

*p < .05 **p< .01 ***p< .001 (test with the null hypothesis that a coefficient=0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).
PC=project characteristics, PO=project operations and HC=household characteristics.
Source: HUDQC FY 2008 Tenant-level QC data and PSQ data

C. Summary

Multivariate modeling was used to determine the tenant and project characteristics that are predictive of gross rent error, tenant underpayment and tenant overpayment. This technique was used (in addition to the tabulations already presented) to provide additional information about the causes of rent error while statistically controlling for the effects of other tenant and project

variables. The multivariate analysis was used as a means to address five study objectives. Each objective is taken in turn below and the results of the multivariate analysis are provided.

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

Bivariate and multivariate results indicate that program type alone is not an important predictor for rent error in FY 2008.

♦ 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 the program sponsor staff.

Consistent with prior studies, rent errors are the result of the following PHA/project-caused errors: overdue recertifications, transcription errors, and failure to verify income, asset and expense sources with third party verification. In addition the analysis did identify a number of household characteristics that were predictive of rent error, namely: households with four or more sources of income and expenses, those with earned income, and those with other income sources.

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

The multivariate analysis did not reveal any particular relationship between rent error and program type or specific projects.

♦ 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.

The use of an automated rent calculation system alone was not a specifically strong predictor of rent error. This finding is most likely due to the fact the nearly all PHAs/projects use some form of automated system to calculate rent and thus there is little variation in this variable.

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

Project characteristics as defined by this study were not predictive of rent error. This was evidenced in both the bivariate and multivariate analyses. The analysis did identify, however, a number of tenant characteristics that were predictive of rent error, namely: those with four or more sources of income and expenses, those with earned income, and those with other income sources.

In addition, the following conclusions can be reached about how PHA/project staff can minimize their rent calculation errors.

♦ Eliminate overdue recertifications by starting the recertification process with enough time to conclude all the needed tasks

♦ Reduce transcription error by implementing specific quality control procedures for the interpretation and transfer of information from household supporting documents to the 50058 or 50059 forms.

♦ Dedicate additional resources to the often difficult task of obtaining third party verification for income, asset and expense sources.

♦ Select cases with specific characteristics for more intensified quality control review. Such cases should include those with four or more sources of income and expenses, those with earned income, and those with other income sources. Such targeted review would help reduce errors that occur in the process of payment determination.