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Quality Control for Rental Assistance Subsidy Determinations

Final Report for FY 2010

Contract #: GS-23F-9777H
Task Order #: C-CHI-01026, CHI-T0001



Prepared for:

Office of Policy Development and Research
Department of Housing and Urban Development
Washington, DC 20410

Prepared by:

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EXECUTIVE SUMMARY

The Department of Housing and Urban Development (HUD) Quality Control for Rental Assistance Subsidy Determinations studies provide national estimates of the extent, severity, costs, and sources of rent errors in tenant subsidies for the PHA-administered Public Housing, Section 8 Housing Choice Voucher, and Moderate Rehabilitation programs; and the Housing-administered Section 8, Section 202 and Section 811 Project Rental Assistance Contracts (PRAC) and Section 202/162 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 November 2010 through March 2011 for actions taken by Public Housing Authority (PHA) and project staff during Federal FY 2010 (October 2009 through September 2010).* 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, Section 202 and Section 811 (PRAC) and Section 202/162 (PAC) tenant subsidies in FY 2010 decreased when compared with results from previous studies, however, the result was not statistically significant.

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. Nine studies have been conducted to identify program administrator income and rent determination error. In addition to the 2000 study, studies were conducted in FYs 2003 through 2010. The study referenced in this report covers FY 2010, and is being used to update the FY 2009 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 Study 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 2010. 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 ongoing 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 2,404 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 ICF Macro headquarters for review. Requested third-party verifications related to income, assets and expenses were also processed at ICF 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 2010 tenant files, tenant interview, and income verification data indicates that¹—

- Sixty-seven percent of all households paid the correct amount of rent within \$5 (55 percent paid exactly the right amount)
- Sixteen percent of all households paid in excess of \$5 less than they should have (with an average error of \$47 per month)
- Eighteen percent of all households paid in excess of \$5 more than they should (with an average error of \$33 per month).

Rent Error Estimates by Program Type. The rate of rent underpayments was highest, at 17 percent, in the PHA-administered Section 8 program followed by the Public Housing program with 15 percent error, and the owner-administered program with 14 percent error. The PHA-administered Section 8 program also had the highest overpayment rate of 21 percent followed by the owner-administered program at 15 percent and Public Housing at 14 percent. Exhibit ES-1 summarizes this information.

¹ Totals may not add up exactly to 100% due to rounding.

Exhibit ES-1
Frequency of Rent Error by Program Type

Program	Rent Underpayment (Subsidy Overpayment)	Rent Overpayment (Subsidy Underpayment)
Public Housing	15%	14%
PHA-Administered Section 8	17%	21%
Owner-Administered	14%	15%
Total	16%	18%

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 were²—

- **Rent underpayments of approximately \$362 million annually (down from \$476 million in FY 2009).** For tenants who paid less monthly rent than they should pay (16%), the average monthly underpayment was \$47. For purposes of generalization, total underpayment errors spread across all households (including those with no error and overpayment error) produces a program-wide average monthly underpayment error of \$7.31 (\$88 annually). Multiplying and weighting the \$88 by the approximately 4.1 million units represented by the study sample results in an overall annual underpayment dollar error of approximately \$362 million per year.
- **Rent overpayments of approximately \$288 million annually (down from \$304 million in FY 2009).** For tenants who paid more monthly rent than they should pay (18%), the average monthly overpayment was \$33. When this error is spread across all households, it produces an average monthly overpayment of \$5.80 (\$70 annually). Multiplying and weighting the \$70 by the approximately 4.1 million assisted housing units represented by the study sample results in an overall annual overpayment dollar error of approximately \$288 million per year.
- **Aggregate net rent error of \$74 million annually. When combined, the average gross rent error per case is \$13 (\$7 + \$6).** Over- and underpayment errors partly offset each other. The net overall average monthly rent error is -\$1 (-\$7 + \$6). HUD subsidies for Public Housing and Section 8 programs equal the allowed expense level or payment standard minus the tenant rent, which means that rent errors have a dollar-for-dollar correspondence with subsidy payment errors, except in the Public Housing program in years in which it is not fully funded (in which case, errors have slightly less than a dollar-for-dollar effect). The study found that the net subsidy cost of the under- and overpayments was approximately \$74 million per year (\$362 million–\$288 million).³

² National annual totals in the text and exhibits are calculated using exact values and weighted. While household level numbers are presented below, using them to calculate national annual totals will result in different amounts due to both rounding and weighting. Similarly, the source tables in Appendix C are rounded to the nearest integer for formatting purposes.

³ The actual estimate of annual rent underpayments is \$362.37 million. The actual estimate of annual rent overpayments is \$287.90 million. Therefore the actual estimate of net rent error is \$74.47 million ($\$362.37 - \$287.90 = \74.47).

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 of Dollar Error	Subsidy Overpayment	Subsidy Underpayment
Average Monthly Per Tenant Error for Households with Errors	\$47 (16% of cases)	\$33 (18% of cases)
Average Monthly Per Tenant Error Across All Households	\$7	\$6
Total Annual Program Errors	\$362 million	\$288 million
Total Annual Errors—95% Confidence Interval	\$264–\$461 million	\$237–\$339 million

Exhibit ES-3 provides estimates of program administrator error by program type. These data respond 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	\$79,664	\$61,369	\$18,295	\$141,033
PHA-Administered Section 8	\$184,993	\$156,522	\$28,471	\$341,515
Total PHA-Administered	\$264,657	\$217,891	\$46,766	\$482,548
Owner-Administered	\$97,713	\$70,006	\$27,707	\$167,719
Total	\$362,370	\$287,897	\$74,473	\$650,266
95% Confidence Interval	±\$98,230	±\$51,305	±\$75,691	±\$137,235

Comparison with Prior Studies. Eight prior studies (2000 baseline and the FYs 2003, 2004, 2005, 2006, 2007, 2008, and 2009) estimated erroneous payments attributed to program administrator rent calculation and processing errors, using the same methodology, sampling procedures, and sample sizes as this FY 2010 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, 2007, 2008, and 2009 final reports were completed in July 2005, October 2006, October 2007, October 2008, October 2009, and October 2010 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.

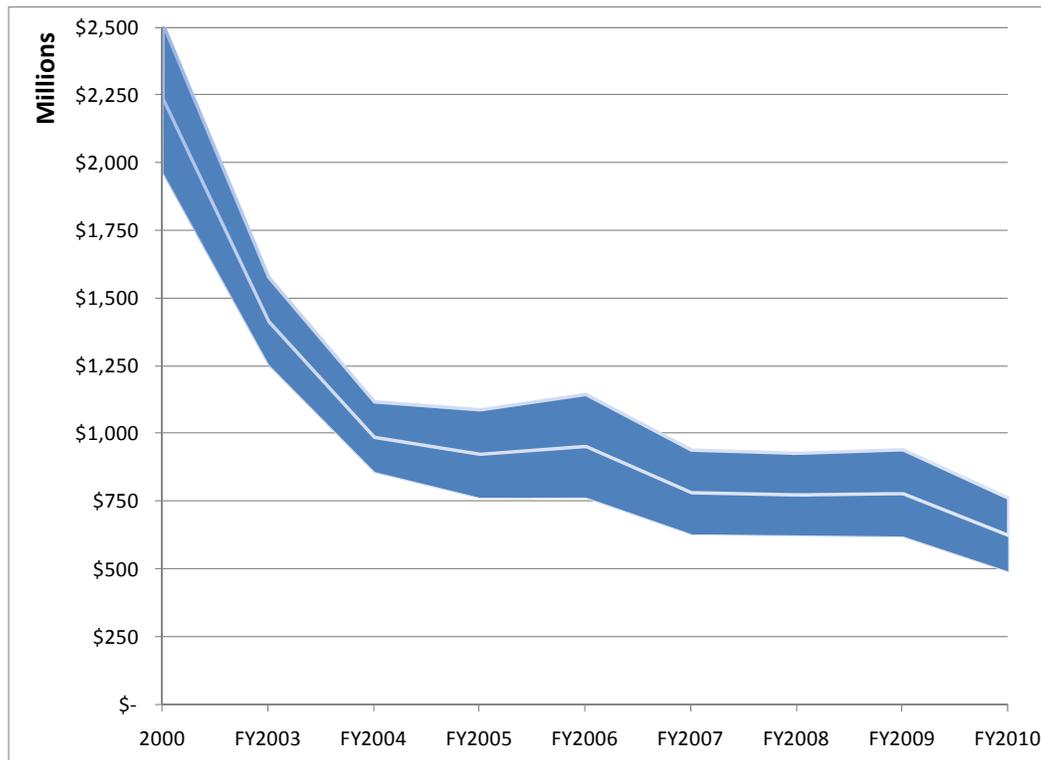
While the FY 2010 findings notably decreased from FY 2009, we cannot say that the difference is statistically significant. In addition, estimates may vary slightly from year to year based on the sample. Exhibit ES-4 presents a comparison of the gross erroneous payments for the QC studies from 2000 to FY 2010. Figure ES-1 graphically shows the progression of gross erroneous payments over time.

**Exhibit ES-4
Comparative 2000 through FY 2009 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 2010	\$141,033	\$341,515	\$482,548	\$167,719	\$650,266 ±\$137,235
FY 2009	\$130,268	\$440,288	\$570,556	\$209,455	\$780,011 ±\$162,116
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 2010	76.59%	68.85%	71.60%	68.89%	70.95%

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

Figure ES-1
Comparative 2000 through FY 2009 Gross Erroneous Payments Over Time



C. Sources of Errors

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

- Consistency errors—errors in logical conformity between elements within the 50058 or 50059 Forms
- Calculation errors—arithmetic errors within subsections of the 50058 or 50059 Forms
- Transcription errors—errors in transferring information from documentation in the tenant file to the 50058 or 50059 Forms
- Failure to conduct a recertification in a timely manner
- Failure to verify information.

Component errors are related to the income and expense components used to calculate rent. The income components are employment income, Social Security benefits and pensions, public assistance, other income, and asset income. The expense/allowance components are elderly/disabled allowance, dependent allowance, medical allowance, child care allowance, and disability allowance. Component errors often occur when project staff do not conduct a thorough tenant interview or do not verify the information obtained during the interview.

However, component error may also occur when the tenant supplies incorrect information, either intentionally or unintentionally. The discussion below responds to study Objectives 2 (identify the dollar costs of the various types of errors), and 6 (determine the apparent cause of significant rent errors).

Administrative Errors. The two most common administrative errors are 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 percentages of income and expense items verified by PHA/owner staff in FY 2010 were in general comparable to FY 2009. However, verification of pensions, asset income, and child care expenses increased 6 percent, 14 percent, and 6 percent, respectively. In FY 2010 medical expenses had the lowest overall verification rate (54%) while pensions had the highest verification rate (90%). The percent of items where the verified amounts matched the amount reported on the 50058 and 50059 Forms increased for three rent components: child care expenses, medical expenses, and asset income and remained relatively stable for the other rent components.

Obtaining income verification is often difficult. Even when repeated requests are made, employers sometimes do not respond to requests for verification, or they require payment. 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.

Recognizing the issues associated with verifying tenant information, HUD program staff have taken steps to clarify, and to some extent simplify, verification guidelines. PIH Notice 2010-19 dated May 2010, and Housing Notice H 2010-10 dated July 2010 provide new procedures for obtaining and using verification. However, these new verification guidelines did not apply during the FY 2010 QC Study because they were not implemented by HUD until the end of the fiscal year. The new verification rules will be integrated into future studies. It is expected that these new guidelines will result in reduced errors in the future.

Overdue Recertifications. HUD requires that every household be recertified annually. About 1 percent of households had overdue recertifications in FY 2010, which was about the same as in FY 2009.

Component Errors. Incorrect income and allowance amounts were by far the most significant sources of error in determining rents. Less than 1 percent of households with rent errors did not have an income or expense component error. Earned income (27%), medical allowances (22%), and pension income and other income (17%) continued to have the greatest percentage 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 2009 are provided in parentheses. Note that while the percentage of households with component errors has increased for some components such as other income and public assistance, the average dollar amount of component error has decreased for these components.

Exhibit ES-5
Rent Components Responsible for the Largest Dollar Error for Households with Rent Error

Rent Component	Percentage of Households	Average Dollar Amount
Earned Income	27% (25%)	\$3,162 (\$3,108)
Pensions	17% (30%)	\$2,021 (\$2,058)
Other Income	17% (12%)	\$2,173 (\$2,930)
Public Assistance	7% (5%)	\$1,915 (\$2,283)
Asset Income	2% (2%)	\$2,535 (\$1,160)
Medical Allowance	22% (19%)	\$1,308 (\$1,028)
Child Care Allowance	3% (2%)	\$1,263(\$1,399)
Dependent Allowance	4% (3%)	\$517 (\$571)
Elderly Allowance	2% (2%)	\$400 (\$400)
No Rent Component Error	<1% (<1%)	\$0
Total	100%	\$2, 067 (\$2,142)*

* The sum of the dollars associated with the largest component in error divided by the number of households with error. Note: FY 2009 findings are provided in parentheses. The elderly/disabled allowance cell size is too small to generate a reliable estimate.

D. Additional Findings

Eligibility of Newly Certified Households. A separate analysis of newly certified households (12%) was conducted to determine if these households were eligible for HUD housing assistance. Ninety-five percent of these households met all the eligibility criteria compared with 87 percent in FY 2009). All certified household in the sample were income-eligible on the basis of the QC income determination.

Two percent of the newly certified households failed to document *Social Security numbers* for one or more family members and 4 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). All households had the signed declaration forms or evidence accepted as proof of citizenship (an increase of 4 percent from FY 2009). These findings respond to study Objective 9 (estimate the percentage of newly certified tenants who were incorrectly determined eligible for program admission).

Occupancy Standards. Study Objective 7 asks for the extent to which households are overhoused relative to HUD's occupancy standards. Fifteen percent of all households occupied a unit with too many or too few bedrooms in FY 2010, according to the guidelines used for this study. Historically, the percent of households in units with the correct number of bedrooms according

to study guidelines are: FY 2004—88 percent; FY 2005—87 percent; FY 2006—86 percent; FY 2007—85 percent; FY 2008—87 percent; FY 2009—86 percent; FY 2010—85 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. Ninety-four percent of new admission files contained rent reasonableness documents, as did 73 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 95 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 5 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, 93 percent of the utility allowance values matched. For the second comparison, 94 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, 89 percent of the payment standards matched. For the second comparison, 94 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 Form Rent Calculation Error. The tenant rent was calculated using only data on the 50058/50059 Forms 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 Form data to calculate rent, errors were found in 6 percent of the households. This is clearly different than the QC error calculation where errors were found in 33 percent of the households. In addition, error was found in both the 50058/50059 Form and QC calculation in only 3 percent of the households.

PIC/TRACS Comparison. The 2404 households in the study were matched to the PIC/TRACS databases to respond to study Objective 14. Ninety-eight percent of the owner-administered households were found in TRACS and 97 percent of households were found in PIC. The average net and gross dollars in error was higher for households where 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 survey. Multivariate analyses were conducted to explore whether project characteristics or practices contributed to administrative or rent errors. The multivariate analysis did reveal that PHA-administered Section 8 projects were more likely to have gross dollar error and overpayment error.

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 percent of items with transcription error. 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 allowances, those with earned income, those with public assistance income, and those with other income sources.

E. HUD Initiatives: 2000–2010

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—

- A Rental Housing Integrity Improvement Program (RHIP) committee headed by the Office of the Chief Financial Officer with representatives from the other affected Offices was formed to coordinate and monitor corrective actions. The committee meets to review progress, and identify and resolve impediments to progress in reducing errors.
- The Offices of Housing and Public and Indian Housing developed and issued new handbooks and instructional material that detailed all current HUD program requirements and standardized them to the extent possible without regulatory or statutory change. These handbooks cover nearly all aspects of occupancy policy, from the point of tenant application for admission and rent calculations through ongoing occupancy to lease termination. For Public Housing, the issuance of a Public Housing Occupancy Guidebook represented the first such effort in more than 20 years, and provided a defined methodology for calculating a number of complex requirements (e.g., the Earned Income Disallowance).
- The Offices of Housing and Public and Indian Housing substantially increased training efforts, and have held a number of national and regional training sessions. This contrasts with a less activist role in the 1980s and 1990s.

- 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 National Directory of New Hires (NDNH) income and wage database for income matching purposes. It uses 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. Access to the NDNH database is available through the Enterprise Income Verification (EIV) System.
- The Offices of Housing and Public and Indian Housing initiated a computer matching program with the Social Security Administration (SSA) that provides SSA data for tenants receiving assisted housing. SSA electronically provides HUD with benefit information on all active household members who have disclosed a valid social security number. HUD makes this information available to administrators of the Public Housing and Section 8 programs through the EIV system. This information allows PHAs to validate social security numbers and SSA benefits quickly and efficiently.
- In 2010, HUD issued the *Implementation of Refinement of Income and Rent Rule*, which mandated the use of the EIV system (discussed in the previous two bullets) as a third-party source to verify tenant employment and income information during mandatory recertification of family composition and income. The use of EIV minimizes the need for traditional third party verification forms. To make the EIV system as effective as possible, the rule was also revised to require all applicants and participants to disclose a social security number, no longer exempting children under the age of six.

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 2005 showed that HUD exceeded this goal, and has since further decreased error. 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 2010 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. While there was a notable decrease in the gross dollar error rate in FY 2010, the results were not statistically significant when compared to FY 2009. 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:

- 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 reported information in the New Hires income matching database and tenant reported information.
- 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.
- 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 consider creating a handbook that combines or cross references the rules and regulations for all rental assistance programs administered by HUD. The Earned Income Disregard is one example of a difficult rule where PHA/owners would benefit from clearer guidelines and training materials.
- HUD should continue to implement and expand the scope and depth of its on-site 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:

- Consider conducting a remote data collection with national estimates and a larger number of households per project, where PHA/projects mail copies of the tenant file to study

headquarters. Eliminating a field data collection would eliminate the need to travel, and the costs associated with travel, allowing for a stratified sample that would increase the precision of the national estimates, as well as potentially provide better project-level information.

- 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 eight 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 between information on the 50058/50059 form and the tenant file. 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 Subsidy Determinations Study for FY 2010

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.⁴ 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 2010. HUD identified 17 study objectives related to types of errors and cost issues; this report addresses 15 of those objectives. Objective 15 refers to the Income Match Study whose findings were published in a separate report. The 17th objective addresses billing errors in Multifamily Housing Programs. This study was not conducted for FY 2010. 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, some special analyses were conducted as part of this work. Utility Allowances, Payment Standards and Rent Reasonableness practices used by the PHAs administering the Section 8 voucher program were evaluated, and estimates of error for the 20 largest PHAs included in the quality control study were provided.

B. Background of the Study

This study is the tenth 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 six 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,⁵ was published in June 2001 (data were collected in 2000).

⁴ 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.

⁵ From May 1999 through December 2006, Macro International Inc. was a wholly owned subsidiary of Opinion Research Corporation (ORC) and conducted business under the name ORC Macro. In March 2009, Macro International Inc. was acquired by ICF International and is a wholly owned subsidiary operating under the name ICF Macro.

- 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.
- 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).
- The final report of the eighth study, conducted by ICF Macro, was published in October 2009 (data were collected in 2009).
- The final report of the ninth study, conducted by ICF Macro, was published in October 2010 (data were collected in 2009 and 2010).

Work on the current project began in April 2010. 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 2009 through October 2010.

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

D. Definitions of Key Terms

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

- **Actual Rent**—the tenant rent from the 50058 or 50059 Form.
- **Administration Type**—PHA or owner.
- **Abstract Month**—the month in which the data collection process for any given household was initiated.
- **Calculation Errors**—arithmetic errors within subsections of the 50058 or 50059 Form.
- **Case Type**—certification, recertification, and overdue recertification.
- **Component Errors**—the income and expense components used to calculate rent that are responsible for an error in the rent calculation. 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 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 ICF Macro using the tenant file, household interview, and verification data.
- **Rent Component**—the five sources of income (earned, pensions, public assistance, other income, and assets) and the five types of deductions (medical, child care, 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 2010 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations*.⁶

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 8, 12, 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, Section 202/162 PAC, and Section 811 PRAC). 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 543 distinct projects in 58 geographic areas across the United States and Puerto Rico. We sampled 200 projects from each major program type.⁷ 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 2,400 households. The final data set includes responses from 2,404 households in the 543 projects.

The tenant sample was selected from all households that were receiving assistance in Federal FY 2010. 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, 14 Housing Authorities’ Section 8 Voucher projects had household sample sizes of 12 or greater, including those of New York City and Los Angeles.

⁶ ICF Macro unpublished report to HUD dated May 6, 2010.

⁷ 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.”

Once the sample for the QC Study was identified, additional projects and households were selected for the 20 largest PHAs in the QC Study sample. This additional sample allowed us to provide supplemental findings for these large PHAs. At least 32 cases were sampled per PHA. If a PHAs QC Study sample size was sufficiently large, we did not supplement it; however, if only a few households were sampled from the PHA, we added substantially to the sample. As in the QC study, we allowed vouchers to be selected more than once. Since we selected households in groups of 4, we strove for eight projects per PHA, with possible multiple selections for the Section 8 voucher and Moderate Rehabilitation projects. The resulting sample yielded 27 new projects that were not selected for the QC Study, and 276 new households. For additional information on the sampling procedures, see the *Sampling Plan for the FY 2010 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations*.⁸

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.⁹ Tenant income, expense, allowance, and third-party verification information were collected using HUD-sanctioned data collection procedures. ICF 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 August 2010. Field data collection began in November 2010 and ended in early March 2011. 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.

⁸ ICF Macro unpublished report to HUD dated April 30, 2010.

⁹ 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., printouts from EIV system).

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 ICF 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 ICF Macro survey specialists and computer systems experts.¹⁰ 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 was completed. HDCS data were transferred to ICF 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 PHA/project staff person knowledgeable about certification and recertification procedures was asked to complete a survey on the web. 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.

¹⁰ 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).

Hiring and Training Field Interviewers. Sixty-six 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 31 field interviewers who had not worked on the FY 2009 study, and a three-day training was conducted for 15 interviewers who had completed the FY 2009 study. In addition, a three-day remote training was offered for 16 field interviewers that had worked on at least the last two consecutive HUDQC studies. The 10-day training covered:

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

The three-day training sessions covered a review of the project background and data collection procedures and focused particularly on changes implemented for the FY 2009 study.

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

HDCS was designed to collect data in the same formats as the official 50058 and 50059 Forms published by HUD. New York City Public Housing Authority uses a format for the 50058 Form 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. In previous study years we encountered projects where the 50058 Forms differed from the official HUD format. In those cases paper crosswalks were developed by ICF Macro by examining the data elements on the atypical form and developing a plan that illustrated which fields corresponded to the standard 50058 Form. In the FY 2010 study 23 non-standard documents required crosswalks. These were found in seven projects administered by 4 PHAs.

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 ICF 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.

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,¹¹ ICF 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 ICF 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 Supplemental Security income (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.

¹¹ 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.

D. Field Data Collection Time Periods

Data were collected in the field between November 2010 and March 2011 for the certification or annual recertification that occurred during FY 2010 (October 2009 through September 2010).¹² Field interviewers collected data related to actions that may have occurred up to 18 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 2010) was completed. For most households in the owner-administered programs, the QCM is the month in which the project manager (or other authorized housing project staff member) signed the 50059 Form, certifying that the information contained on the form was correct. The rent calculation date on the 50058 Form was the “date modified” printed on the form. If these pieces of information were not available on the 50058/50059 Form, the field interviewer used other documentation in the tenant file to determine when the action was taken.

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

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 2010. 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

¹² 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 2010 were included in the FY 2010 study.

documents (those that had been gathered to verify the information on the 50058/50059 Form being reviewed) were entered into 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 into 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 items were collected at both the member and household levels, with income and expense items in hourly, weekly, monthly, or annual amounts. ICF 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 file documentation with information obtained in the household interview and received from third-party verification. This variable specifically identified the income/asset/expense and household member to which it belonged.

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

F. Rent Formulae

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

1. Thirty 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. Ten 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 1–3 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:

1. Public Housing
2. Section 8 Project-Based (including Moderate Rehabilitation), Sections 202 PRAC, 811 PRAC, and Section 202/162 PAC
3. Section 8 Vouchers
4. Section 8 Enhanced Vouchers (there were 21 Enhanced Voucher households in the study)
5. Manufactured Home Space Rental for Section 8 Vouchers (there were no households in the study sample that met this criterion).

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

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

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

G. Calculation of Rent Error

The monthly rent algorithms used by ICF 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.¹³

¹³ Rent Roll data were 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.

- **Quality Control Rent**—The monthly rent calculated by ICF Macro using all of the verified household information.¹⁴

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

ICF 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, ICF Macro first used available verification from the project files. If acceptable verification was not available from the tenant file, verification was requested from an appropriate third party (see Section II-D for a discussion of acceptable verification). If the verification was not returned by the third party and the tenant file did not include verification, information obtained during the household interview was used. The following special procedures were followed when calculating the QC Rent as appropriate:

- Income that started after the QCM was not counted when calculating the QC Rent.
- Income that ended after the QCM was counted for the full year unless it was clear that the PHA/owner knew that this income was going to end.
- Earned income bonuses were not counted unless it was clear that the bonus was paid on a regular basis.
- Temporary Assistance to Needy Families (TANF) and Other Welfare income were treated as the same source of income so that income listed as TANF on one form (e.g., the household questionnaire), and Other Welfare on another form (e.g., the Documentation Forms) would not be counted twice.
- 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 was assigned to a household member based on EIV documentation if two items were evident on the EIV printout: (1) receipt of Social Security or Supplemental Security Income (SSI) benefits and (2) a disability status of “yes.”

¹⁴ 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.

- 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 website.
- 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 ICF 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.

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

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

To identify households eligible for the earned income disregard, tenants were asked about training and self-sufficiency programs during the household interview. Forty-one 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 Form 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 National Directory of New Hires.

In 28 (of the 41) 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 four cases the PHA gave an earned income disregard but QC did not.

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. Based on documentation in the tenant file and information from the household interview, 13 household members had indications of involvement in training programs. None of these 13 were found to be eligible for the training program income exclusion.

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, 14 households representing seven PHAs were entitled to permissible deductions. In 10 cases a percentage between 7.65 percent and 22.5 percent of earned income was deducted from the gross earned income, and one case where the net earned income was used. In two cases the PHA deducted 100% of medical expenses for families with earned income. Finally in one case the PHA deducted \$1,152 from annual income for part-time students.

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 65 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. ICF 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. Eight households (less than 1 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.¹⁵ The TANF benefits in 65 households were reviewed and in two cases the QC is counting imputed TANF amounts but the PHA did not impute TANF benefits.

Students. The regulations governing the PHA-administered Section 8 and owner-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. Twenty-six cases were reviewed and all were correctly receiving housing assistance.

¹⁵ 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 17 study objectives and a brief description of the methodology used to meet them.¹⁶ 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 2009 studies are replicated in the FY 2010 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.¹⁷ 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, childcare, and disability assistance expenses,

¹⁶ See *Analysis Plan for the FY 2010 HUDQC Study, Quality Control for Rental Assistance Subsidy Determinations*, an unpublished ICF Macro report to HUD, dated May 3, 2010 for a more detailed description of the methodology.

¹⁷ 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 $CE = (12/.30) * RE = (120/3) * RE = 40 * RE$).

dependent allowance, and elderly/disabled allowance). If the component with the largest error is earned income, the largest dollar error would reflect the difference between the earned income used by the PHA/project, and the earned income used in the QC rent calculation.

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. Multivariate analyses were performed to determine whether differences from program to program were statistically significant.

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 over-housed 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-1.¹⁸

¹⁸ Local projects have discretion in determining unit size, and may determine unit size differently than shown.

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 households in compliance with and in violation of occupancy standards according to the guidelines in the Exhibit III-1.

**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 to 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 to 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 tenant 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 investigate the relationship between using an automated rent calculation system and project-level gross error rate using an analysis of variance. We also examine whether gross rent error differed significantly by computer use between programs. This analysis is addressed in Appendix F.

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. This analysis is addressed in Appendix F.

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.

Objective 15: Determine the extent of errors that were due to unreporting of income by tenants.

All household members in the QC study will be matched with the National Directory of New Hires (NDNH) database to identify sources of earnings and unemployment compensation benefits received, but not reported, by tenants. Following the guidelines provided in the HUD Income Matching Procedures for Analyzing Income Match Data, unreported sources of income will be identified and the subsidy overpayment dollars associated with those unreported sources of income will be identified. The findings from this analysis are presented in a separate report.

Objective 16: Determine the extent of program administrator rent and income determination errors.

This objective is essentially a summary of Objectives 1 through 3. The percentage of households in error and the dollars associated with those households will be determined analytically and reported accordingly.

Objective 17: Determine the extent of errors due to Multifamily Housing Program administrators billing for subsidy that did not correspond to the subsidy reported on the HUD-50019/HUD-50059A for a tenant household.

In FY 2010, the Multifamily Housing Program Billing Study option was not implemented.

**Exhibit III-2
Summary of Study Objectives**

#	Objective	Where Objective Is Addressed	
		Executive Summary	Section IV
1	Identify the various types of rent errors, rent error rates, and calculate their variance estimates: <ul style="list-style-type: none"> Dollar Rent Error Total Component Dollars in Error Largest Component Dollar Error. 	p. iv–viii Exhibits 2 & 5	p. 2–7; Exhibits 3–5 p. 12–15; Exhibits 13–14
2	Identify the dollar costs of the various types of errors: <ul style="list-style-type: none"> Calculation errors Consistency errors Transcription errors Incorrect determination of allowances and income sources Overdue recertifications. 	p. vi–viii	p. 20–22; Exhibits 22–23 p. 12–13; 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. 3–7; Exhibits 3–6

#	Objective	Where Objective Is Addressed	
		Executive Summary	Section IV
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; Exhibit 18
5	Determine whether error rates and error costs have statistically significant differences from program to program.	p. xi	p.43
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. 12–22; Exhibits 12–23
7	Determine the extent to which households are over-housed relative to HUD’s occupancy standards.	p. ix	p.22–23 ; Exhibits 24
8	Provide information on the extent to which errors are concentrated in projects and programs.	p. v	p. 5–7; Exhibits 3–6
9	Identify the percentage of newly certified tenants who were incorrectly determined eligible for program admission.	p. viii	p. 8–10; Exhibit 8
10	For Section 8 Voucher households, determine: <ul style="list-style-type: none"> • 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. 24–36; Exhibits 25–29
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. xi	p. 43
13	Determine whether other tenant or project characteristics on which data are available are correlated with higher or lower error rates.	p. xi	p. 43
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. xi	p. 36–39; Exhibits 30a-e
15	Determine the extent of errors that were due to unreporting of income by tenants.	These findings were published in a separate Draft Income Match Report dated September 2, 2011.	
16	Determine the extent of program administrator rent and income determination errors.	p. iii–viii; Exhibits 1–3, 5	p. 5–7; Exhibits 3–6 p. 10; Exhibit 9 p. 12–14; Exhibits 12–14 p. 20–22; Exhibits 22–23
17	Determine the extent of errors due to Multifamily Housing Program administrators billing for subsidy that did not correspond to the subsidy reported on the HUD-50019/HUD-50059A for a tenant household.	In FY 2010 the Multifamily Housing Program Billing Study option was not implemented.	

IV. FINDINGS

A. Overview

Analyses were conducted using weighted sample data for 2,404 households.¹⁹ 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 2010 data) are compared with the data collected in a previous study (referred to as the FY 2009 data). The data were collected and the analysis was completed for the FY 2009 study in calendar year 2010.

This discussion is divided into 11 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), multivariate analysis and errors for the 20 Largest PHAs. The multivariate analysis will be included in an addendum provided at a later date. 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 50058/50059 Form
- Calculation errors—arithmetic errors within subsections of the 50058/50059 Form
- Transcription errors—errors in transferring information from documentation in the tenant file to the 50058/50059 Form

¹⁹ Appendix B presents the procedure used in weighting the data.

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

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

B. Rent Error

Overview. Rent errors were identified by subtracting the QC Rent from the Actual Rent.²⁰ 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 Rent Error (gross or net) by the sum of the QC Rent, for the entire sample or a specified group of households.

²⁰ Rent error is determined on the basis of Tenant Rent, not TTP. Error based on TTP may differ from Tenant Rent because of the program specific rent formulas applied when calculating Tenant Rent. These rent formulas are listed in Section II-F and presented in detail in Appendix A.

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

Verification Used in Determining the QC Rent. As indicated above, a set of rules was established for third-party verification (see Section II-D). If an income or expense component was used for a rent calculation and was not verified by the PHA/owner, ICF Macro staff sought third-party verification. However, ICF Macro verification could not be obtained for all PHA/owner unverified items despite considerable effort and expense.²¹

Exhibit IV-1 shows the percentage of each rent component that was verified by either the PHA/owner or ICF Macro. Findings from FY 2010 are compared to findings from FY 2009.

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

Rent Component	Third-Party Verbal or In-Writing, Documentation, or EIV		Third-Party In-writing	
	2009	2010	2009	2010
Earned Income	91%	93%	75%	74%
Pensions	99%	99%	84%	90%
Public Assistance	91%	90%	64%	64%
Other Income	87%	87%	63%	59%
Asset Income	87%	91%	63%	77%
Child Care Expense	76%	84%	64%	70%
Medical Expense	79%	82%	53%	54%

Source: Tables 1a and 1b, Appendix C

The first two columns present the percentage of rent components that were verified with third-party in-writing, third-party verbal, documentation²² or Enterprise Income Verification (EIV). The remaining two columns present the percentage of rent components that were verified with

²¹ 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.

²² Documentation means documents submitted by the family such as pay stubs or bank statements, or a statement in the file indicating the project staff viewed an acceptable verification (but there was no copy in the file).

the more stringent verification requirements for this study (i.e., third-party in-writing). As the exhibit indicates, when compared to the previous study period, the rate of third-party verification remained the same or increased for most rent components, with very small declines for earned income and other income. It should be 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) by different types of verification. Table C-1c includes items verified by a third-party or EIV. Table C-1d provides data for items verified by verbal third-party information, and Table C-1e provides data for items verified via tenant file documentation. Finally, Table C-1f includes items verified by EIV.

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 67 percent of the households, which is a higher percentage than FY 2009. There was an exact match of rent payment in 55 percent of households in FY 2010, compared with 51 percent in FY 2009.

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
	2008	2009	2010	2010	2008	2009	2010	2010
Public Housing	66%	72%	71%	1.8%	53%	59%	60%	2.0%
PHA-Administered Section 8	61%	57%	62%	2.4%	47%	47%	50%	2.3%
<i>Total PHA-Administered</i>	63%	62%	65%	1.9%	49%	51%	54%	1.8%
Owner-Administered	64%	64%	71%	1.4%	52%	53%	58%	2.0%
Total	63%	63%	67%	1.6%	50%	51%	55%	1.6%

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-three percent of the households have a rent error greater than \$5, lower than the 37 percent in FY 2009. 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 \$13 in FY 2010, a lower average gross dollar error than in FY 2009. 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 6 percent in FY 2010 compared with 8% in FY 2009.

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	
	2009	2010	2009	2010	2009	2010
Public Housing	28%	30%	\$11	\$12	5%	5%
PHA-Administered Section 8	43%	38%	\$20	\$15	10%	7%
<i>Total PHA-Administered</i>	38%	35%	\$17	\$14	8%	7%
Owner-Administered	36%	29%	\$13	\$11	7%	5%
Total	37%	33%	\$16	\$13	8%	6%

Source: Table 2 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. Sixteen percent of all households paid in excess of \$5 less than they should have in FY 2010. The error is slightly lower than 18 percent in FY 2009. For the FY 2010 households, the average monthly payment error was \$47, significantly lower than the mean of \$54 in FY 2009 and slightly lower than the mean of \$49 in FY 2008.

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

Administration Type	Percent of Households in Error			Average Dollar Amount of Error					
				For Underpayment Households (with errors > \$5)			For All Households		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
Public Housing	16%	14%	15%	\$49	\$52	\$45	\$8	\$7	\$7
PHA-Administered Section 8	19%	21%	17%	\$52	\$56	\$49	\$10	\$12	\$8
<i>Total PHA-Administered</i>	18%	19%	16%	\$51	\$55	\$48	\$9	\$10	\$8
Owner-Administered	17%	16%	14%	\$43	\$49	\$45	\$7	\$8	\$6
Total	18%	18%	16%	\$49	\$54	\$47	\$9	\$10	\$7

Source: Table 2 and 4, Appendix C

As shown in Exhibit IV-4b, 18 percent of all households paid in excess of \$5 more than they should have in FY 2010 which is slightly less than the FY 2009 percentage, 19 percent. In FY 2008 it was also 19 percent. The average monthly overpayment for households with overpayment error was \$33 in FY 2010, up slightly from \$32 in FY 2009 and lower than \$37 in FY 2008.

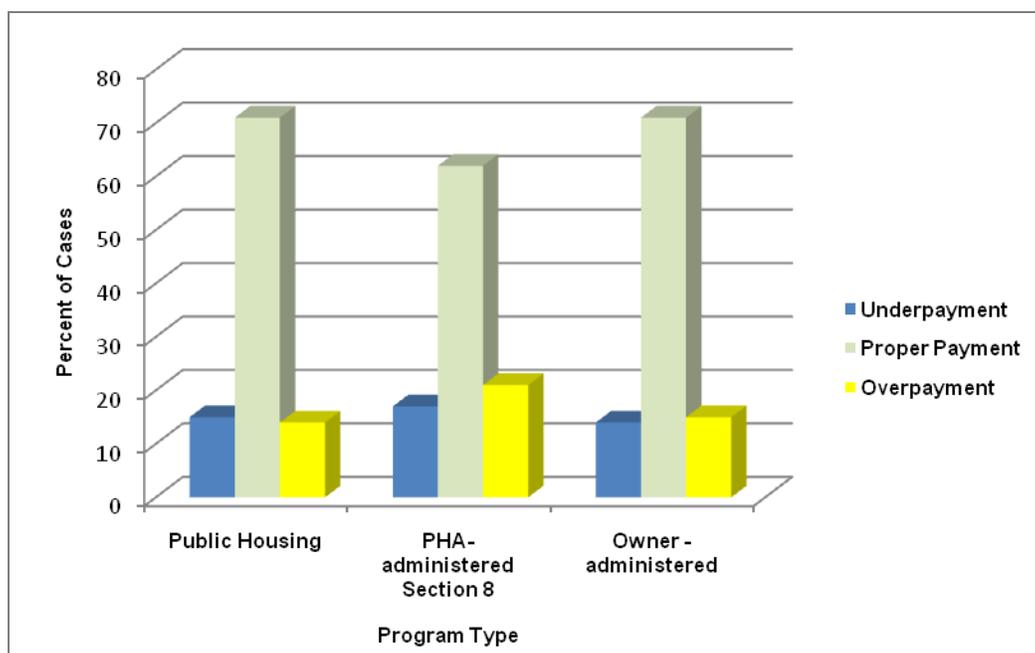
**Exhibit IV-4b
Overpayment Households
Percent of Households and Average Monthly Dollar Amount of Error**

Administration Type	Percent of Households in Error			Average Dollar Amount of Error					
				For Overpayment Households (with errors > \$5)			For All Households		
	2008	2009	2010	2008	2009	2010	2008	2009	2010
Public Housing	18%	14%	14%	\$45	\$28	\$38	\$8	\$4	\$5
PHA-Administered Section 8	19%	21%	21%	\$41	\$36	\$33	\$8	\$8	\$7
<i>Total PHA-Administered</i>	19%	19%	19%	\$42	\$34	\$34	\$8	\$6	\$6
Owner-Administered	19%	20%	15%	\$25	\$27	\$29	\$5	\$5	\$4
Total	19%	19%	18%	\$37	\$32	\$33	\$7	\$6	\$6

Source: Table 3 and 4. Appendix C

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

**Figure IV-1
Payment by Program Type**



Gross and Net Dollars in Error. Exhibit IV-5 presents the gross and net average dollars in error and their associated standard error. To obtain the Gross and Net Rent Error, the dollar amount of overpayments is added to the dollar amount of underpayments, first using the absolute values for gross error, and then the arithmetic values for the net error. The net error measures the dollar cost of the errors and is -\$2 (indicating a tenant underpayment) for FY 2010; the average gross dollar

error is \$13 for FY 2010 and represents the dollars associated with the errors (the magnitude of the errors). Gross average dollar error is lower for all programs except Public Housing in FY 2010. While gross average dollar error has decreased for PHA-Administered Section 8 and Owner-administered programs, the difference is not statistically significant when compared with FY 2009.

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

Administration Type	Gross Rent Error				Net Rent Error			
	Average Dollars in Error		Standard Error		Average Dollars in Error		Standard Error	
	2009	2010	2009	2010	2009	2010	2009	2010
Public Housing	\$11	\$12	\$1.22	\$0.99	-\$3	-\$2	\$1.29	\$1.45
PHA-Administered Section 8	\$20	\$15	\$1.78	\$2.04	-\$4	-\$1	\$2.18	\$2.00
<i>Total PHA-Administered</i>	\$17	\$14	\$1.38	\$1.50	-\$4	-\$1	\$1.40	\$1.17
Owner-Administered	\$13	\$11	\$1.77	\$1.20	-\$2	-\$2	\$1.76	\$1.14
Total	\$16	\$13	\$1.04	\$1.35	-\$3	-\$2	\$0.98	\$0.73

Source: Table 5, Appendix C

* Difference at significance $p < .05$

Error Rates by Program. Differences in error rates by program type 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 remains higher for PHA-administered Section 8 programs than for either Public Housing or owner-administered programs. However, the PHA-administered Section 8 programs did show the largest decrease in their gross error rate in FY 2010, decreasing about 2.7 percent. The Gross Error Rate for FY 2010 increased slightly from FY 2009 for Public Housing, and decreased about 1.5 percent for owner-administered programs. Overall, the Gross Error Rate decreased about 1.5 percent from FY 2009 to FY 2010. The Net Error Rates for all programs decreased 1 percent in FY 2010 from FY 2009.

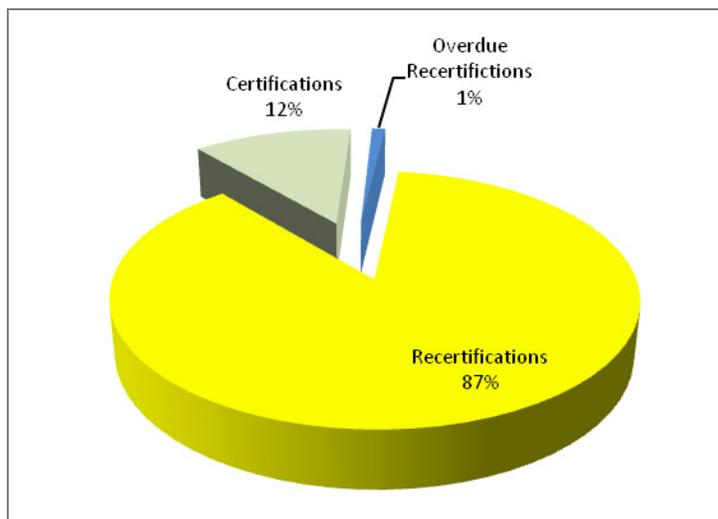
**Exhibit IV-6
Gross and Net Dollar Error Rates (Monthly) for All Households**

Administration Type	Error Rates			
	Gross Error Rate		Net Error Rate	
	2009	2010	2009	2010
Public Housing	5.0%	5.3%	-1.5%	-.7%
PHA-Administered Section 8	9.9%	7.2%	-2.2%	-.6%
<i>Total PHA-Administered</i>	8.1%	6.5%	-1.9%	-.6%
Owner-Administered	6.8%	5.3%	-1.2%	-.9%
Total	7.7%	6.2%	-1.7%	-.7%

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.

**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 2010 87 percent of the households were timely recertifications, and 1 percent of the households were overdue recertifications, compared with less than 1 percent in FY 2009. The findings indicate that there was a slight decrease in the total percentage of certifications from 13 percent in FY 2009 to 12 percent in FY 2010.

**Exhibit IV-7
Certifications and Recertifications by Administration Type**

Administration Type	Certifications		Timely Recertifications		Overdue Recertifications		Row Total By Year*
	2009	2010	2009	2010	2009	2010	
Public Housing	12%	12%	87%	86%	<1%	2%	100%
PHA-Administered Section 8	10%	10%	89%	89%	2%	1%	100%
<i>Total PHA-Administered</i>	11%	11%	88%	88%	1%	1%	100%
Owner-Administered	17%	17%	83%	83%	-	<1%	100%
Total	13%	12%	87%	87%	<1%	1%	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. All households (according to the QC Rent calculation) fell within the low-income limit for total gross income.

A household met the citizenship or Social Security number criteria if there was evidence in the tenant file that the citizenship or Social Security number was verified. The data indicate that a citizenship code (indicating whether each household member was a citizen, eligible noncitizen, or ineligible noncitizen) and a Social Security number was available (from either the tenant file or the household interview) for each household member. According to the citizenship codes, no households in FY 2010 had a household member for whom there was no verification of citizenship. This is a decrease from FY 2009, where 4 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 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) a copy of the Social Security card, or statement from the Social Security Administration verifying the Social Security number.

In 96 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	
	2009	2010
Citizenship	96%	100%
Social Security Number	98%	98%
Consent Form	91%	96%
Low and Very Low Income	100%	100%
Meets All Eligibility Criteria	87%	95%

Source: Table 7, Appendix C

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

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

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 monthly underpayment dollar amounts for new certifications (\$2.45 million) was divided by the total number of certifications for whom QC Rent could be calculated (.51 million). The result is an underpayment average dollar amount of \$5.

The data indicate that the amount of underpayment and overpayment average dollar error in new certifications and timely recertifications in FY 2010 range from five to seven dollars each month. As might be expected, there is a large difference in the underpayment error for overdue recertifications (\$37) as well as the overpayment dollar error for overdue recertifications (\$46). The estimates for overdue recertifications can vary widely from year to year due to the small number of cases.

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

Household Type	Underpayment Average Dollar Amount		Overpayment Average Dollar Amount	
	2009	2010	2009	2010
Certifications	\$7	\$5	\$9	\$7
Timely Recertifications	\$9	\$7	\$5	\$5
Overdue Recertifications	\$51	\$37	\$55	\$46
Total	\$10	\$7	\$6	\$6

Source: Table 8, Appendix C

Subsidies. The actual cost of errors to HUD is expressed in terms of subsidy payments. For purposes of this study, HUD subsidies for the Section 8 Voucher program equal the lower of the Gross Rent or the applicable payment standard minus the Tenant Share. For Public Housing, the subsidy is the applicable payment standard minus the TTP, and for Housing programs, the

subsidy is the Gross Rent minus the TTP. The subsidy is correct if the Actual Rent equals the QC Rent (within \$5). A negative subsidy error occurs when the tenant pays too much rent (QC Rent < Actual Rent). A positive subsidy error occurs when the tenant pays too little rent (QC Rent > Actual Rent). These subsidy errors by program type are summarized in Exhibit IV-10a and 10b. The subsidy errors by certification status are summarized in Exhibit IV-11.

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

Administration Type	Percent of Households in Error		Average Dollar Amount of Error			
			For Negative Subsidy Households (with errors > \$5)		For All Households	
	2009	2010	2009	2010	2009	2010
Public Housing	14%	14%	\$28	\$38	\$4	\$5
PHA-Administered Section 8	21%	21%	\$36	\$33	\$8	\$7
<i>Total PHA-Administered</i>	19%	19%	\$34	\$34	\$6	\$6
Owner-Administered	20%	15%	\$27	\$29	\$5	\$4
Total	19%	18%	\$32	\$33	\$6	\$6

Source: Tables 2 and 4, Appendix C

Note: Table results replicate Exhibit IV-4b for the convenience of the reader.

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

Administration Type	Percent of Households in Error		Average Dollar Amount of Error			
			For Positive Subsidy Households (with errors > \$5)		For All Households	
	2009	2010	2009	2010	2009	2010
Public Housing	14%	15%	\$52	\$45	\$7	\$7
PHA-Administered Section 8	21%	17%	\$56	\$49	\$12	\$8
<i>Total PHA-Administered</i>	19%	16%	\$55	\$48	\$10	\$8
Owner-Administered	16%	14%	\$49	\$45	\$8	\$6
Total	18%	16%	\$54	\$47	\$10	\$7

Source: Tables 2 and 4, Appendix C

Note: Table results replicate Exhibit IV-4a for the convenience of the reader.

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

Household Type	Negative Subsidy Average Dollar Amount of Error		Positive Subsidy Average Dollar Amount of Error	
	2009	2010	2009	2010
Certifications	\$7	\$5	\$9	\$7
Timely Recertifications	\$9	\$7	\$5	\$5
Overdue Recertifications	\$51	\$37	\$55	\$46
Total	\$10	\$7	\$6	\$6

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 error²³ 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 \$3,162, for 27 percent of households in error where earned income is the largest component error. Asset income was the next largest component with an average dollar error of \$2,535, found in 2 percent of households in error. Medical expense was a component of error in 22 percent of households, with an average associated dollar error of \$1,308. Other income had the third largest average dollar error of \$2,173 found in 17 percent of all households in error.

Between FY 2009 and FY 2010, average dollar error amounts increased for two of the four components producing the highest percentage error. Earned income and medical allowance average dollar error increased while other income and pension average dollar amounts in error

²³ The denominator in the percentage is the number of households with any component error, which was 33 percent of total households in FY 2010.

decreased. Of the other components in error, only asset income increased in average dollar amount from FY 2009, a shift most likely due to the small number of households in error because of asset income. All other components had moderate decreases in average dollar error.

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	
	2009	2010	2009	2010
Earned Income	25%	27%	\$3,108	\$3,162
Other Income	12%	17%	\$2,930	\$2,173
Public Assistance	5%	7%	\$2,283	\$1,915
Pensions	30%	17%	\$2,058	\$2,021
Child Care Allowance	2%	3%	\$1,399	\$1,263
Asset Income	2%	2%	\$1,160	\$2,535
Medical Allowance	19%	22%	\$1,028	\$1,308
Dependent Allowance	3%	4%	\$571	\$517
Elderly Allowance	2%	2%	\$400	\$400
No Rent Component Error	<1%	<1%	\$0	\$0
Total	100%*	100%*	\$2,142	\$2,067

Source: Table 9, Appendix C

* Numbers may not add up to 100% due to rounding.

Note that for some households the rent error is not caused by one of the 10 components listed. Rather, it is caused by other arithmetic errors or using the wrong rent calculation formula. The percent of households in error changed minimally for most rent components, with the exception of pension income which decreased as a source of rent error.

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. Average Total Dollars in Error increased only for Public Housing households, from FY 2009 to FY 2010, with an increase of \$142. There were also small increases in the Average Largest Dollars in Error for Public Housing and owner-administered households in FY 2010.

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	
	2009	2010	2009	2010
Public Housing	\$2,420	\$2,562	\$2,027	\$2,038
PHA-Administered Section 8	\$3,014	\$2,605	\$2,316	\$2,109
<i>Total PHA-Administered</i>	\$2,864	\$2,592	\$2,243	\$2,089
Owner-Administered	\$2,367	\$2,265	\$1,915	\$2,009
Total	\$2,710	\$2,501	\$2,142	\$2,067

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, 6 percent of total households with underpayment rent error had errors in earned income, 4 percent of households with proper payment had errors in earned income and 5 percent of households with overpayment rent had errors in earned income. Exhibit IV-14 also relays this data by PHA- and owner-administered households. The exhibit indicates that earned income (11 percent = 6 percent underpayment + 5 percent overpayment) and pension income (also 11 percent) are the rent components with the highest percentage of error leading to improper payment, followed by medical expense (10%).

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%	5%	3%	4%	7%	3%	5%
Pensions	4%	6%	5%	8%	15%	10%	5%	7%	6%
Public Assistance	2%	2%	2%	2%	1%	2%	1%	1%	1%
Other Income	5%	2%	4%	4%	4%	4%	4%	2%	3%
Asset Income	2%	3%	2%	4%	6%	5%	2%	3%	3%
Dependent Allowance	1%	<1%	<1%	<1%	<1%	<1%	2%	1%	2%
Elderly/Disabled Allowance	<1%	<1%	<1%	<1%	<1%	<1%	2%	<1%	1%
Child Care Allowance	<1%	<1%	<1%	<1%	<1%	<1%	1%	<1%	1%
Disability Allowance	-	-	-	<1%	-	-	-	-	-
Medical Allowance	3%	7%	4%	5%	12%	8%	6%	7%	6%
No Rent Component Error	<1%	-	<1%	42%	42%	42%	<1%	<1%	<1%

Source: Table 11, Appendix C

Exhibit IV-14 also reflects component errors in proper payment households when the component dollar error results in a tenant payment error of \$5 or less. Considering all component errors, not just errors which result in tenant payment error, pensions (21%) and medical allowance (18%) components have the highest rates of error.

Allowances. Elderly/disabled and dependent allowances were examined to determine whether these allowances were being applied correctly.²⁴ 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 2 percent of all households in FY 2010. Four percent of the elderly/disabled households received an incorrect allowance, while no non-elderly/disabled households received an allowance erroneously.

²⁴ 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).

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 3 percent of all households. In less than 1 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 (6%), either a dependent allowance was not given when it should have been or the wrong allowance amount was given. In total, 5 percent of all households had an incorrect allowance in FY 2010.

**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%	-	45%	100%	-	55%
Incorrect Allowance	-	4%	2%	<1%	6%	3%
Correct Allowance	-	96%	53%	-	94%	42%
Total	100%	100%	100%	100%	100%	100%

Source: Tables 12a and 12b, Appendix C

D. Errors Detected Using Information Obtained from Project Files

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

The outcome is that relying solely on information in tenant files may result in misstating the basis for the program sponsor income and rent determination and could lead to a determination that an error existed when the determination was actually correct. The fact remains that, even if a program sponsor made the correct income determination, failure to document the determination 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 with 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 ICF Macro through third-party sources). Exhibit IV-16 shows the percent of households in error and the average dollar error based on the tenant file and without income and expense items identified during the household interview and verified by ICF Macro through third-party sources.

The data indicate that the income and expense items documented in the tenant file identify about half of the cases with tenant underpayments (subsidy overpayments) and over 60 percent of subsidy underpayments (tenant overpayments). The data regarding average dollar error indicate that using the tenant file information alone does not identify all the error in the rent calculation. Average dollar error resulting in subsidy underpayment (tenant overpayment) was much higher (\$72) when based on tenant file data alone compared to subsidy underpayment average dollar error using all study sources (\$33). The difference in the subsidy overpayment, \$49 compared to subsidy underpayment, \$72 when basing rent amount on file documentation only is pronounced and may indicate that PHA's are not researching all factors that may reduce tenant payment.

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 <i>All</i> Income and Expense Items Identified During the Study	16%	18%	\$47	\$33
Error Based on Tenant File <i>Without</i> Income and Expense Items Identified During the Household Interview and Verification Obtained by the Contractor Through Third-party Sources	8%	11%	\$49	\$72

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 a 50058/50059 Form that contained calculation errors by the rent component contributing to the error. The items considered when determining calculation error, are listed in Appendix D.

Consistency errors were based on the logical conformity of elements in the 50058/50059 Form. For example, the effective date of action must be on or after the date of admission, elderly status information should be consistent with household head and spouse ages, and number of dependents should not exceed the number of household members. Table C-14 in Appendix C shows the number of households with consistency errors on the 50058/50059 Form, summarized by form subsections. Appendix D lists the data items by subsection that were included in this analysis.

Exhibit IV-17 shows the percentage of households with calculation and consistency errors by 50058/50059 Form subsections. It is important to emphasize that the 50058 Form is formatted differently and has more line items of information than the 50059 Form. Consequently, the number and types of calculation and consistency errors on the forms differ, and *findings from the two forms are not directly comparable*. In addition, the Office of Housing implemented a new version of the 50059 Form in FY 2006 and again in FY 2009. 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 Form Item	Percentage of Households					
	Calculation Errors			Consistency Errors		
	50058 Form	50059 Form	Total	50058 Form	50059 Form	Total
General Information	n/a	n/a	n/a	1%	10%	4%
Household Composition	5%	3%	5%	5%	10%	7%
Net Family Assets and Income	4%	3%	4%	3%	<1%	2%
Allowances and Adjusted Income	43%	3%	30%	8%	<1%	6%
Family Rent and Subsidy Information	10%	4%	8%	2%	<1%	1%

Source: Tables 13 and 14, Appendix C

Comparison of 50058/50059 Form 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 2010, a small increase from the FY 2009 figure of 5 percent. The QC error calculation found errors in 33 percent of the households in FY 2010, down from 37 percent in FY 2009. The results are quite different from the individual and joint comparison methods. Error was found in both the 50058/50059 Form calculation and QC rent calculation in only 3 percent of the households. In 39 percent of the households, rent calculation error was found in either the 50058/50059 Form or the QC rent calculation, but not in both. This emphasizes that data from the 50058/50059 Form alone cannot accurately identify rent error. Exhibit IV-18 summarizes these results for FY 2009 and FY 2010.

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

Rent Calculation	Percentage of Households Correct		Percentage of Households Incorrect	
	2009	2010	2009	2010
Using Information on the 50058/50059 Form	95%	94%	5%	6%
According to the QC Rent Calculation	63%	67%	37%	33%
Both 50058/50059 Form Calculation and QC Rent Calculation	60%	64%	2%	3%

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

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 correctly 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.

The table series C-15a through C-15l in Appendix C shows the number of households with and without verification by type of verification (i.e., third-party in writing, third-party in verbal, EIV, and documentation). These tables provide this information for each of the rent components and also by program type.

Exhibit IV-19 summarizes the findings in Table C-15a. In FY 2010, the number of households where verification was not obtained by the PHA/owner decreased or remained unchanged in all rent components. Public assistance showed the largest change in lack of verification (26 percent lacked verification in FY 2009 compared with 18 percent in FY 2010). Percentage of verifications found to match the 50058/50059 within \$100 increased for five of the seven rent components in FY 2010.

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

Rent Component	No Project Verification		Item Verified by Project		Verification Matched 50058/50059 Form Within \$100	
	2009	2010	2009	2010	2009	2010
Earned Income	14%	11%	86%	89%	58%	62%
Pensions	5%	4%	95%	96%	84%	87%
Public Assistance	26%	18%	74%	82%	60%	73%
Other Income	22%	22%	78%	78%	65%	63%
Asset Income	11%	8%	89%	92%	81%	88%
Child Care Expense	8%	8%	92%	92%	77%	73%
Medical Expense	8%	7%	92%	93%	76%	77%

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 2010 results to the FY 2009 findings, the following changes are of note:

- In the *Public Housing* program, there were decreases in the verification rate for two out of the seven rent components in FY 2010 when compared with FY 2009 with the largest loss occurring in medical expense verification (93 percent in FY 2009 compared with 88 percent in FY 2010). A verification rate decrease was also seen in earned income (from 90 percent in FY 2009 to 87 percent in FY 2010). There was an increase in the percentage of verification rates in public assistance income, asset income, pensions, other income and child care expenses with the largest increase occurring in public assistance verification (from 72 percent in FY 2009 to 87 percent in FY 2010). The

degree to which the verifications matched the 50058 Form within \$100 (indicating correct usage of verification data) increased moderately for five of the seven rent components from FY 2009 to FY 2010 with the largest increase in public assistance income from a 60 percent match to a 76 percent match.

- In the *PHA-administered Section 8* programs, there was a general trend to verify information more from FY 2009 to FY 2010. The largest increases were for public assistance income (from 74 percent in FY 2009 to 85 percent in FY 2010) and for asset income (from 84 percent in FY 2009 to 91 percent in FY 2010). The degree to which the verifications matched the 50058 Form within \$100 (indicating correct usage of verification data) increased between a range of 1 to 10 percent for all rent components from FY 2009 to FY 2010, except for child care expense with a 5 percent drop in verifications which matched the 50058.
- In the *owner-administered* programs, verification rate for most of the rent components decreased or remained unchanged. The largest decrease in verification rates occurred in the public assistance component (78 percent in FY 2009 compared with 68 percent in FY 2010). The degree to which the verification matched the 50058 Form within \$100 (indicating correct usage of verification data) decreased for all components, except asset income (4 percent increase). The greatest decreases in verification use occurred in child care expense with a 13 percent decrease in verifications matching the 50059 between FY 2009 to FY 2010 followed by public assistance with 12 percent fewer verifications matching.

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

Rent Component	Public Housing		PHA-Administered Section 8		Owner-Administered	
	Verified	Matched**	Verified	Matched**	Verified	Matched**
Earned Income	87% (90%)	53% (54%)	91% (91%)	63% (57%)	86% (92%)	71% (73%)
Pensions	97% (96%)	87% (80%)	95% (94%)	88% (83%)	96% (96%)	87% (87%)
Public Assistance	87% (72%)	76% (60%)	85% (74%)	77% (56%)	68% (78%)	60% (72%)
Other Income	77% (75%)	61% (61%)	82% (80%)	66% (65%)	69% (76%)	58% (67%)
Asset Income	87% (83%)	85% (77%)	91% (84%)	85% (75%)	95% (95%)	90% (86%)
Child Care Expense	87% (85%)	69% (63%)	93% (91%)	71% (76%)	95% (100%)	82% (95%)
Medical Expense	88% (93%)	67% (72%)	92% (92%)	77% (68%)	96% (91%)	80% (81%)

Source: Table 15g, Appendix C

* Findings from FY 2009 are in parentheses.

** Matched within \$100

Comparing across program types in FY 2010, pension income, medical expense and child care expense are the most frequently verified rent components. The least verified rent components are public assistance and other income.

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. This was observed for every rent component for both the PHA and owner-administered programs.

In general between FY 2009 and FY 2010, data from both the PHA and owner-administered programs show there were both increases and decreases in households where error was related to missing verification. For PHA-administered cases, earned income and public assistance rent components showed the largest increases in missing verifications between FY 2009 to FY 2010 (increases of 10 percent and 8 percent respectively). In owner-administered households, there are relatively minor decreases in FY 2010 for most rent components with QC error. Missing verification in owner-administered programs continues to be strongly associated with households which have QC error.

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

Rent Component	50058 Form				50059 Form			
	Households with QC Error		Households with QC Errors and Missing Verification		Households with QC Error		Households with QC Errors and Missing Verification	
	2009	2010	2009	2010	2009	2010	2009	2010
Earned Income	15%	14%	63%	73%	7%	6%	67%	70%
Pensions	14%	10%	81%	84%	19%	13%	82%	86%
Public Assistance	4%	3%	72%	80%	1%	3%	91%	87%
Other Income	7%	9%	72%	70%	5%	4%	83%	78%
Asset Income	4%	4%	88%	79%	7%	6%	71%	73%
Child Care Expense	3%	2%	80%	70%	1%	<1%	86%	86%
Disability Expense	<1%	<1%	100%	100%	<1%	<1%	100%	100%
Medical Expense	11%	11%	87%	93%	18%	15%	91%	89%
No Component Error	64%	67%	-	-	65%	72%	-	-

Source: Tables 16a and 16b, Appendix C

Summary of 50058/50059 Form Errors. Exhibit IV-22 provides a summary of the errors identified from the 50058/50059 Form. These include consistency errors, calculation errors, and overdue recertifications. The exhibit shows the percentage of households in error, the average dollar error, and the standard errors for both households with recalculated 50058/50059 Form error (error determined using only the 50058/50059 Form), and households with QC Rent error. This information is provided for households with error for each error type. Beginning with the FY 2005 study, transcription error for any household was added to this exhibit and the data that was described as an unduplicated count of 50058/50059 Form error has been revised to an unduplicated count of any type of administrative error. The exhibit shows that 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 65 percent of households and any type of administrative error (transcription, consistency, calculation, or overdue recertifications) are associated with QC Rent Error in 73 percent of the households.

When compared to FY 2009, there are only minor differences in percent of households in error for both recalculated 50058/50059 Forms and for households with QC rent error. However, there are some large decreases in average dollar error for recalculated 50058/50059 Forms pertaining to Other Calculation Error, \$120 in FY 2009 compared to \$53 in FY 2010, Allowance Calculation Error, \$76 in FY 2009 and \$47 in FY 2010 and Income Calculation Error, \$57 in FY 2009 and \$38 in FY 2010.

In addition, the average dollar error for households with recalculated 50058/50059 Form error is \$23. In contrast the average dollar error for households with QC Rent error is \$39. The values support the assertion that an administrative error on a 50058 or a 50059 Form is not necessarily associated with a QC Rent error.

To understand the reason for the change in the average dollar error for households with recalculated 50058/50059 Form 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 Other Calculation Error is \$53, 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 Other Calculation Error is small (10 percent of households in error), the average dollar error is large.

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

Error Type Based on 50058/50059 Form Recalculation	Households with Recalculated 50058/9 Form 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	49%	4.2%	\$31	\$14.88	65%	2.6%	\$41	\$4.60
Households with Consistency Error	29%	8.0%	\$55	\$33.22	22%	1.9%	\$35	\$3.72
Households with Allowance Calculation Error	7%	3.3%	\$47	\$28.90	4%	0.8%	\$48	\$9.50
Households with Income Calculation Error	6%	1.9%	\$38	\$24.99	3%	0.5%	\$64	\$23.39
Households with Other Calculation Error	10%	4.4%	\$53	\$15.62	6%	1.1%	\$66	\$16.45
Overdue Recertifications	3%	1.7%	\$33	\$20.97	2%	0.7%	\$122	\$36.60
Unduplicated Count, Any Type of Administrative Error	61%	5.8%	\$31	\$16.79	73%	2.2%	\$40	\$4.08
Total Households			\$23	\$10.84			\$39	\$3.30

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 Form error. Percent of households in error were generally comparable to FY 2009 for all error types, as were the average gross and net dollars in error for all error types except overdue recertifications which had large differences in error amounts due to the small number of overdue cases.

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	38%	\$23	\$2.80	-\$2	\$1.58
Consistency Errors	18%	\$14	\$1.98	-\$1	\$1.94
Calculation Errors—Allowances	3%	\$27	\$7.30	\$5	\$7.11
Calculation Errors—Income	2%	\$31	\$10.77	\$4	\$12.73
Calculation Errors—Other	5%	\$29	\$9.45	-\$2	\$8.48
Overdue Recertifications	1%	\$83	\$33.62	\$9	\$22.23
Any Administrative Errors	50%	\$20	\$2.20	-\$2	\$1.24
Total	100%	\$13	\$1.35	-\$1	\$0.73

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. For example, the Section 8 Voucher program sometimes allows households to rent units with fewer or more bedrooms than specified by the guidelines.

Fifteen percent of all households occupied a unit with too many or too few bedrooms in FY 2010, according to the guidelines used for this study. This number is up slightly from FY 2009, when 14 percent of all households occupied a unit with an incorrect number of bedrooms. Fourteen percent of Public Housing households, 8 percent of owner-administered households, and 20 percent of PHA-administered Section 8 program households were over- or under-housed in FY 2010.

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		Section 8		2009	2010	2009	2010
	2009	2010	2009	2010				
0	98%	100%	100%	81%	96%	100%	98%	96%
1	99%	99%	100%	98%	100%	100%	100%	99%
2	73%	78%	74%	72%	84%	77%	76%	74%
3	80%	82%	80%	82%	85%	87%	81%	83%
4	70%	60%	51%	61%	48%	71%	55%	63%
5+	34%	-	54%	52%	-	-	42%	33%
All Units	85%	86%	81%	80%	94%	92%	86%	85%

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 2009 and FY 2010, respectively. The shaded cells indicate the percentage of households that fall within study guidelines.

Exhibit IV-24a
Percentage of All Households in FY 2009 by Number
of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2009							
	Number of Household Members							
	1	2	3	4	5	6	7	8+
0	98%	1%	<1%	-	-	-	-	-
1	91%	8%	<1%	<1%	-	-	-	-
2	23%	52%	18%	6%	<1%	<1%	-	-
3	5%	12%	34%	30%	13%	4%	2%	<1%
4	1%	4%	14%	24%	23%	21%	10%	3%
5		20%	9%		17%		21%	33%

Source: Table 19a, Appendix C

Exhibit IV-24b
Percentage of All Households in FY 2010 by Number
of Bedrooms and Number of Household Members

Number of Bedrooms	FY 2010							
	Number of Household Members							
	1	2	3	4	5	6	7	8+
0	96%	2%	2%	-	-	-	-	-
1	93%	7%	<1%	<1%	<1%	-	-	-
2	24%	46%	22%	7%	1%	<1%	-	-
3	5%	11%	38%	28%	13%	5%	<1%	<1%
4	1%	3%	11%	22%	26%	19%	14%	4%
5			7%	29%	8%	23%	15%	18%

Source: Table 19a, Appendix C

F. Rent Reasonableness

The PHA-administered Section 8 program 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 PHA-administered Section 8 program 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. Rent approvals which are set too low compared to the private market lead landlords to include only lowest cost, lowest quality units and may inappropriately restrict where assisted tenants may live. 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. The PHAs, administering the 142 Section 8 Voucher “projects”²⁵ participating in the study, were asked about their standard rent reasonableness processes and provided copies of the forms which documented rent reasonableness.

Field interviewers were instructed to search the tenant files for each of the 800 Voucher households in the tenant sample to locate the documents supporting the rent reasonableness certification. For the 87 new certifications²⁶ field interviewers searched the file for the initial rent reasonableness certification and recorded its date. For the 713 annual recertifications, field interviewers were asked to ascertain when the current rent to owner became effective, and to locate the relevant supporting rent reasonableness documentation. If none was found relative to date the rent to owner became effective, field interviewers were asked to search for any rent reasonableness certification in the file and enter the date of certification. The owner’s rent certification on the Request for Tenancy Approval (RFTA) form was considered a rent reasonableness certificate.

Findings Pertaining to Rent Reasonableness Methods Used by PHAs. The most common method of determining rent reasonableness is the unit-to-unit comparison (see Exhibit IV-25). Sixty-nine percent of the housing authorities reported using this method as the predominant method. 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.

²⁵ 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.”

²⁶ Beginning in FY 2007, portability move-ins were classified as annual recertifications. In FY 2006 they were categorized as new admissions.

Exhibit IV-25
PHAs by Predominant Rent Reasonableness Method

Method	2008 Number	2008 Percent	2009 Number	2009 Percent	2010 Number	2010 Percent
Unit-to-Unit Comparison	88	62%	88	63%	104	69%
Unit-to-Market Comparison	14	10%	25	17%	19	13%
Point System	22	15%	23	16%	20	13%
Other or Rent Control	6	4%	2	4%	1	1%
No Single Predominant Method	13	9%	1	1%	7	5%
No information	0	0%	0	0%	0	0%
Total	143	100%	139	100%*	151	100%*

Data in this exhibit are weighted

*Totals may not add up to 100% due to rounding

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. Thirteen percent of housing authorities reported using this method primarily. Valuation adjustments are based on typical units in the private market. Thirteen percent of housing authorities indicated that their primary method of making rent reasonableness determinations was based on a point system. Using this system, units are assigned points based on their condition and attributes and comparisons are made to unassisted units.

In FY 2009, the rent reasonableness methodology question was changed. Staff were asked to identify only the primary method used to determine whether rents to owners were comparable to the private market, rather than enter a percentage use of various methods. Results remain consistent with FY 2008 as evidenced in Exhibit 25a. When asked to identify a single predominant method, most PHA’s selected only one resulting in a significant decrease of “no single method predominates”, from 9 percent in FY 2008 to 1 percent in FY 2009. For FY 2010, more projects, 5 percent, elected to report no single method predominates. PHA’s were also asked whether they used a software program and/or an outside contractor to determine whether the rent to owner was reasonable. Eighty two of the 151 voucher projects (54%) use rent reasonableness software. *Go Section 8* remained the most commonly used software vendor, cited by 18 projects in FY 2010 and by 12 programs in FY 2009, followed by *HAPPY*, used by 12 in FY 2010 and 9 in FY 2009. Fewer PHAs reported using in-house developed software, 8 in FY 2010 compared with 12 in FY 2009.

Findings Pertaining To Rent Reasonableness Documentation Found in Tenant Files for New Admissions and Annual Recertifications. In FY 2010, 94 percent of new admission files contained rent reasonableness documents, compared to 88 percent in both FY 2009 and FY 2008 (see Exhibit IV-26a). 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 specific to that determination and if none was found, the file was searched for any rent reasonableness documentation. In FY 2010, 73 percent of these case files had certified rent reasonableness documents compared to 77 percent in FY 2009 (see Exhibit IV-26a).

Exhibit IV-26a
Rent Reasonableness Documentation for New Admissions and Annual Recertifications

Status	2008 New Admissions	2008 Recertifications	2009 New Admissions	2009 Recertifications	2010 New Admissions	2010 Recertifications
Determination Documented	88%	78%	88%	77%	94%	73%
No Determination Documented	12%	22%	12%	23%	6%	27%
Total	100%	100%	100%	100%	100%	100%

Data in this exhibit are weighted

The absence of documentation does not necessarily indicate a determination was not completed; only that it was not properly documented. Of New Admission files that had documentation, 69 percent contained a statement signed by the PHA staff certifying that the rent is reasonable. For Recertifications with rent reasonableness documentation, 67 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 and Annual Recertifications

Type	2008 New Admissions	2008 Recertifications	2009 New Admissions	2009 Recertifications	2010 New Admissions	2010 Recertifications
A signed statement certifying that the rent is reasonable	61%	55%	63%	67%	69%	67%
Comparable units documented by the property owner in section 12a of HUD 52517	16%	10%	9%	5%	5%	9%
Comparable units documented on other documents	16%	26%	20%	19%	23%	19%
Any other reference to rent reasonableness	8%	9%	8%	9%	3%	5%
Total	100%	100%	100%	100%	100%	100%

Data in this exhibit are weighted

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. Since the PHA is required to conduct a rent reasonableness assessment when the contract rent is increased by the owner, the current QC contract rent is compared with previous rents to determine when and if there was a change in the contract rent. That is then used to determine whether there was a timely rent reasonableness assignment. Exhibit IV-27 provides a summary of how the date of the rent reasonableness determination relates to the initial lease or lease change 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 and Annual Recertifications

Determination-Certification Chronology	2008 New Admissions	2008 Recertifications	2009 New Admissions	2009 Recertifications	2010 New Admissions	2010 Recertifications
More than 4 months before lease date	<1%	9%	3%	9%	2%	7%
Up to 4 months before lease date	90%	76%	91%	78%	94%	82%
After lease date—up to 2 months	5%	6%	3%	7%	4%	4%
After lease date—greater than 2 months	<1%	7%	2%	5%	0%	5%
Date missing	5%	2%	1%	2%	1%	2%
Total	100%	100%	100%	100%	100%	100%

Data in this exhibit are weighted

If the lease effective date occurred prior to the determination, the rent reasonableness determination may not have been instrumental for the approval of the unit's rent. The percent of rent reasonable determinations made after the rent had been established as part of the initial lease agreement decreased slightly from 5 percent in FY 2009 to 4 percent in FY 2010. For Annual Recertifications in 2010, 9 percent of rent reasonable determinations were made after rents had been established, compared with 12 percent in FY 2009.

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 increased in FY 2009 and FY 2010, the proportion of cases lacking rent reasonableness documentation is still high (6 percent of new admissions and 27 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 2010 HUDQC study, two separate analyses were conducted of the utility allowances provided to households assisted through the PHA-administered Section 8 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 FY 2010. 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-two (142) PHA-administered Section 8 “projects,” administered by 128 housing authorities (several of which administered the voucher program in multiple counties) participated in the FY 2010 HUDQC study. According to information provided at the PHA level, almost half (49%) 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 less than the FY 2009 HUDQC study when more than half (60%) of the projects reported using the HUD Form 52517. Also slightly fewer projects used HUD Form 52667 (Schedule of Allowances for Tenant Furnished Utilities) (62 percent, in FY 2010, compared to 68 percent in FY 2009) to calculate the value of the utilities paid by the tenants. Exhibit IV-28a provides the information on the type of documents used as the official source for identifying utilities for which the households were responsible, and the type of documents used to calculate the value of the utilities paid by the tenants.

Exhibit IV-28a
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 2009		FY 2010		FY 2009		FY 2010	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
HUD Form 52517 (Request for Tenancy Approval)	84	60%	69	49%	9	7%	11	8%
HUD Form 52641 (HAP Contract)	18	13%	21	15%	5	4%	4	3%
HUD Form 52667 (Allowance Schedule)	15	11%	14	10%	94	68%	88	62%
Other (Lease, Reports, Comparisons, etc.)	14	10%	16	11%	27	19%	35	25%
Various combinations of above	8	6%	22	15%	4	3%	4	3%
Total	139	100%	142	100%	139	101%*	142	101%*

Data in this exhibit are not weighted

* Totals may not add up to 100% due to rounding.

Eight hundred (800) 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 731 households (91%). Of the 69 households for whom no utility allowance documents were found in the household file, 24 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). For the remaining 45 households, utility allowance documents were missing.

Comparison of 50058 Form Utility Allowance Values to Worksheets Found in the Household File. For each household with utility allowance documentation available, the utility allowance amount from the 50058 Form was matched with the amount on the utility allowance worksheet obtained from the tenant files. For 93 percent of the households (676 units), the 50058 Form utility allowance amount matched the worksheet amount. This included 53 households that did not have any utility expenses because either they were included in the rent or the owner paid all utilities. For 3 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 4 percent of the households there were discrepancies between the amount on the worksheet and the 50058 Form amount. Exhibit IV-28b provides a summary of the findings from the comparison between the utility allowance listed on the 50058 Form and the amount on the worksheets found in tenant files.

Exhibit IV-28b
Comparison of Utility Allowance on the 50058 Form to the Utility Allowance Worksheet

Outcome	Number	Percent
50058 Form (AC) amount matched with Worksheet (WS) amount	676	93%
Worksheet in file for incorrect period of time or is missing critical information	22	3%
Discrepancy due to math error or other clerical errors	8	1%
Discrepancy—Unable to determine reasons	25	3%
Total	731	100%

Data in this exhibit are not weighted

Comparison of 50058 Form Utility Allowance Values to the Correct (QC) Utility Allowance Value. The QC utility allowance was calculated in 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. We were unable to calculate the QC utility allowance in 2 percent (19 households) of the cases because their worksheet was not available and consequently the specific utilities paid by the household could not be identified. Furthermore, we were unable to calculate the QC utility allowance in less than 1 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 5 percent because the appropriate utility allowance schedule was not available. Exhibit IV-28c differentiates between the cases in which QC allowance amount was able to be calculated and lists the reasons and number of cases in which QC utility allowance amount was not able to be calculated.

Exhibit IV-28c
Availability of All Information to Enable QC Utility Allowance Calculation

Outcome	QC UA amount calculated	Number	Percent
Appropriate worksheet and schedule available	Yes	736	92%
UA worksheet or other comparable document not available	No	19	2%
Appropriate UA schedule not available	No	3	<1%
Worksheet was missing critical information	No	42	5%
Total		800	100%

Data in this exhibit are not weighted

For the 736 cases in which QC utility allowance amounts were calculated, the QC utility allowance was compared to the 50058 Form utility allowance amounts. In 94 percent of those households, the 50058 Form and QC utility allowance values matched. The remaining (discrepant) 6 percent were categorized into two broad categories. Non-matching utility allowances were categorized as either administrative errors or unknown—we were unable to determine the reason for the discrepancy. Exhibit IV-28d presents the findings from this analysis.

Exhibit IV-28d
QC Utility Allowance Compared to 50058 Form Utility Allowance

Outcome	Number	Percent
QC UA matched amount on 50058 Form	693	94%
Discrepancy due to math error/transfer error	14	2%
Discrepancy—unable to determine reasons	29	4%
Total	736	100%

Data in this exhibit are not weighted

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

Alternative Methodology Scenario: Impact of Using the Correct Utility Allowance on Case Error and Gross Dollar Error. In FY 2010, an analysis was performed to determine the effect of using the correct (QC) Utility Allowance on the case error rate and the gross dollar error. The current study methodology uses the 50058 (AC) Utility Allowance when calculating the correct (QC) rent. Exhibit IV-28e shows the case error and gross dollar error using the correct (QC) Utility Allowance when compared to using the actual (AC) Utility Allowance. Case error rates for proper payments decrease by about 1 percent, while the gross rent dollar error increases about \$1,478 thousand per month.

Exhibit IV-28e
Impact of Using the Correct Utility Allowance on Case Error Rate and Gross Dollar Error

Methodology	Case Error Rate		
	Underpayments	Overpayments	Proper Payments
Study Methodology: Using 50058 (AC) Utility Allowance	15.5%	17.7%	66.8%
Alternative Methodology: Using Correct (QC) Utility Allowance to Calculate Correct (QC) Rent	16.0%	18.3%	65.7%
Methodology	Gross Rent Dollar Error (Monthly)		
	Underpayments (in 1,000s)	Overpayments (in 1,000s)	Monthly Amount (in 1,000s)
Study Methodology: Using 50058 (AC) Utility Allowance	\$30,197	\$23,991	\$54,189
Alternative Methodology: Using Correct (QC) Utility Allowance to Calculate Correct (QC) Rent	\$30,780	\$24,887	\$55,667

Data in this exhibit are weighted

H. Payment Standard Analysis

As part of the FY 2010 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 three 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. And third, the Payment Standards were compared to the Fair Market Rents to ensure they were between 90 percent and 110 percent for each project. The findings from these 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 percent 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, 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 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 these 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 ICF 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 800 Housing Choice Voucher households in the study. For the majority (89%) of the households, the AC Payment Standard matched the QC Payment Standard. There were 88 households (11%) with discrepant Payment Standards. Forty-six (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. Discrepancies were attributable to one of seven common reasons, as listed in Exhibit IV-29a. The most typical reason for a discrepancy between the AC and QC

Payment Standard was that the project staff used the incorrect Payment Standard. Also, the use of either the incorrect number of bedrooms or household members accounted for a cumulative 17 percent of the discrepancies found. Exhibit IV-29a summarizes the number and percent of households where the QC and AC Payment Standard did not match by reason.

**Exhibit IV-29a
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	7	8	17%
Incorrect Payment Standard Schedule Was Used	16	16	36%
Fair Market Rent Was Used Instead of the Payment Standard	1	1	2%
Gross Rent was Used Instead of the Payment Standard	6	1	8%
Project Staff Used Enhanced Rate for Disabled/Elderly Tenant	1	2	3.5%
Project Staff Made a Typo	2	1	3.5%
Project Based Voucher & Pre-Merger Certificate: No PS (Section 11 of the 50058 Filled Out)	2	3	6%
Enhanced Voucher	5	4	10%
Other Reasons—Overdue Recertification, Software Limitations, Original Payment Standard Over 110%	6	6	14%
Total	46	42	100%

Data provided in this exhibit 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. Correct Payment Standards could not be determined for 14 households. The Payment Standard for 738 of the remaining households (94%) fell within the 90 percent to 110 percent FMR band; 32 of the households (4%) that fell outside of the 90 percent to 110 percent band used an amount that exceed 110 percent of the FMR, and 16 of the households (2%) used an amount that was less than 90 percent of the FMR. Exhibit IV-29b summarizes the number and percent of households by the relationship of the Payment Standard to the acceptable FMR.

**Exhibit IV-29b
Number of Households Meeting Payment Standard Requirements**

Characteristic	Fair Market Rent			Percent of Cases Outside the 90 to 110% Band
	Under 90%	90–110%	Over 110%	
Non-Elderly or Disabled	7	382	16	3%
Elderly or Disabled	9	356	16	3%
Payment Standard Compared with Fair Market Rent	16	738	32	6%

Data provided in this exhibit are not weighted.

The analysis of the households that fell outside the 90 percent to 110 percent FMR band indicated that 6 percent of households fell outside of the 90 percent to 100 percent band of the FMR for seven general reasons: the incorrect number of bedrooms was used, the incorrect Payment Standard was used, Fair Market Rent or Gross Rent was used instead of Payment Standard, project staff used the Enhanced Rate for Disabled/Elderly tenants, and other reasons. Exhibit IV-29c summarizes the number and percent of households that fall outside the 90 percent to 110 percent FMR band by category.

Exhibit IV-29c
Details of Cases Falling Outside 90-110 Percent of the Fair Market Rent

Reason	Fair Market Rent		Percent of Cases Outside the 90 to 110% Band
	Under 90%	Over 110%	
Incorrect Number of Bedrooms/Household Member was Used	4	7	23%
Incorrect Payment Standard was Used	5	1	13%
Fair Market Rent was Used Instead of the Payment Standard	0	1	2%
Gross Rent was Used Instead of the Payment Standard	2	2	8%
Project Staff Used Enhanced Rate for Disabled/Elderly Tenant	0	2	4%
Enhanced Voucher	3	5	17%
Other Reasons—Overdue Recertification, 105% of FMR Used, Software Limitations, Original Payment Standard Over 110%	2	14	33%
Total	16	32	100%

Data provided in this exhibit are not weighted.

Comparison of the Payment Standard for each project to the Fair Market Rent for the Appropriate Geographic Area to ensure that it is within 90 percent to 110 percent of the Fair Market Rent. The third analysis consisted of looking at the Payment Standards that were applicable for each project and determining whether or not they were within 90 percent to 110 percent of the Fair Market Rents for that specific area. The rates were compared for 142 Housing Choice Voucher Projects. Out of those, 137 Projects (97%) used Payment Standards that were within 90 percent to 110 percent of the Fair Market Rents for their areas. Five projects from five different PHAs were outside of these limits. Two of the projects were approved to used rates that were over 110 percent. Of the other 3 projects, one used a rate of 89 percent for all of their units; one used a rate of 83.9 percent for only their 0 bedroom units and the last one used 111 percent for their 2 bedroom units. Approvals were not found for these 3 projects. Exhibit IV-29d summarizes the results of the Projects that fell outside of the 90 percent to 110 percent range.

Exhibit IV-29d
Details of Projects Falling Outside 90-110 Percent of the Fair Market Rent

Characteristics	Number	Percent
Projects using less than 90% of the Fair Market Rent for their Payment Standard (no approval document found)	2	1%
Projects using more than 110% of the Fair Market Rent for their Payment Standard (no approval document found)	1	1%
Projects using more than 110% of the Fair Market Rent for their Payment Standard (approval document found)	2	1%
Projects using between 90% to 100% correctly	137	97%
Total	142	100%

Data provided in this exhibit are not weighted.

Comparison of the FY 2009 to the FY 2010 Payment Standard Analysis Results. The same Payment Standard Analysis was conducted for the FY 2009 study. Of the 788 Housing Choice Voucher households in the FY 2009 study, the AC and the QC Payment Standard matched for 704 (89%) of the households. Additionally, 28 (4%) of the households had Payment Standards that did not fall within the 90 to 110 percent FMR band. Of those 28 households, no cases were granted any exemptions. Therefore, a total of 4 percent of the Housing Choice Voucher households included in the FY 2009 did not meet HUD's Payment Standard requirements.

Of the 800 Housing Choice Voucher households in the FY 2010 study, the AC and the QC Payment Standard matched for 712 (89%) households. Additionally, 48 (6%) households had Payment Standards that did not fall within the 90 percent to 110 percent FMR band. Of those 48 households, seven households in two projects were granted exceptions. Therefore, a total of 5 percent of the PHA-administered Section 8 households included in the FY 2010 study that did not meet HUD's Payment Standard requirements and were not in a project that had been granted an exception. Exhibit IV-29e summarizes the results from the FY 2009 and FY 2010 Payment Standard Analysis.

Exhibit IV-29e
Comparison of the FY 2009 to FY 2010 Payment Standard Analysis

Characteristic	FY 2009		FY 2010	
	Number	Percent	Number	Percent
Housing Choice Voucher Sample	788	100%	800	100%
Households Where the AC and QC Payment Standard Did Not Match	84	11%	88	11%
Households Where the AC Payment Standard Did Not Meet the 90% to 110% of FMR Threshold	28	4%	48	6%
Households That Were Not Exempt from the 90% to 110% of FMR Threshold and Did Not Meet HUD's Payment Standard Requirements	28	4%	41	5%

Data provided in this exhibit are not weighted.

Alternative Methodology Scenario: Impact of Using the Correct Payment Standard on Case Error and Gross Dollar Error. In FY 2010, an analysis was performed to determine the effect of using the correct (QC) Payment Standard on the case error rate and the gross dollar error. The current study methodology uses the 50058 (AC) Payment Standard when calculating

the correct (QC) rent. Exhibit IV-29f shows the case error and gross dollar error using the correct (QC) Payment Standard when compared to using the actual (AC) Payment Standard. Case error rates for proper payments remained the same. However, the gross rent dollar error increases about \$4,091 thousand per month. This is mainly due to overpayments remaining the same, while underpayments increased.

Exhibit IV-29f
Impact of Using the Correct Payment Standard on Case Error Rate and Gross Dollar Error

Methodology	Case Error Rate		
	Underpayments	Overpayments	Proper Payments
Study Methodology: Using 50058 (AC) Payment Standard	15.5%	17.7%	66.8%
Alternative Methodology: Using Correct (QC) Payment Standard to Calculate Correct (QC) Rent	15.5%	17.7%	66.8%
Methodology	Gross Rent Dollar Error (Monthly)		
	Underpayments (in 1,000s)	Overpayments (in 1,000s)	Monthly Amount (in 1,000s)
Study Methodology: Using 50058 (AC) Payment Standard	\$30,197	\$23,991	\$54,189
Alternative Methodology: Using Correct (QC) Payment Standard to Calculate Correct (QC) Rent	\$34,280	\$23,991	\$58,280

Data provided in this exhibit are 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 the Federal FY 2010, an attempt was made to use historical PIC/TRACS files to identify the 50058/50059 Form 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 1,718 of the 2,404 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 weighted of the households in PHA-administered projects; TRACS records were found for 98 percent weighted of the households in owner-administered projects. Of the 2,404 households sampled, 2,340 households (or 97 percent weighted) successfully matched with 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-30a 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-30b 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.

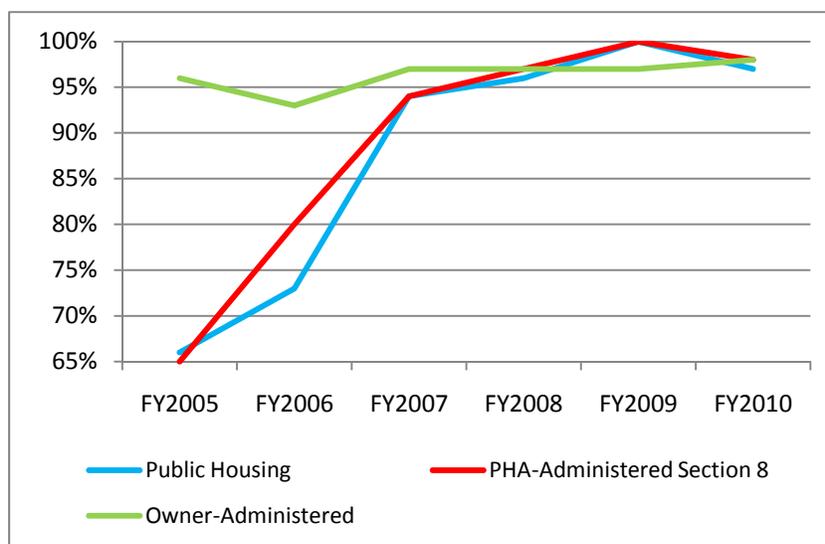
Exhibit IV-30a
PIC/TRACS Data by Program Type and Average Gross Dollars in Error for all Households

Administration Type	PIC/TRACS Present		PIC/TRACS Absent	
	Percent of Households	Average Dollars in Error	Percent of Households	Average Dollars in Error
Public Housing	97%	\$12	4%	\$22
PHA-Administered Section 8	98%	\$15	2%	\$26
<i>Total PHA-Administered</i>	97%	\$14	3%	\$24
Total Owner-Administered	98%	\$11	2%	\$9
Total	98%	\$13	3%	\$20

Data provided in this exhibit are weighted.

Figure IV-3 tracks the percentage of households where PIC/TRACS is present over time, beginning in FY 2005. PHA-administered percentages have increased since FY 2005, while owner-administered percentages have remained fairly steady over time.

Figure IV-3
PIC/TRACS Data Present by Program Type for All Households Over Time



As presented in Exhibit IV-30b, the average dollars in error for owner-administered households in error, is higher for households when PIC/TRACS data is absent (\$53) than when PIC/TRACS data is present (\$39). However, because the number of cases absent from PIC/TRACS is relatively low, these estimates are less reliable and more volatile from year to year. This year, the percentage of PHA-Administered projects with PIC/TRACS present for households in error decreased from 100 percent in FY 2009 to 97 percent in FY 2010. However, this is still on par with FY 2008 which was at 97 percent. Owner-Administered projects increased slightly to 98 percent.

Exhibit IV-30b
PIC/TRACS Data by Program Type and Average Gross Dollars in Error for Households in Error

Administration Type	PIC/TRACS Present		PIC/TRACS Absent	
	Percent of Households	Average Dollars in Error	Percent of Households	Average Dollars in Error
Public Housing	96%	\$41	4%	\$64
PHA-Administered Section 8	97%	\$40	3%	\$55
<i>Total PHA-Administered</i>	97%	\$40	3%	\$58
Total Owner-Administered	98%	\$37	2%	\$33
Total	97%	\$39	3%	\$53

Data provided in this exhibit are weighted

*Totals may not add up to 100% due to rounding.

Exhibit IV-30c presents the percentage of households and average dollars in error for households matched/not-matched with PIC/TRACS by payment type. Although the percentage of underpayment, overpayment and proper payment are similar for both groups, note the large difference in underpayment amounts (\$53 compared to \$124).

Exhibit IV-30c
Average Gross Dollars in Error by Payment Type and PIC/TRACS Data

Payment Type	PIC/TRACS Present		PIC/TRACS Absent	
	Percent of Households	Average Dollars in Error ¹	Percent of Households	Average Dollars in Error ¹
Underpayment	16%	\$46	15%	\$80
Overpayment	18%	\$33	22%	\$34
Proper Payment	67%	n/a	63%	n/a
Total	100%	\$13	100%	\$20

Data provided in this exhibit are weighted

¹ Average dollar error per under- and overpayment subgroups.

Exhibit IV-30d 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-30d
Average Net and Gross Dollars in Error by Administration Type and PIC/TRACS Data for all Households

Administration Type	Average Net Rent Error		Average Gross Rent Error	
	PIC/TRACS Present	PIC/TRACS Absent	PIC/TRACS Present	PIC/TRACS Absent
Public Housing	-\$2	\$7	\$12	\$22
PHA-Administered Section 8	<-\$1	-\$18	\$15	\$26
<i>Total PHA-Administered</i>	-\$1	-\$7	\$14	\$24
Total Owner-Administered	-\$2	<-\$1	\$11	\$9
Total	-\$1	-\$5	\$13	\$20

Data provided in this exhibit are weighted

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-30e provides the percentage of households where the data gathered through the QC process matched that in PIC/TRACS.

Exhibit IV-30e
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	1.6%	1.9%	2.1%	3.1%	1.8%	10.1%	12.9%	30.1%
Match	98.4%	98.1%	97.9%	96.9%	98.2%	89.9%	87.1%	69.9%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Data provided in this exhibit are weighted

J. Project Staff Questionnaire Analysis

The purpose of the Project Staff Questionnaire (PSQ) is 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 2010 study were surveyed, using a self-administered, paper questionnaire. The PSQ collected information on topics related to PHA/project staffing, (re)certification process, verification process, use of automated systems and quality control procedures. 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.

- *PHA/Project Staffing Topics.* This section included the number and types of staff, staff caseload, staff turnover, minimum education, training and experience requirements for new staff, and staff development and training.
 - Overall, the average PHA/project had about 13 employees, including full-time, part-time, and contractual staff. On average, 247 cases were assigned to each (re)certification staff member across all three program types over a 12-month period.
 - The percentage of PHA/projects who assigned new staff was about 41 percent in FY 2010, and the average number of new staff who were assigned to conduct (re)certifications of projects who assigned new staff overall was about 3 staff per PHA/project. The average number of experienced staff assigned to conduct (re)certifications was about 5 staff per PHA/project.
 - In FY 2010, about 34 percent of all PHA/projects in the study had at least one staff member leave in the past 12 months. On average, PHA/projects had staff turnover had 2.4 (re)certification staff leave the PHA/project in the past 12 months. The most common reason for staff turnover was resignation due to better opportunity, career

- change or relocation (35%). Twenty three percent of the PHA/projects reported they had staff turnover due to work performance related termination.
- The minimum education requirements for employees working with (re)certifications remained little changed from the previous year, with a majority of PHA/projects at 66 percent requiring a High School Diploma or equivalent when hiring new staff who will be working with (re)certifications. Overall, only about 4 percent of PHA/projects did not require some education, down from 5 percent in FY 2009.
 - Other requirements for new (re)certification staff included background checks, housing related training and skills and other basic skills. Seventy six percent of PHA/projects indicated they required background checks for applicants and 60 percent indicated they required some housing related experience.
 - The PSQ also collected information about the amount and type of training provided to new and experienced staff. The average number of hours of training received by each newly hired (re)certification staff was relatively the same at about 101 hours compared to 98 hours in FY 2009. They trained their re-assigned staff and their experienced staff about the same at 69 hours, on average. The most common skill or training PHA/project staff thought was most important was that their staff needed to be able to understand and use EIV (71%), followed by the need to understand general HUD and PHA policies (49%).
- *(Re)certification Process.* The PSQ collected information on an array of topics regarding the (re)certification process. It included items on: the amount of time allowed for the (re)certification process, methods used to conduct the (re)certification process, tools used in the (re)certification process, methods used to (re)certify households with non-English speaking tenants, procedural differences in processing households with stable vs. volatile incomes.
 - Owner-Administered projects were predominantly likely to mail letters to tenants more than 90 days prior to the next effective date and were in general more likely to start interviewing the household sooner than Public Housing and PHA-administered Section 8 projects.
 - The most common method of obtaining household information was by conducting an in-person interview during both initial certification process and annual recertification process (98 percent and 95 percent, respectively). PHA/projects were more likely to have the tenants fill out a form and return it to PHA/project via mail or in-person to obtain household information during annual (re)certifications than during new certifications.
 - About 85 percent of PHA/projects used a formal guide or set of questions to conduct the (re)certification interviews. Owner-administered projects were most likely to use a formal guide at 91 percent, whereas PHA-administered projects were least likely to use a formal guide at 78 percent.
 - Over 64 percent of PHA/projects had tenants who speak a language other than English as their primary language. Of the projects that had non-English speaking tenants, on average, about 24 percent of tenants speak a language other than English as their primary language.

- When PHA/projects were asked whether procedures were the same for houses with stable income compared to those with volatile income such as income from seasonal employment or sporadic income, overall 92 percent said they were the same, compared to 91 percent in FY 2009, and 93 percent in FY 2008.
- *Verification Process.* The PSQ collected information on various topics regarding the verification process including: frequency of verification of household member characteristics, income and expenses, problems in obtaining complete verification, cooperativeness of various institutions to verify tenant information, and measures taken to obtain outstanding verification requests
 - Over 96 percent of the PHA/projects indicated that they verify all income items such as employment income, income from assets, etc, during both move-in and annual (re)certifications. Over 94 percent of the PHA/projects indicated that they verify all expenses items such as medical expenses, childcare expenses, etc, during both move-in and annual (re)certifications. Less than 60 percent of the PHA/projects indicated that they verify static information such as date of birth, social security numbers, and citizenship information during both move-in and annual (re)certifications. PHA/projects who did not indicate they verify date of birth, social security numbers, and citizenship information during both certifications indicated they verify those items only during move-in certifications.
 - PHA/projects were asked about causes of problems in obtaining complete verifications. The most prevalent issue, cited by 52 percent of the PHA/projects was employers not responding to requests in a timely manner. With respect to the level of cooperation of various types of institutions when verifying tenant information, the same institutions have been the least cooperative since FY 2007. The list of non-cooperative institution includes insurance companies, financial institutions, education institution and health care providers.
 - When problems and difficulties arose in verifying information, most PHA/projects called third-parties to obtain information (94%). PHA/projects also sent follow-up letters to third-parties (92%), used electronic verification or data matching such as EIV (88%), called tenants (85%), and sent follow-up letters to tenants (77%). Use of EIV increased from 83 percent in FY 2009 to 88 percent in FY 2010. On average, 67 percent of PHA/projects reported resorting to accepting other less preferred verification, down from 75 percent in FY 2009, and 73 percent in FY 2008.
- *Use of Automated Systems.* The PSQ collected information on the PHA/projects' use of automated systems. The topics covered were: capabilities of the software that were being used by the PHA/projects and PHA/projects use of computers to assist in the (re)certification process.
 - Automated systems and computer software continues to play 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 (97%). Of those PHA/projects, over 94 percent used computer software to submit data to PIC/TRACS.

- The PHA/projects also indicated how they used the software. The most common use of the software was maintaining demographic information about the residents (98%), followed by calculating rent, income and allowances and printing 50058/50059 forms (97%). Only about 21 percent of the PHA/projects indicated they used a software program for assistance with household interviews.
- *Quality Control Procedures.* The PSQ collected information on the three aspects of quality control procedures: prevalence and causes of errors, measures taken to rectify or prevent errors, characteristics of households that were more likely to have errors, and suggestions on how to overcome errors. Errors include overdue (re)certifications, missing verification documents, mistakes in calculating rent, etc. Measures taken to reduce errors included strategies used to address various causes of errors, methods used to clarify and implement HUD policies, external reviews and monitors, methods used to select cases for review, frequency of review, and tools and techniques used to monitor the (re)certification process.
 - Upon reviewing (re)certifications, 8 percent of the PHA/projects indicated that they frequently found cases with overdue (re)certifications and cases with missing or incomplete verifications of income. Six percent of the PHA/projects indicated they frequently found cases with missing or incomplete verification of expenses. In the past few years, the issue that most frequently caused errors was once again tenants providing inaccurate or incomplete information (37%).
 - Of the PHA/projects who stated they had conducted a review, about 20 percent stated that certain types of tenants were more likely to have errors than other types of tenants. Of the PHA/projects that responded, 86 provided characteristics of households that were more likely to have errors. Fifty two percent of these PHA/projects indicated that households with multiple incomes were more likely to have errors.
 - A total of 367 PHA/projects described their strategies to reduce error. Thirty-five percent of these PHA/projects indicated their strategy was to review their files and make corrections if necessary, followed by 19 percent of PHA/projects that indicated that their strategy to reduce errors were to train their employees on policy, procedures and other topics with most common errors.
 - When PHA/projects had questions concerning HUD policies, they used a variety of methods to seek answers. They were most likely to refer to their HUD/PHA/owner manual (96%), up from 92 percent in FY 2009. This year, the percentage of PHA/projects who used internet/web-based information/training jumped from 81 percent in FY 2009 to 87 percent in FY 2010.
 - Most PHA/projects review tenant files as a QC measure after (re)certifications have been conducted in some form, at 94 percent. In determining which cases to select for review, PHA/projects most frequently randomly spot checked a percentage of all cases (69%). Overall, 33 percent of PHA/projects reported reviewing all cases.
 - When monitoring (re)certification work, a majority of PHA/projects most frequently have the team leader or supervisor perform the monitoring (83%). Of the remaining types of personnel used to monitor (re)certification work, 42 percent of the

- PHA/projects used coworkers, 40 percent used staff auditors, 19 percent used outside auditors, and 23 percent used contracts administrators most frequently.
- Eighty-two PHA/projects had suggestions regarding how to help the PHA/projects minimize errors. The most common suggestions were regarding EIV. Twenty-seven percent of the PHA/projects that responded indicated EIV data should be more current. Another 12 percent indicated that there should be general improvement in EIV. An additional 11 percent specified that EIV could be improved by adding other income sources, such as TANF, VA benefits, child support, welfare, etc.

K. Multivariate Analysis

The framework and methodology for the multivariate analysis remained relatively the same as in the FY 2009 study, and addresses Objective 5(determine whether error rates and error costs have statistically significant differences from program to program), 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), and Objective 13(determine whether other tenant or project characteristics on which data are available are correlated with higher or lower error rates). Two separate analyses were performed. The first looked at the impact of project and household characteristics on error rates. The second examined the impact of those characteristics on project-caused errors.

Project and Household Characteristics Impact on Rent Error. The ways in which rent errors related to project and household characteristics were similar to the findings from previous studies. Other things being equal, gross rent error and underpayment error for PHA-administered Section 8 households' were higher than the other two program types: Public Housing and Owner-administered. The net effects of program type differences were consistent with the results from the bivariate cross-tabulations presented in the main text of this report (see Exhibits ES-1 and ES-3).

Project-caused errors are defined as errors or problems that occur during the process of conducting (re)certifications and determining rent subsidy, and accounted for a large proportion of gross rent error. Of the project-caused errors, transcription errors and overdue recertification errors strongly predicted gross error, both contributing to higher gross error, as shown in bivariate comparison and multiple regression analysis. Transcription error was also related to higher overpayment and underpayment. These findings were consistent with that from the FY 2008 and FY 2009 analyses, underscoring the importance of reducing project-made caused particularly transcription errors and overdue recertifications in order to minimize rent errors.

Household characteristics accounted for gross rent error, overpayment and underpayment in similar patterns as identified in prior studies. Essentially, characteristics indicative of complexity of financial conditions and incomes or expenses strongly predicted higher rent errors. These relationships were remarkably consistent across models and across yearly analyses, suggesting robust tenant risk factors that project certification staff must cope with.

The impact of project characteristics or project operations remained elusive in the modeling of rent error. One project operation characteristic, indicating cooperation with various third parties to obtain verification information, was found potentially meaningful as it related to lower gross rent error and underpayment error, when statistically controlling for other factors. The effects of other project level characteristics (e.g., percent of experienced certification staff and using different

sources of information to answer HUD policy questions), were uncertain despite their statistically significant estimates. Such uncertainties were caused by difficulties in statistics interpretation and less reliable estimates, i.e., modest effect size and low statistical significance level.

Project and Household Characteristics Impact on Project-Caused Error. To explore factors influential to project-caused errors, we modeled the project-caused errors that were identified as predictive of rent errors, i.e., transcription error (counts and percent) and overdue recertification error. We found that households' complex financial situations were related to these project-caused errors in similar ways as they were related to rent error. Project characteristics and operation, however, were not found to be as meaningful. A better understanding of housing project management and certification practice is still needed in order to develop valid measures of project resources and certification approaches that can explain the rent error.

L. The 20 Largest PHAs Study

The 20 Largest PHAs Study includes the 17 largest PHAs and the three largest state PHAs in the project level sample selected for the Quality Control for Rental Assistance Subsidy Determinations Study. There are 32 households in most PHAs, 48 in RQ005, and 124 households in NY005, for a total of 748 households. Each PHA represents both Public Housing and Voucher households. Weights for the 20 Largest PHAs Study were not calculated and all the exhibits in this section are not weighted.

Administrative Error. Exhibit IV-31a provides the percent of households with overdue recertification and transcription errors; and the percent of income and expense items that were verified by PHA staff both with written third-party verification only, and verbal or written third-party verification, or documentation. These types of administrative errors were examined because they are typically associated with overall gross and net rent error. Overdue recertification errors in general were relatively scarce. Most of the PHAs had little or no recertification errors, and over half of the 20 largest PHAs had no overdue recertification errors. However, 19 percent of IL025 cases were overdue. For transcription error, most of the 20 largest PHAs had percentages that were around the QC study mean. However, WI002 had the highest percentage with 66 percent and TX005 had the lowest with 19 percent. Compared to all the main QC study PHAs, the 20 largest PHAs had somewhat higher overdue recertification error (1 percent and 6 percent, respectively) and transcription error (38 percent and 40 percent, respectively). Regarding the percentages of verified items, the 20 largest PHAs verified items within one percentage point as the QC study PHAs.

Exhibit IV-31a
Administrative Errors in the 20 Largest PHAs

PHA	Number of Cases	Overdue Recertification Error	Transcription Error	Percent of Verified Items	
				Third-Party Verbal or In-Writing, or Documentation	Third-Party In-Writing
CA002	32	3%	31%	96%	32%
CA004	32	-	34%	92%	58%
CA007	32	-	44%	100%	36%
CA094	32	-	31%	100%	22%
GA901	32	-	34%	77%	62%
IL025	32	19%	25%	88%	12%
MA002	32	-	47%	92%	29%
MI901	32	3%	38%	90%	35%
NJ002	32	-	50%	90%	25%
NJ912	32	-	47%	100%	33%
NY005	124	4%	62%	85%	21%
NY041	32	-	53%	80%	25%
NY110	32	9%	41%	79%	21%
NY904	32	-	44%	80%	41%
OH003	32	-	31%	92%	56%
OH004	32	-	47%	73%	50%
OH007	32	-	38%	92%	50%
RQ005	48	2%	21%	85%	41%
TX005	32	3%	19%	93%	66%
WI002	32	-	66%	96%	17%
Total	748	6%	40%	89%	37%
QC Study Total	2,404	1%	38%	90%	37%

Data in this exhibit are not weighted.

Payment Error. Exhibit IV-31b provides payment error information. It includes proper payments, under- and overpayments of tenant rents, and the mean gross rent errors by PHA. A large proportion of proper payments typically lead to small gross rent errors for most PHAs. The PHA with the highest percentage of proper payments was OH004 at 85 percent. The PHAs with the lowest percentage of proper payments were NJ912 and OH003 at 38 percent. OH003 also had the highest average gross dollar error at \$43. NJ912, however, only had an average gross dollar error of \$8. This implies that while NJ912 had a high case error, the average dollar amount for each case was relatively small. Compared to the QC study PHAs as a whole, the 20 largest PHAs had a lower percentage of proper payments (67 percent and 64 percent, respectively). The average gross dollar error was also higher for the 20 largest PHAs (\$19 for the 20 largest PHAs compared to \$13 for the QC Study). As implied above with regard to NJ912, a high case error rate does not necessarily translate into a high average gross dollar error, and PHA with a low case error rate may have a high average gross dollar error. Policies that increase proper payment rates may have little

effect on decreasing rent errors (and vice versa). These seemingly related problems may sometimes require different approaches targeted to specific PHAs.

Exhibit IV-31b
Dollar Rent Errors in the 20 Largest PHAs

PHA	Underpayment	Proper Payment	Overpayment	Average Gross Dollar Error
CA002	18.8%	81.3%	0.0%	\$15.13
CA004	4.2%	79.2%	16.7%	\$11.75
CA007	8.3%	83.3%	8.3%	\$4.17
CA094	18.8%	56.3%	25.0%	\$8.88
GA901	12.5%	75.0%	12.5%	\$22.38
IL025	33.3%	66.7%	0.0%	\$18.75
MA002	25.0%	50.0%	25.0%	\$21.06
MI901	8.3%	75.0%	16.7%	\$17.58
NJ002	12.5%	75.0%	12.5%	\$9.06
NJ912	12.5%	37.5%	50.0%	\$7.88
NY005	22.6%	60.5%	16.9%	\$33.00
NY041	20.8%	50.0%	29.2%	\$16.42
NY110	8.3%	58.3%	33.3%	\$23.25
NY904	17.9%	50.0%	32.1%	\$17.04
OH003	31.3%	37.5%	31.3%	\$43.38
OH004	10.0%	85.0%	5.0%	\$2.45
OH007	12.5%	75.0%	12.5%	\$3.19
RQ005	12.5%	77.1%	10.4%	\$5.56
TX005	36.8%	47.4%	15.8%	\$33.42
WI002	33.3%	50.0%	16.7%	\$20.42
Total	18.5%	64.1%	17.4%	\$19.34
QC Study Total	15.5%	66.8%	17.7%	\$12.97

Data in this exhibit are not weighted

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 ICF 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 seven years. However, there is no information on changes in tenant behavior related to the identification and reduction of error. One might want to assume that reducing error should save HUD money. However, because the housing programs managed by HUD are not entitlement programs (meaning not everyone who is eligible for the program is entitled to benefits), as soon as an ineligible household is removed from the roles, another household takes that household's place.

The subsidy for the replacement household could be even higher than the subsidy for the previously subsidized household. The existing quality control studies identify the dollars associated with error, but do not identify an overall reduction in subsidy dollars. To really

understand the overall impact of the quality control studies on subsidy funding, additional information is needed regarding both the tenants receiving the subsidies and the PHA/projects administering the housing benefits.

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

During the current study, household-level information was used to match sample household members with Social Security data. 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 ICF 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 98 percent of the sample households are included in the PIC/TRACS databases. While this is slightly down from the FY 2009 match at 99 percent, the general trend over time has been increasing—the FY 2009 study indicated 99 percent of the sample households were included in the PIC/TRACS database, while the FY 2008 study indicated that 97 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.

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 study 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.
7. **Consider conducting a remote data collection with national estimates and a larger number of households per project.** Eliminating a field data collection would eliminate the need to travel, and the costs associated with travel. More importantly, the sample would not have to be geographically clustered. The projects could be sampled by project area, using PPS and stratification. Stratification would guarantee diversity of projects, and, unlike clustering, it would decrease the confidence interval of the estimates. This means that practically every state could be represented, and one would be able to increase the precision and make better estimates with the same sample size. The precision would further be improved by increasing number of households per project. In this scenario, the number of projects to be sampled would be somewhat smaller, and the number of households per project would be much larger. There are however, potential tradeoffs with remote data collection. PHA/projects would be required to send tenant file information to study headquarters, and household interviews would be conducted over the phone. A field data collection has some advantages with regard to the quality of the data collected. A conversation is required with HUD to address any concerns about whether these potential tradeoffs can be sufficiently abated through telephone communication with the Project and Tenant.

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 begun several initiatives in the last few years, the errors associated with the programs included in this study are no longer decreasing. Additional action is needed. The suggestions below are examples of the type of actions that need to be taken. Overall PHA/projects must be held accountable for their work, but HUD must provide the tools needed to accomplish the work accurately.

1. **HUD should continue 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 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.

The Earned Income Disregard is one example of a difficult rule where PHA/owners would benefit from clearer guidelines and training materials. Guidelines that include calculation sheets that are easy to follow and maintain should be provided. The calculation worksheet should include step by step directions on how to calculate the percent of disregard for that year, the income that should be used to calculate the disregard (basically providing a place to record the income by component type—TANF, SS, SSI, Pension etc), easy to follow formulas, and end and start dates for the completion of the disregard. For more complicated cases, where the disregard should have been granted but was not, and the housing staff is now retro-actively correcting the mistake, guidelines should be provided on how to implement the adjustment. Standardized documents should be provided for this adjustment that includes the earned income amount that should be used (current or based on the event start date). Finally, clear instructions should be provided on how to calculate the event start date and how far back the housing staff must go to retro-actively give the disregard.

In addition, HUD should consider creating a handbook that combines or cross references the rules and regulations for all rental assistance programs administered by HUD. Such a handbook would give staff a central source of information for all the programs for which

they are responsible, as well as potentially support the administration's efforts through the Rental Policy Working Group's Alignment to reduce redundancy among agencies.

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 2009 is improved HUD monitoring and the expectation of such monitoring. However as the dollars associated with rent error stop declining, further action will be needed to help the PHAs and owners focus on policies and procedures that lead to error.

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

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

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

The 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. 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**.
- e. Obtain the Utility Allowance.
- f. The amount of the tenant's rent (QC RENT) is the lower of: a. (TTP), minus d. (Utility Allowance), or the Flat Rent.¹
- g. Determine if the QC RENT equals the ACTUAL RENT. IF YES, **no error**. IF NO, **dollar error**.

2. Section 8 Vouchers

- a. Obtain TTP.
- b. Obtain the Rent to Owner.
- c. Obtain Utility Allowance.
- d. If TTP is greater than Gross Rent, then set TTP to Gross Rent.
- e. Obtain Payment Standard² (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.
- 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 i**.
- 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 i**. IF NO, **procedural error. Family Share = h. Go to i**.

¹ If there is no Flat Rent, the QC rent will be the lower of the Ceiling Rent and the a. (TTP) minus d. (Utility Allowance) to determine the dollar amount of error.

² For Project Based Vouchers, the Payment Standard equals the Gross Rent.

- 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 = 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). If Space Rent is greater than the Payment Standard, use 0.
- 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.³
- 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.
 Owner Administered = Contract Rent plus the Utility Allowance.
- d. Obtain the TTP.
- e. Obtain the Payment Standard (Voucher).
- f. Obtain the HAP.
 Owner Administered: $HAP = \text{Gross Rent} - \text{TTP}$.
 Voucher: $HAP = \text{Gross Rent or Payment Standard (whichever is less)} - \text{TTP}$.
 Enhanced Voucher: $HAP = \text{Gross Rent} - \text{Payment Standard}$.
- 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.

³ If Maximum Rent is not available, Fair Market Rent is used as a substitution for Maximum Rent.

- 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.

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 $120 \times (5/6) = 100$ 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 be estimated to 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 $26 \frac{2}{3}$.

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

1. Public Housing projects
2. PHA-administered Section 8 projects
3. 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 and the owner-administered projects from Alaska 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 Due to Weighting. The weights led to an effective sample size (because of the weighting) of 760 (down from an actual size of 800) for the Office of Housing-administered projects, 745 for the Public Housing projects (down from 804), and 760 for the PHA-administered Section 8 projects (down from 800). The effective sample size is the size of a random sample which would yield confidence intervals of the same size as the current sample. The effective sample size will often be smaller than the actual sample, partly because of clustering and partly because of weighting.

Variance Estimation. Standard errors were obtained for a number of estimates using a delete-a-group Jackknife procedure. This was implemented using 20 replicate groups and creating 20 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).

Reference

Kott, P. S. (1998). *Using the Delete-a-Group Jackknife 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

Source Tables Based on Quality Control Data

HUD QC FY 2010
Table 1a. Verification of QC Rent Components
Third-Party Verbal or In-Writing, or Documentation, or EIV (Enterprise Income Verification)

Rent Component	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	55	(4.7%)	29	(2.5%)	1,087	(92.8%)
Pension, etc.	6	(.2%)	22	(.9%)	2,445	(98.9%)
Public Assistance	41	(8.2%)	9	(1.9%)	449	(89.9%)
Other Income	102	(10.7%)	21	(2.2%)	829	(87.1%)
Asset Income	6	(1.0%)	47	(7.6%)	561	(91.3%)
Child Care Expense	25	(13.3%)	4	(2.3%)	161	(84.4%)
Disability Expense	4	(48.7%)	1	(14.6%)	3	(36.7%)
Medical Expense	92	(7.1%)	141	(10.8%)	1,074	(82.2%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 1b. Verification of QC Rent Components
Third-Party In-Writing

Rent Component	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	255	(20.8%)	62	(5.0%)	906	(74.1%)
Pension, Etc.	104	(4.2%)	142	(5.7%)	2,230	(90.1%)
Public Assistance	191	(34.8%)	9	(1.7%)	349	(63.5%)
Other Income	380	(37.0%)	41	(4.0%)	607	(59.0%)
Asset Income	52	(8.4%)	93	(15.0%)	472	(76.6%)
Child Care Expense	52	(27.5%)	5	(2.5%)	134	(70.0%)
Disability Expense	7	(75.4%)	1	(14.6%)	1	(10.0%)
Medical Expense	234	(17.9%)	364	(27.8%)	709	(54.3%)

2011.9.2 [Weighted]

HUD QC FY 2010
**Table 1c. Verification of QC Rent Components
 Third-Party In-Writing or EIV**

Rent Component	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	225	(18.4%)	56	(4.5%)	942	(77.0%)
Pension, Etc.	67	(2.7%)	110	(4.5%)	2,298	(92.8%)
Public Assistance	191	(34.8%)	9	(1.7%)	349	(63.5%)
Other Income	376	(36.5%)	44	(4.3%)	608	(59.1%)
Asset Income	52	(8.4%)	93	(15.0%)	472	(76.6%)
Child Care Expense	52	(27.5%)	5	(2.5%)	134	(70.0%)
Disability Expense	7	(75.4%)	1	(14.6%)	1	(10.0%)
Medical Expense	210	(16.0%)	354	(27.1%)	743	(56.9%)

2011.9.2 [Weighted]

HUD QC FY 2010
**Table 1d. Verification of QC Rent Components
 Third-Party—Verbal**

Rent Component	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	1,207	(98.8%)	9	(.7%)	6	(.5%)
Pension, Etc.	2,469	(99.8%)	6	(.2%)		
Public Assistance	547	(99.6%)			2	(.4%)
Other Income	1,025	(99.6%)			4	(.4%)
Asset Income	612	(99.4%)	4	(.6%)		
Child Care Expense	190	(99.4%)			1	(.6%)
Disability Expense	9	(100.0%)				
Medical Expense	1,299	(99.4%)	7	(.5%)	1	(.1%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 1e. Verification of QC Rent Components
Documentation

Rent Component	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	1,083	(88.6%)	35	(2.9%)	104	(8.5%)
Pension, Etc.	2,333	(94.3%)	83	(3.4%)	58	(2.4%)
Public Assistance	448	(81.5%)	5	(.8%)	97	(17.6%)
Other Income	806	(78.3%)	36	(3.5%)	187	(18.2%)
Asset Income	516	(83.8%)	61	(10.0%)	38	(6.2%)
Child Care Expense	163	(85.3%)	4	(2.0%)	24	(12.7%)
Disability Expense	7	(73.3%)			2	(26.7%)
Medical Expense	936	(71.6%)	274	(21.0%)	97	(7.4%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 1f. Verification of QC Rent Components
EIV

Rent Component	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	1,182	(96.7%)	14	(1.2%)	26	(2.1%)
Pension, Etc.	2,400	(97.0%)	41	(1.6%)	34	(1.4%)
Public Assistance	549	(100.0%)				
Other Income	1,024	(99.6%)	3	(.3%)	1	(.1%)
Asset Income	616	(100.0%)				
Child Care Expense	191	(100.0%)				
Disability Expense	9	(100.0%)				
Medical Expense	1,256	(96.1%)	35	(2.7%)	17	(1.3%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 2. Percent of Households, by Payment Type and Program Type

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	146	(15.3%)	(22.8%)	673	(70.5%)	(24.4%)	136	(14.3%)	(18.7%)	955	(100.0%)
Section 8	316	(17.0%)	(49.2%)	1,150	(61.9%)	(41.7%)	392	(21.1%)	(53.7%)	1,858	(100.0%)	(45.0%)
Total	462	(16.4%)	(72.0%)	1,823	(64.8%)	(66.0%)	528	(18.8%)	(72.3%)	2,813	(100.0%)	(68.1%)
Owner-Administered	180	(13.6%)	(28.0%)	938	(71.1%)	(34.0%)	202	(15.3%)	(27.7%)	1,320	(100.0%)	(31.9%)
Total	180	(13.6%)	(28.0%)	938	(71.1%)	(34.0%)	202	(15.3%)	(27.7%)	1,320	(100.0%)	(31.9%)
Total	642	(15.5%)	(100.0%)	2,761	(66.8%)	(100.0%)	730	(17.7%)	(100.0%)	4,133	(100.0%)	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 2(S). Percent of Households, by Payment Type and Program Type
(Proper Payment Based on exact match of Actual and QC Rent)

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	180	(18.9%)	(21.1%)	572	(59.8%)	(25.2%)	203	(21.3%)	(20.1%)	955	(100.0%)
Section 8	423	(22.8%)	(49.5%)	933	(50.2%)	(41.1%)	503	(27.1%)	(49.8%)	1,858	(100.0%)	(45.0%)
Total	603	(21.4%)	(70.7%)	1,504	(53.5%)	(66.3%)	706	(25.1%)	(69.9%)	2,813	(100.0%)	(68.1%)
Owner-Administered	250	(19.0%)	(29.3%)	766	(58.0%)	(33.7%)	304	(23.0%)	(30.1%)	1,320	(100.0%)	(31.9%)
Total	250	(19.0%)	(29.3%)	766	(58.0%)	(33.7%)	304	(23.0%)	(30.1%)	1,320	(100.0%)	(31.9%)
Total	853	(20.6%)	(100.0%)	2,270	(54.9%)	(100.0%)	1,010	(24.4%)	(100.0%)	4,133	(100.0%)	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 3. Dollar Rent Error, by Program Type

Program Type	Actual Rent (Monthly)			QC Rent (Monthly)			Gross Rent Error (Monthly)					
	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	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	955	(23.1%)	222,362	232.77	955	(23.1%)	223,893	234.37	955	(23.1%)	11,979	12.54
Section 8	1,858	(45.0%)	390,598	210.23	1,858	(45.0%)	392,949	211.49	1,858	(45.0%)	28,968	15.59
Total	2,813	(68.1%)	612,960	217.88	2,813	(68.1%)	616,842	219.26	2,813	(68.1%)	40,948	14.56
Owner-Administered	1,320	(31.9%)	262,234	198.66	1,320	(31.9%)	264,483	200.37	1,320	(31.9%)	14,405	10.91
Total	1,320	(31.9%)	262,234	198.66	1,320	(31.9%)	264,483	200.37	1,320	(31.9%)	14,405	10.91
Total	4,133	(100.0%)	875,194	211.74	4,133	(100.0%)	881,325	213.23	4,133	(100.0%)	55,353	13.39

2011.9.2 [Weighted]

HUD QC FY 2010
Table 4. Dollar Error Amount, by Payment Type and Program Type

Program Type	Underpayment (Monthly)			Overpayment (Monthly)			QC 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	146	(22.8%)	6,639	45.46	136	(18.7%)	5,114	37.55	955	(23.1%)	223,893	234.37
Section 8	316	(49.2%)	15,416	48.81	392	(53.7%)	13,044	33.29	1,858	(45.0%)	392,949	211.49
Total	462	(72.0%)	22,055	47.75	528	(72.3%)	18,158	34.39	2,813	(68.1%)	616,842	219.26
Owner-Administered	180	(28.0%)	8,143	45.23	202	(27.7%)	5,834	28.87	1,320	(31.9%)	264,483	200.37
Total	180	(28.0%)	8,143	45.23	202	(27.7%)	5,834	28.87	1,320	(31.9%)	264,483	200.37
Total	642	(100.0%)	30,197	47.05	730	(100.0%)	23,991	32.86	4,133	(100.0%)	881,325	213.23

2011.9.2 [Weighted]

HUD QC FY 2010
Table 4(S). Dollar Error Amount, by Payment Type and Program Type
(Proper Payment Based on Exact Match of Actual and QC Rent)

Program Type	Underpayment (Monthly)			Overpayment (Monthly)			QC 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	180	(21.1%)	6,728	37.32	203	(20.1%)	5,251	25.81	955	(23.1%)	223,893	234.37
	423	(49.5%)	15,660	37.05	503	(49.8%)	13,309	26.48	1,858	(45.0%)	392,949	211.49
	603	(70.7%)	22,388	37.13	706	(69.9%)	18,560	26.28	2,813	(68.1%)	616,842	219.26
Owner-Administered	250	(29.3%)	8,327	33.28	304	(30.1%)	6,078	19.99	1,320	(31.9%)	264,483	200.37
	250	(29.3%)	8,327	33.28	304	(30.1%)	6,078	19.99	1,320	(31.9%)	264,483	200.37
Total	853	(100.0%)	30,715	36.00	1,010	(100.0%)	24,638	24.39	4,133	(100.0%)	881,325	213.23

2011.9.2 [Weighted]

HUD QC FY 2010
Table 5. Gross and Net Rent Error, by Program Type

Program Type	Gross Rent Error (Monthly)			Net Rent Error (Monthly)			QC Rent (Monthly)					
	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	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	955	(23.1%)	11,753	12.30	955	(23.1%)	-1,525	-1.60	955	(23.1%)	223,893	234.37
	1,858	(45.0%)	28,460	15.32	1,858	(45.0%)	-2,373	-1.28	1,858	(45.0%)	392,949	211.49
	2,813	(68.1%)	40,212	14.29	2,813	(68.1%)	-3,897	-1.39	2,813	(68.1%)	616,842	219.26
Owner-Administered	1,320	(31.9%)	13,977	10.59	1,320	(31.9%)	-2,309	-1.75	1,320	(31.9%)	264,483	200.37
	1,320	(31.9%)	13,977	10.59	1,320	(31.9%)	-2,309	-1.75	1,320	(31.9%)	264,483	200.37
Total	4,133	(100.0%)	54,189	13.11	4,133	(100.0%)	-6,206	-1.50	4,133	(100.0%)	881,325	213.23

2011.9.2 [Weighted]

HUD QC FY 2010
Table 5(S). Gross and Net Rent Error, by Program Type
 (Proper Payment based on exact match of Actual and QC Rent)

Program Type	Gross Rent Error (Monthly)			Net Rent Error (Monthly)			QC Rent (Monthly)					
	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	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	955	(23.1%)	11,979	12.54	955	(23.1%)	-1,477	-1.55	955	(23.1%)	223,893	234.37
	1,858	(45.0%)	28,968	15.59	1,858	(45.0%)	-2,351	-1.27	1,858	(45.0%)	392,949	211.49
Total	2,813	(68.1%)	40,948	14.56	2,813	(68.1%)	-3,828	-1.36	2,813	(68.1%)	616,842	219.26
Owner-Administered	1,320	(31.9%)	14,405	10.91	1,320	(31.9%)	-2,249	-1.70	1,320	(31.9%)	264,483	200.37
Total	1,320	(31.9%)	14,405	10.91	1,320	(31.9%)	-2,249	-1.70	1,320	(31.9%)	264,483	200.37
Total	4,133	(100.0%)	55,353	13.39	4,133	(100.0%)	-6,077	-1.47	4,133	(100.0%)	881,325	213.23

2011.9.2 [Weighted]

HUD QC FY 2010
Table 6. Case Type, by Program Type

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	115	(12.1%)	(22.5%)	820	(85.8%)	(22.9%)	20	(2.1%)	(44.2%)	955	(100.0%)	(23.1%)
	179	(9.6%)	(34.8%)	1,660	(89.4%)	(46.4%)	19	(1.0%)	(42.5%)	1,858	(100.0%)	(45.0%)
Total	294	(10.5%)	(57.3%)	2,480	(88.2%)	(69.4%)	39	(1.4%)	(86.6%)	2,813	(100.0%)	(68.1%)
Owner-Administered	219	(16.6%)	(42.7%)	1,095	(83.0%)	(30.6%)	6	(.5%)	(13.4%)	1,320	(100.0%)	(31.9%)
Total	219	(16.6%)	(42.7%)	1,095	(83.0%)	(30.6%)	6	(.5%)	(13.4%)	1,320	(100.0%)	(31.9%)
Total	513	(12.4%)	(100.0%)	3,575	(86.5%)	(100.0%)	45	(1.1%)	(100.0%)	4,133	(100.0%)	(100.0%)

2011.9.2 [Weighted]

Table 7. Percent of Newly Certified Households Meeting Certification Criteria
HUD QC FY 2010

Certification Criteria	Met Criterion		Did Not Meet Criterion	
	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
Citizenship	513	(100.0%)		
Social Security Number	505	(98.5%)	8	(1.5%)
Consent Form	495	(96.5%)	18	(3.5%)
Low and Very Low Income	513	(100.0%)		
Meets All Eligibility Criteria	489	(95.4%)	24	(4.6%)

2011.9.2 [Weighted]

Table 7b. Percent of Newly Certified Households Meeting Certification Criteria, by Program Type
HUD QC FY 2010

Certification Criteria	Met Criterion		Did Not Meet Criterion	
	# of Cases (in 1,000)	% of Cases	# of Cases (in 1,000)	% of Cases
Public Housing	Citizenship	115	(100.0%)	
	Social Security Number	113	(97.9%)	2
	Consent Form	113	(98.2%)	2
	Low and Very Low Income	115	(100.0%)	
	Meets All Eligibility Criteria	111	(96.2%)	4
PHA-Administered Section 8	Citizenship	179	(100.0%)	
	Social Security Number	176	(98.8%)	2
	Consent Form	167	(93.7%)	11
	Low and Very Low Income	179	(100.0%)	
	Meets All Eligibility Criteria	167	(93.7%)	11
Owner-Administered	Citizenship	219	(100.0%)	
	Social Security Number	216	(98.5%)	3
	Consent Form	214	(97.8%)	5
	Low and Very Low Income	219	(100.0%)	
	Meets All Eligibility Criteria	211	(96.4%)	8

2011.9.2 [Weighted]

HUD QC FY 2010
Table 8. Dollar Error Amount, by Payment Type and Case Type

Case Type	Underpayment (Monthly)			Overpayment (Monthly)			QC 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
Certification	66	(10.2%)	2,452	37.41	93	(12.8%)	3,700	39.65	513	(12.4%)	103,073	200.94
Total	66	(10.2%)	2,452	37.41	93	(12.8%)	3,700	39.65	513	(12.4%)	103,073	200.94
Non-Overdue	561	(87.3%)	26,072	46.51	622	(85.2%)	18,233	29.32	3,575	(86.5%)	767,784	214.74
Overdue	16	(2.4%)	1,673	106.63	15	(2.1%)	2,058	137.34	45	(1.1%)	10,467	233.13
Total	576	(89.8%)	27,745	48.14	637	(87.2%)	20,292	31.86	3,620	(87.6%)	778,252	214.97
Total	642	(100.0%)	30,197	47.05	730	(100.0%)	23,991	32.86	4,133	(100.0%)	881,325	213.23

2011.9.2 [Weighted]

HUD QC FY 2010
Table 8(S). Dollar Error Amount, by Payment Type and Case Type
(Proper Payment based on exact match of Actual and QC Rent)

Case Type	Underpayment (Monthly)			Overpayment (Monthly)			QC 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
Certification	94	(11.1%)	2,531	26.79	131	(13.0%)	3,802	28.97	513	(12.4%)	103,073	200.94
Total	94	(11.1%)	2,531	26.79	131	(13.0%)	3,802	28.97	513	(12.4%)	103,073	200.94
Non-Overdue	743	(87.1%)	26,510	35.68	864	(85.5%)	18,778	21.73	3,575	(86.5%)	767,784	214.74
Overdue	16	(1.8%)	1,673	106.63	15	(1.5%)	2,058	137.34	45	(1.1%)	10,467	233.13
Total	759	(88.9%)	28,183	37.15	879	(87.0%)	20,836	23.71	3,620	(87.6%)	778,252	214.97
Total	853	(100.0%)	30,715	36.00	1,010	(100.0%)	24,638	24.39	4,133	(100.0%)	881,325	213.23

2011.9.2 [Weighted]

HUD QC FY 2010
Table 9. Largest Component Error for Households with Rent Error (Annual Dollars)

Rent Component	# of Cases (in 1,000)	Col. % of Cases	Sum Dollar Amount (in 1,000)	Ave. Dollar Amount
Earned Income	365	(26.6%)	1,155,074	3,162
Pension, Etc.	229	(16.7%)	462,373	2,021
Public Assistance	97	(7.0%)	184,907	1,915
Other Income	228	(16.6%)	494,924	2,173
Asset Income	21	(1.6%)	54,296	2,535
Dependent Allowance	50	(3.6%)	25,595	517
Elderly HH Allowance	29	(2.1%)	11,785	400
Child Care Allowance	44	(3.2%)	55,275	1,263
Medical Allowance	299	(21.8%)	391,383	1,308
No Error	10	(.7%)	0	0
Total	1,372	(100.0%)	2,835,612	2,067

2011.9.2 [Weighted]

HUD QC FY 2010
Table 10. Total and Largest Dollar Error, by Program Type for Households with Rent Errors

Program Type	Total Dollar In Error			Largest Dollar Error				
	# 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
Public Housing	282	(20.6%)	722,922	2,561.52	282	(20.6%)	575,200	2,038.10
Section 8	708	(51.6%)	1,843,239	2,604.66	708	(51.6%)	1,492,787	2,109.44
Total	990	(72.2%)	2,566,161	2,592.36	990	(72.2%)	2,067,987	2,089.10
Owner-Administered	382	(27.8%)	865,242	2,264.51	382	(27.8%)	767,625	2,009.02
Total	382	(27.8%)	865,242	2,264.51	382	(27.8%)	767,625	2,009.02
Total	1,372	(100.0%)	3,431,403	2,501.05	1,372	(100.0%)	2,835,612	2,066.80

2011.9.2 [Weighted]

HUD QC FY 2010
Table 11. QC Rent Components, by Payment Type and Administration Type

Rent Component	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	206	(7.3%)	(83.6%)	40	(3.1%)	(16.4%)	246	(6.0%)	(100.0%)	
	Pension, Etc.	125	(4.4%)	(61.2%)	79	(6.0%)	(38.8%)	204	(4.9%)	(100.0%)	
	Public Assistance	59	(2.1%)	(71.8%)	23	(1.8%)	(28.2%)	82	(2.0%)	(100.0%)	
	Other Income	141	(5.0%)	(82.5%)	30	(2.3%)	(17.5%)	171	(4.1%)	(100.0%)	
	Asset Income	54	(1.9%)	(60.8%)	35	(2.6%)	(39.2%)	89	(2.2%)	(100.0%)	
	Dependent Allowance	29	(1.0%)	(90.3%)	3	(.2%)	(9.7%)	32	(.8%)	(100.0%)	
	Elderly HH Allowance	13	(.5%)	(90.2%)	1	(.1%)	(9.8%)	15	(.4%)	(100.0%)	
	Child Care Allowance	23	(.8%)	(93.4%)	2	(.1%)	(6.6%)	25	(.6%)	(100.0%)	
	Disability Allowance										
	Medical Allowance	72	(2.5%)	(43.3%)	94	(7.1%)	(56.7%)	165	(4.0%)	(100.0%)	
	No Error	6	(.2%)	(100.0%)				6	(.1%)	(100.0%)	
	Proper Payment	Earned Income	139	(4.9%)	(75.8%)	44	(3.4%)	(24.2%)	183	(4.4%)	(100.0%)
		Pension, Etc.	213	(7.6%)	(52.3%)	195	(14.8%)	(47.7%)	408	(9.9%)	(100.0%)
		Public Assistance	61	(2.2%)	(77.3%)	18	(1.3%)	(22.7%)	78	(1.9%)	(100.0%)
Other Income		114	(4.1%)	(68.9%)	52	(3.9%)	(31.1%)	166	(4.0%)	(100.0%)	
Asset Income		119	(4.2%)	(60.2%)	79	(6.0%)	(39.8%)	198	(4.8%)	(100.0%)	
Dependent Allowance		22	(.8%)	(81.1%)	5	(.4%)	(18.9%)	27	(.6%)	(100.0%)	
Elderly HH Allowance		21	(.7%)	(94.3%)	1	(.1%)	(5.7%)	22	(.5%)	(100.0%)	
Child Care Allowance		13	(.4%)	(86.7%)	2	(.1%)	(13.3%)	14	(.3%)	(100.0%)	
Disability Allowance		2	(.1%)	(100.0%)				2	(.0%)	(100.0%)	
Medical Allowance		151	(5.4%)	(48.2%)	162	(12.3%)	(51.8%)	314	(7.6%)	(100.0%)	
No Error	1,185	(42.1%)	(67.9%)	560	(42.4%)	(32.1%)	1,746	(42.2%)	(100.0%)		

Rent Component	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
Earned Income	184	(6.5%)	(84.3%)	34	(2.6%)	(15.7%)	218	(5.3%)	(100.0%)
Pension, Etc.	153	(5.4%)	(62.6%)	91	(6.9%)	(37.4%)	244	(5.9%)	(100.0%)
Public Assistance	29	(1.0%)	(67.6%)	14	(1.0%)	(32.4%)	43	(1.0%)	(100.0%)
Other Income	104	(3.7%)	(81.6%)	23	(1.8%)	(18.4%)	127	(3.1%)	(100.0%)
Asset Income	65	(2.3%)	(63.1%)	38	(2.9%)	(36.9%)	103	(2.5%)	(100.0%)
Dependent Allowance	47	(1.7%)	(75.7%)	15	(1.1%)	(24.3%)	62	(1.5%)	(100.0%)
Elderly HH Allowance	42	(1.5%)	(81.2%)	10	(.7%)	(18.8%)	51	(1.2%)	(100.0%)
Child Care Allowance	36	(1.3%)	(82.7%)	8	(.6%)	(17.3%)	44	(1.1%)	(100.0%)
Disability Allowance									
Medical Allowance	161	(5.7%)	(62.6%)	96	(7.3%)	(37.4%)	258	(6.2%)	(100.0%)
No Error	2	(.1%)	(53.1%)	2	(.1%)	(46.9%)	4	(.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%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 12a. Elderly/Disabled Allowances

Allowances	Non-Elderly/Disabled HH		Elderly/Disabled HH		Total	
	# of Cases (in 1,000)	Col. % of Cases	# of Cases (in 1,000)	Col. % of Cases	# of Cases (in 1,000)	Col. % of Cases
No Allowance	1,864	(100.0%)			1,864	(45.1%)
Incorrect Allowance			88	(3.9%)	88	(2.1%)
Correct Allowance			2,181	(96.1%)	2,181	(52.8%)
Total	1,864	(100.0%)	2,269	(100.0%)	4,133	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 12b. Dependent Allowances

Allowances	HH W/Out Dependent		HH W/Dependent		Total	
	# of Cases (in 1,000)	Col. % of Cases	# of Cases (in 1,000)	Col. % of Cases	# of Cases (in 1,000)	Col. % of Cases
No Allowance	2,267	(99.7%)			2,267	(54.8%)
Incorrect Allowance	7	(.3%)	114	(6.1%)	121	(2.9%)
Correct Allowance			1,745	(93.9%)	1,745	(42.2%)
Total	2,274	(100.0%)	1,859	(100.0%)	4,133	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 13. Calculation Errors on Form 50058/59

Items	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	158	152	45	45	202	197
Net Family Assets and Income	224	119	83	33	307	153
Allowances and Adjusted Income	1,473	1,197	88	37	1,561	1,234
Family Rent and Subsidy Information	490	283	65	56	555	340

2011.9.2 [Weighted]

Table 14. Consistency Errors on Form 50058/59
HUD QC FY 2010

Items	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	37	37	219	136	256	173
Household Composition	333	145	152	134	485	279
Net Family Assets and Income	106	78	2	2	108	79
Allowances and Adjusted Income	248	236	2	2	250	237
Family Rent and Subsidy Information	56	56	3	3	59	59

2011.9.2 [Weighted]

Table 15a. Verification of Form 50058/59 Rent Components
Third-Party Verbal or In-Writing, or Documentation, or EIV
HUD QC FY 2010

Rent Component	No Verification		Verification				Total	
	# of Cases (in 1,000)	Row % of Cases	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		
Earned Income	134	(11.2%)	322	(27.0%)	738	(61.8%)	1,193	(100.0%)
Pension, Etc.	101	(4.1%)	207	(8.4%)	2,138	(87.4%)	2,445	(100.0%)
Public Assistance	94	(18.2%)	44	(8.5%)	376	(73.3%)	513	(100.0%)
Other Income	217	(21.9%)	150	(15.1%)	624	(63.0%)	992	(100.0%)
Asset Income	39	(7.8%)	22	(4.3%)	445	(87.9%)	506	(100.0%)
Child Care Expense	13	(8.3%)	30	(19.1%)	114	(72.6%)	157	(100.0%)
Medical Expense	64	(6.7%)	160	(16.8%)	729	(76.5%)	953	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 15b. Verification of Form 50058/59 Rent Components
Third-Party In-Writing

Rent Component	No Verification		Verification				Total	
	# of Cases (in 1,000)	Row % of Cases	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		
Earned Income	541	(45.3%)	129	(10.8%)	524	(43.9%)	1,193	(100.0%)
Pension, Etc.	1,981	(81.0%)	29	(1.2%)	435	(17.8%)	2,445	(100.0%)
Public Assistance	228	(44.5%)	21	(4.1%)	264	(51.4%)	513	(100.0%)
Other Income	576	(58.1%)	73	(7.3%)	343	(34.6%)	992	(100.0%)
Asset Income	186	(36.8%)	8	(1.5%)	313	(61.7%)	506	(100.0%)
Child Care Expense	57	(36.3%)	17	(11.0%)	83	(52.7%)	157	(100.0%)
Medical Expense	674	(70.7%)	31	(3.3%)	248	(26.0%)	953	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 15c. Verification of Form 50058/59 Rent Components
Third-Party In-Writing or EIV

Rent Component	No Verification		Verification				Total	
	# of Cases (in 1,000)	Row % of Cases	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		
Earned Income	439	(36.8%)	211	(17.7%)	543	(45.5%)	1,193	(100.0%)
Pension, Etc.	1,007	(41.2%)	123	(5.0%)	1,315	(53.8%)	2,445	(100.0%)
Public Assistance	226	(44.1%)	21	(4.1%)	266	(51.7%)	513	(100.0%)
Other Income	571	(57.6%)	77	(7.8%)	343	(34.6%)	992	(100.0%)
Asset Income	186	(36.8%)	8	(1.5%)	313	(61.7%)	506	(100.0%)
Child Care Expense	57	(36.3%)	17	(11.0%)	83	(52.7%)	157	(100.0%)
Medical Expense	551	(57.8%)	61	(6.4%)	340	(35.7%)	953	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
 Table 15d. Verification of Form 50058/59 Rent Components
 Third-Party—Verbal

Rent Component	No Verification		Verification				Total	
	# of Cases (in 1,000)	Row % of Cases	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		
Earned Income	1,178	(98.7%)	8	(.7%)	8	(.6%)	1,193	(100.0%)
Pension, Etc.	2,440	(99.8%)			6	(.2%)	2,445	(100.0%)
Public Assistance	508	(99.0%)			5	(1.0%)	513	(100.0%)
Other Income	983	(99.2%)	3	(.3%)	6	(.6%)	992	(100.0%)
Asset Income	506	(100.0%)					506	(100.0%)
Child Care Expense	154	(97.7%)	2	(1.6%)	1	(.7%)	157	(100.0%)
Medical Expense	951	(99.8%)			1	(.2%)	953	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
 Table 15e. Verification of Form 50058/59 Rent Components
 Documentation

Rent Component	No Verification		Verification				Total	
	# of Cases (in 1,000)	Row % of Cases	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		
Earned Income	941	(78.9%)	79	(6.6%)	173	(14.5%)	1,193	(100.0%)
Pension, Etc.	1,709	(69.9%)	49	(2.0%)	688	(28.1%)	2,445	(100.0%)
Public Assistance	387	(75.4%)	22	(4.3%)	104	(20.3%)	513	(100.0%)
Other Income	669	(67.4%)	70	(7.1%)	253	(25.5%)	992	(100.0%)
Asset Income	404	(79.8%)	11	(2.2%)	91	(18.0%)	506	(100.0%)
Child Care Expense	117	(74.3%)	10	(6.6%)	30	(19.1%)	157	(100.0%)
Medical Expense	681	(71.5%)	46	(4.8%)	226	(23.7%)	953	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 15f. Verification of Form 50058/59 Rent Components
EIV

Rent Component	No Verification		Verification				Total	
	# of Cases (in 1,000)	Row % of Cases	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		
Earned Income	1,106	(92.7%)	69	(5.8%)	18	(1.5%)	1,193	(100.0%)
Pension, Etc.	1,569	(64.2%)	75	(3.1%)	801	(32.8%)	2,445	(100.0%)
Public Assistance	511	(99.6%)			2	(.4%)	513	(100.0%)
Other Income	987	(99.5%)	5	(.5%)			992	(100.0%)
Asset Income	506	(100.0%)					506	(100.0%)
Child Care Expense	157	(100.0%)					157	(100.0%)
Medical Expense	882	(92.6%)	20	(2.1%)	51	(5.4%)	953	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
 Table 15g. Verification of Form 50058/59 Rent Components
 Third-Party Verbal or In-Writing, Documentation, or EIV

Rent Component, by Program Type	No Verification		Verification				Total		
	# of Cases (in 1,000)	Row % of Cases	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			
Public Housing	Earned Income	42	(12.8%)	112	(34.4%)	172	(52.8%)	325	(100.0%)
	Pension, Etc.	14	(2.8%)	49	(9.7%)	437	(87.4%)	500	(100.0%)
	Public Assistance	13	(12.8%)	12	(11.4%)	78	(75.8%)	104	(100.0%)
	Other Income	44	(23.2%)	30	(15.7%)	115	(61.1%)	189	(100.0%)
	Asset Income	10	(12.7%)	2	(2.2%)	67	(85.1%)	78	(100.0%)
	Child Care Expense	5	(13.3%)	7	(18.0%)	27	(68.7%)	39	(100.0%)
	Medical Expense	24	(12.4%)	40	(21.1%)	126	(66.5%)	190	(100.0%)
	Earned Income	53	(9.1%)	165	(28.3%)	366	(62.6%)	584	(100.0%)
	Pension, Etc.	48	(4.6%)	79	(7.5%)	919	(87.9%)	1,045	(100.0%)
	Public Assistance	46	(15.1%)	24	(7.8%)	233	(77.1%)	303	(100.0%)
PHA-Administered Section 8	Other Income	103	(18.0%)	95	(16.5%)	377	(65.6%)	576	(100.0%)
	Asset Income	14	(9.4%)	9	(5.9%)	126	(84.7%)	148	(100.0%)
	Child Care Expense	6	(7.4%)	18	(21.7%)	60	(70.9%)	85	(100.0%)
	Medical Expense	20	(7.8%)	39	(14.9%)	200	(77.3%)	259	(100.0%)
	Earned Income	39	(13.7%)	44	(15.7%)	201	(70.6%)	284	(100.0%)
	Pension, Etc.	39	(4.3%)	79	(8.8%)	783	(86.9%)	901	(100.0%)
	Public Assistance	35	(32.4%)	8	(7.7%)	64	(60.0%)	107	(100.0%)
	Other Income	70	(30.9%)	25	(11.1%)	132	(58.0%)	227	(100.0%)
	Asset Income	16	(5.5%)	11	(4.1%)	253	(90.4%)	280	(100.0%)
	Child Care Expense	2	(4.8%)	5	(13.7%)	27	(81.5%)	33	(100.0%)
Medical Expense	21	(4.1%)	81	(16.1%)	402	(79.8%)	504	(100.0%)	

2011.9.2 [Weighted]

HUD QC FY 2010
Table 15h. Verification of Form 50058/59 Rent Components
Third-Party In-Writing

Rent Component, by Program Type	No Verification		Verification				Total		
	# of Cases (in 1,000)	Row % of Cases	Dollar Amount # of Cases (in 1,000)	Row % of Cases	Dollar Amount # of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	
									Dollar Amount Not Matched
Public Housing	Earned Income	155	(47.8%)	49	(15.0%)	121	(37.2%)	325	(100.0%)
	Pension, Etc.	417	(83.5%)	1	(.3%)	81	(16.2%)	500	(100.0%)
	Public Assistance	37	(35.9%)	7	(6.8%)	59	(57.3%)	104	(100.0%)
	Other Income	109	(57.8%)	15	(7.9%)	65	(34.3%)	189	(100.0%)
	Asset Income	29	(37.6%)	1	(1.2%)	48	(61.2%)	78	(100.0%)
	Child Care Expense	15	(37.9%)	2	(5.8%)	22	(56.2%)	39	(100.0%)
	Medical Expense	133	(69.9%)	11	(5.7%)	46	(24.4%)	190	(100.0%)
	Earned Income	288	(49.2%)	58	(9.9%)	238	(40.8%)	584	(100.0%)
	Pension, Etc.	815	(78.0%)	10	(1.0%)	220	(21.1%)	1,045	(100.0%)
	Public Assistance	138	(45.6%)	8	(2.5%)	157	(51.9%)	303	(100.0%)
PHA-Administered Section 8	Other Income	344	(59.7%)	40	(7.0%)	191	(33.3%)	576	(100.0%)
	Asset Income	77	(51.8%)			71	(48.2%)	148	(100.0%)
	Child Care Expense	31	(36.1%)	12	(14.2%)	42	(49.7%)	85	(100.0%)
	Medical Expense	177	(68.3%)	12	(4.7%)	70	(27.0%)	259	(100.0%)
	Earned Income	97	(34.3%)	22	(7.7%)	165	(58.0%)	284	(100.0%)
	Pension, Etc.	749	(83.2%)	18	(1.9%)	134	(14.9%)	901	(100.0%)
	Public Assistance	53	(49.7%)	7	(6.2%)	47	(44.1%)	107	(100.0%)
	Other Income	123	(54.0%)	18	(7.7%)	87	(38.2%)	227	(100.0%)
	Asset Income	80	(28.6%)	7	(2.3%)	193	(69.0%)	280	(100.0%)
	Child Care Expense	11	(34.9%)	3	(8.7%)	19	(56.4%)	33	(100.0%)
Medical Expense	364	(72.2%)	8	(1.6%)	132	(26.1%)	504	(100.0%)	

2011.9.2 [Weighted]

HUD QC FY 2010
 Table 15i. Verification of Form 50058/59 Rent Components
 Third-Party In-Writing

Rent Component, by Program Type	No Verification		Verification				Total		
	# of Cases (in 1,000)	Row % of Cases	Dollar Amount (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	
									Dollar Amount Not Matched
Public Housing	Earned Income	128	(39.4%)	71	(22.0%)	126	(38.7%)	325	(100.0%)
	Pension, Etc.	181	(36.3%)	26	(5.2%)	292	(58.5%)	500	(100.0%)
	Public Assistance	37	(35.9%)	7	(6.8%)	59	(57.3%)	104	(100.0%)
	Other Income	108	(57.2%)	16	(8.5%)	65	(34.3%)	189	(100.0%)
	Asset Income	29	(37.6%)	1	(1.2%)	48	(61.2%)	78	(100.0%)
	Child Care Expense	15	(37.9%)	2	(5.8%)	22	(56.2%)	39	(100.0%)
	Medical Expense	95	(49.7%)	21	(11.3%)	74	(39.0%)	190	(100.0%)
	Earned Income	226	(38.6%)	113	(19.3%)	246	(42.1%)	584	(100.0%)
	Pension, Etc.	380	(36.4%)	55	(5.2%)	611	(58.4%)	1,045	(100.0%)
	Public Assistance	136	(45.0%)	8	(2.5%)	159	(52.5%)	303	(100.0%)
PHA-Administered Section 8	Other Income	341	(59.2%)	44	(7.6%)	191	(33.3%)	576	(100.0%)
	Asset Income	77	(51.8%)			71	(48.2%)	148	(100.0%)
	Child Care Expense	31	(36.1%)	12	(14.2%)	42	(49.7%)	85	(100.0%)
	Medical Expense	153	(59.2%)	19	(7.5%)	86	(33.3%)	259	(100.0%)
	Earned Income	86	(30.1%)	27	(9.3%)	172	(60.5%)	284	(100.0%)
	Pension, Etc.	446	(49.5%)	42	(4.7%)	412	(45.7%)	901	(100.0%)
	Public Assistance	53	(49.7%)	7	(6.2%)	47	(44.1%)	107	(100.0%)
	Other Income	123	(54.0%)	18	(7.7%)	87	(38.2%)	227	(100.0%)
	Asset Income	80	(28.6%)	7	(2.3%)	193	(69.0%)	280	(100.0%)
	Child Care Expense	11	(34.9%)	3	(8.7%)	19	(56.4%)	33	(100.0%)
Medical Expense	303	(60.2%)	21	(4.1%)	180	(35.7%)	504	(100.0%)	

2011.9.2 [Weighted]

HUD QC FY 2010
**Table 15j. Verification of Form 50058/59 Rent Components
 Third-Party—Verbal**

Rent Component, by Program Type	No Verification		Verification				Total		
	# of Cases (in 1,000)	Row % of Cases	Dollar Amount # of Cases (in 1,000)	Row % of Cases	Dollar Amount Matched # of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases	
									Dollar Amount Not Matched
Public Housing	Earned Income	321	(98.8%)	3	(.9%)	1	(.3%)	325	(100.0%)
	Pension, Etc.	500	(100.0%)					500	(100.0%)
	Public Assistance	104	(100.0%)					104	(100.0%)
	Other Income	183	(97.1%)			6	(2.9%)	189	(100.0%)
	Asset Income	78	(100.0%)					78	(100.0%)
	Child Care Expense	38	(97.2%)			1	(2.8%)	39	(100.0%)
	Medical Expense	189	(99.2%)			1	(.8%)	190	(100.0%)
	Earned Income	576	(98.6%)	5	(.8%)	4	(.6%)	584	(100.0%)
	Pension, Etc.	1,043	(99.8%)			2	(.2%)	1,045	(100.0%)
	Public Assistance	298	(98.3%)			5	(1.7%)	303	(100.0%)
PHA-Administered Section 8	Other Income	573	(99.6%)	3	(.4%)			576	(100.0%)
	Asset Income	148	(100.0%)					148	(100.0%)
	Child Care Expense	83	(97.1%)	2	(2.9%)			85	(100.0%)
	Medical Expense	259	(100.0%)					259	(100.0%)
	Earned Income	281	(98.8%)			3	(1.2%)	284	(100.0%)
	Pension, Etc.	897	(99.6%)			4	(.4%)	901	(100.0%)
	Public Assistance	107	(100.0%)					107	(100.0%)
	Other Income	227	(100.0%)					227	(100.0%)
	Asset Income	280	(100.0%)					280	(100.0%)
	Child Care Expense	33	(100.0%)					33	(100.0%)
Medical Expense	504	(100.0%)					504	(100.0%)	
Owner-Administered									
2011.9.2 [Weighted]									

HUD QC FY 2010
 Table 15k. Verification of Form 50058/59 Rent Components
 Documentation

Rent Component, by Program Type	No Verification		Verification				Total		
	# of Cases (in 1,000)	Row % of Cases	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			
Public Housing	Earned Income	260	(80.0%)	27	(8.3%)	38	(11.7%)	325	(100.0%)
	Pension, Etc.	377	(75.4%)	18	(3.6%)	105	(21.0%)	500	(100.0%)
	Public Assistance	81	(78.3%)	5	(4.6%)	18	(17.1%)	104	(100.0%)
	Other Income	131	(69.5%)	14	(7.2%)	44	(23.2%)	189	(100.0%)
	Asset Income	62	(79.6%)	1	(.9%)	15	(19.5%)	78	(100.0%)
	Child Care Expense	31	(78.1%)	5	(12.2%)	4	(9.7%)	39	(100.0%)
	Medical Expense	144	(75.7%)	14	(7.3%)	32	(17.0%)	190	(100.0%)
	Earned Income	439	(75.2%)	35	(6.0%)	110	(18.8%)	584	(100.0%)
	Pension, Etc.	747	(71.5%)	18	(1.7%)	280	(26.8%)	1,045	(100.0%)
	Public Assistance	217	(71.8%)	16	(5.3%)	69	(22.9%)	303	(100.0%)
PHA-Administered Section 8	Other Income	358	(62.2%)	49	(8.5%)	169	(29.4%)	576	(100.0%)
	Asset Income	101	(68.0%)	9	(5.9%)	39	(26.0%)	148	(100.0%)
	Child Care Expense	63	(74.2%)	4	(4.6%)	18	(21.2%)	85	(100.0%)
	Medical Expense	177	(68.6%)	8	(3.0%)	73	(28.4%)	259	(100.0%)
	Earned Income	241	(85.1%)	17	(6.0%)	25	(9.0%)	284	(100.0%)
	Pension, Etc.	585	(64.9%)	13	(1.4%)	303	(33.6%)	901	(100.0%)
	Public Assistance	89	(82.7%)	2	(1.5%)	17	(15.8%)	107	(100.0%)
	Other Income	180	(79.1%)	8	(3.3%)	40	(17.6%)	227	(100.0%)
	Asset Income	241	(86.1%)	2	(.7%)	37	(13.3%)	280	(100.0%)
	Child Care Expense	23	(69.9%)	2	(5.0%)	8	(25.0%)	33	(100.0%)
Medical Expense	360	(71.4%)	24	(4.8%)	120	(23.8%)	504	(100.0%)	

2011.9.2 [Weighted]

HUD QC FY 2010
 Table 15i. Verification of Form 50058/59 Rent Components
 EIV

Rent Component, by Program Type	No Verification		Verification				Total			
	# of Cases (in 1,000)	Row % of Cases	Dollar Amount # of Cases (in 1,000)	Row % of Cases	Dollar Amount # of Cases (in 1,000)	Row % of Cases	# of Cases (in 1,000)	Row % of Cases		
									Dollar Amount Not Matched	Dollar Amount Matched
Public Housing	Earned Income	304	(93.7%)	17	(5.2%)	3	(1.1%)	325	(100.0%)	
	Pension, Etc.	288	(57.6%)	18	(3.7%)	193	(38.7%)	500	(100.0%)	
	Public Assistance	104	(100.0%)					104	(100.0%)	
	Other Income	188	(99.4%)	1	(.6%)			189	(100.0%)	
	Asset Income	78	(100.0%)					78	(100.0%)	
	Child Care Expense	39	(100.0%)					39	(100.0%)	
	Medical Expense	161	(84.8%)	11	(5.6%)	18	(9.6%)	190	(100.0%)	
	Earned Income	528	(90.4%)	49	(8.4%)	7	(1.2%)	584	(100.0%)	
	Pension, Etc.	643	(61.5%)	37	(3.6%)	365	(34.9%)	1,045	(100.0%)	
	Public Assistance	301	(99.3%)			2	(.7%)	303	(100.0%)	
PHA-Administered Section 8	Other Income	572	(99.4%)	3	(.6%)			576	(100.0%)	
	Asset Income	148	(100.0%)					148	(100.0%)	
	Child Care Expense	85	(100.0%)					85	(100.0%)	
	Medical Expense	243	(94.2%)	4	(1.6%)	11	(4.3%)	259	(100.0%)	
	Earned Income	273	(96.3%)	3	(1.1%)	7	(2.5%)	284	(100.0%)	
	Pension, Etc.	638	(70.8%)	20	(2.2%)	243	(27.0%)	901	(100.0%)	
	Public Assistance	107	(100.0%)					107	(100.0%)	
	Other Income	227	(100.0%)					227	(100.0%)	
	Asset Income	280	(100.0%)					280	(100.0%)	
	Child Care Expense	33	(100.0%)					33	(100.0%)	
Medical Expense	477	(94.7%)			5	(1.0%)	22	(4.3%)	504	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 16a. QC Rent Component for Household with QC Rent Error (>\$5)

Rent Component	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	2,423 (86.1%)	1,245 (94.3%)	3,668 (88.8%)		
	w/Error	390 (13.9%)	75 (5.7%)	465 (11.2%)		
Pensions, Etc.	No Error	2,535 (90.1%)	1,149 (87.1%)	3,685 (89.1%)		
	w/Error	278 (9.9%)	171 (12.9%)	449 (10.9%)		
Public Assistance	No Error	2,725 (96.9%)	1,283 (97.2%)	4,008 (97.0%)		
	w/Error	88 (3.1%)	37 (2.8%)	125 (3.0%)		
Other Income	No Error	2,568 (91.3%)	1,267 (96.0%)	3,835 (92.8%)		
	w/Error	245 (8.7%)	53 (4.0%)	298 (7.2%)		
Asset Income	No Error	2,694 (95.8%)	1,247 (94.5%)	3,941 (95.3%)		
	w/Error	119 (4.2%)	73 (5.5%)	193 (4.7%)		
Child Care Expense	No Error	2,753 (97.9%)	1,311 (99.3%)	4,064 (98.3%)		
	w/Error	60 (2.1%)	9 (.7%)	69 (1.7%)		
Disability Expense	No Error	2,809 (99.8%)	1,316 (99.7%)	4,125 (99.8%)		
	w/Error	4 (.2%)	4 (.3%)	8 (.2%)		
Medical Expense	No Error	2,515 (89.4%)	1,120 (84.9%)	3,636 (88.0%)		
	w/Error	298 (10.6%)	200 (15.1%)	498 (12.0%)		
All Components	No Error	1,875 (66.7%)	951 (72.1%)	2,827 (68.4%)		
	w/Error	938 (33.3%)	369 (27.9%)	1,306 (31.6%)		
Total	2,813	(100.0%)	1,320	(100.0%)	4,133	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 16b. QC Error Cases with Missing Verification in Tenant File

Rent Component	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	105 (26.8%)	22 (30.0%)	127 (27.4%)		
	Not Verified	285 (73.2%)	52 (70.0%)	338 (72.6%)		
Pension, Etc.	Verified	45 (16.1%)	24 (14.2%)	69 (15.4%)		
	Not Verified	233 (83.9%)	146 (85.8%)	380 (84.6%)		
Public Assistance	Verified	18 (20.0%)	5 (13.1%)	22 (17.9%)		
	Not Verified	70 (80.0%)	32 (86.9%)	103 (82.1%)		
Other Income	Verified	73 (29.7%)	11 (21.6%)	84 (28.3%)		
	Not Verified	172 (70.3%)	42 (78.4%)	214 (71.7%)		
Asset Income	Verified	25 (20.7%)	20 (27.2%)	45 (23.2%)		
	Not Verified	95 (79.3%)	53 (72.8%)	148 (76.8%)		
Child Care Expense	Verified	18 (30.5%)	1 (13.9%)	20 (28.3%)		
	Not Verified	42 (69.5%)	8 (86.1%)	50 (71.7%)		
Disability Expense	Not Verified	4 (100.0%)	4 (100.0%)	8 (100.0%)		
	Verified	22 (7.2%)	23 (11.3%)	44 (8.9%)		
Medical Expense	Not Verified	276 (92.8%)	177 (88.7%)	453 (91.1%)		
	Verified					

2011.9.2 [Weighted]

HUD QC FY 2010
Table 17. Administrative Error: Number and 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

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	124	(49.2%)	31.31	887	(64.6%)	40.81
No Transcription Error	128	(50.8%)	14.24	485	(35.4%)	37.09
Consistency Error	72	(28.5%)	55.21	296	(21.6%)	34.65
No Consistency Error	180	(71.5%)	9.62	1,076	(78.4%)	40.83
Allowances Calculation Error	19	(7.5%)	47.08	60	(4.3%)	48.28
No Allowances Calculation Error	233	(92.5%)	20.66	1,312	(95.7%)	39.10
Income Calculation Error	14	(5.6%)	37.61	39	(2.8%)	63.81
No Income Calculation Error	238	(94.4%)	21.75	1,333	(97.2%)	38.79
Other Calculation Error	25	(9.8%)	53.14	87	(6.3%)	65.54
No Other Calculation Error	227	(90.2%)	19.33	1,285	(93.7%)	37.73
Overdue Recertification	7	(3.0%)	33.15	31	(2.2%)	121.63
On-time Recertification	221	(87.7%)	26.20	1,182	(86.2%)	37.47
Certification	23	(9.3%)	37.51	159	(11.6%)	38.73
Any Admin/proc Error	154	(61.1%)	30.99	995	(72.5%)	39.75
No Admin/proc Error	98	(38.9%)	9.54	377	(27.5%)	38.82
Total Households	252	(100.0%)	22.64	1,372	(100.0%)	39.50

2011.9.2 [Weighted]

HUD QC FY 2010
Table 18. Administrative Error: Number and Percent of Households, Average Dollars in Error
for All Households, by Administrative Error Type

Error Type	Gross QC Rent Error		Net QC Rent Error	
	# of Households	% of Households	# of Households	% of Households
Transcription Error	1,586	(38.4%)	1,586	(38.4%)
No Transcription Error	2,548	(61.6%)	2,548	(61.6%)
Consistency Error	734	(17.8%)	734	(17.8%)
No Consistency Error	3,399	(82.2%)	3,399	(82.2%)
Allowances Calculation Error	107	(2.6%)	107	(2.6%)
No Allowances Calculation Error	4,026	(97.4%)	4,026	(97.4%)
Income Calculation Error	81	(2.0%)	81	(2.0%)
No Income Calculation Error	4,052	(98.0%)	4,052	(98.0%)
Other Calculation Error	196	(4.7%)	196	(4.7%)
No Other Calculation Error	3,938	(95.3%)	3,938	(95.3%)
Overdue Recertification	45	(1.1%)	45	(1.1%)
On-time Recertification	3,575	(86.5%)	3,575	(86.5%)
Certification	513	(12.4%)	513	(12.4%)
Any Admin/proc Error	2,050	(49.6%)	2,050	(49.6%)
No Admin/proc Error	2,083	(50.4%)	2,083	(50.4%)
Total	4,133	(100.0%)	4,133	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 19. Occupancy Standards on Form 50058/59

Number of Bedrooms, by Occupancy Standard	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			7	(18.7%)			7	(4.2%)
1	3	(1.0%)	11	(2.4%)			14	(.9%)
2	6	(2.0%)	12	(1.6%)	3	(.9%)	21	(1.5%)
3	5	(2.3%)	4	(.8%)	2	(1.2%)	11	(1.3%)
All Units	14	(1.5%)	33	(1.8%)	5	(.3%)	52	(1.3%)
Correct								
0	72	(100.0%)	29	(81.3%)	52	(100.0%)	153	(95.8%)
1	304	(99.0%)	431	(97.6%)	776	(100.0%)	1,511	(99.1%)
2	225	(77.9%)	536	(71.7%)	247	(77.3%)	1,008	(74.3%)
3	188	(82.1%)	418	(81.7%)	118	(87.0%)	725	(82.6%)
4	31	(60.2%)	63	(60.9%)	25	(71.3%)	118	(62.6%)
5+			5	(52.0%)			5	(32.9%)
All Units	820	(86.0%)	1,483	(80.1%)	1,218	(92.4%)	3,521	(85.4%)
Over-Housed								
2	58	(20.1%)	201	(26.8%)	69	(21.7%)	328	(24.2%)
3	36	(15.6%)	90	(17.5%)	16	(11.8%)	142	(16.1%)
4	20	(39.8%)	40	(39.1%)	10	(28.7%)	71	(37.4%)
5+	6	(100.0%)	5	(48.0%)			10	(67.1%)
All Units	120	(12.5%)	335	(18.1%)	95	(7.2%)	550	(13.3%)

2011.9.2 [Weighted]

HUD QC FY 2010
Table 19a. Frequency & Percent of All Households
by Number of Bedrooms and Number of Household Members

Number of Bedrooms	Number of Household Members																		
	1		2		3		4		5		6		7		8		9		
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
0	153	95.8%	4	2.4%	3	1.8%													
1	1411	92.5%	100	6.6%	9	.6%	2	.1%	2	.2%									
2	328	24.2%	622	45.8%	297	21.9%	89	6.6%	19	1.4%	2	.1%							
3	45	5.1%	96	11.0%	329	37.5%	242	27.6%	112	12.8%	43	4.8%	7	.8%	4	.5%			
4	2	1.3%	6	3.3%	20	10.8%	41	21.9%	49	25.8%	36	18.9%	25	13.5%	8	4.4%			
5+					1	6.8%	4	29.0%	1	8.3%	4	22.9%	2	15.2%	1	7.6%	2	10.1%	

2011.9.2 [Weighted]

Source Tables Based on Tenant File Data

HUD QC FY 2010 [Tenant File]
Table 2. Percent of Households, by Payment Type and Program Type

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	86	(9.1%)	(24.8%)	780	(81.6%)	(23.5%)	89	(9.3%)	(19.2%)	955	(100.0%)
	163	(8.8%)	(46.7%)	1,436	(77.3%)	(43.2%)	259	(14.0%)	(56.0%)	1,858	(100.0%)	(45.0%)
Total	249	(8.9%)	(71.6%)	2,216	(78.8%)	(66.7%)	348	(12.4%)	(75.2%)	2,813	(100.0%)	(68.1%)
Owner-Administered	99	(7.5%)	(28.4%)	1,106	(83.8%)	(33.3%)	115	(8.7%)	(24.8%)	1,320	(100.0%)	(31.9%)
Total	99	(7.5%)	(28.4%)	1,106	(83.8%)	(33.3%)	115	(8.7%)	(24.8%)	1,320	(100.0%)	(31.9%)
Total	348	(8.4%)	(100.0%)	3,322	(80.4%)	(100.0%)	463	(11.2%)	(100.0%)	4,133	(100.0%)	(100.0%)

2011.9.2 [Weighted]

HUD QC FY 2010 [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)

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	116	(12.1%)	(23.0%)	688	(72.0%)	(23.7%)	152	(15.9%)	(21.0%)	955	(100.0%)
	249	(13.4%)	(49.4%)	1,221	(65.7%)	(42.0%)	387	(20.8%)	(53.6%)	1,858	(100.0%)	(45.0%)
Total	365	(13.0%)	(72.4%)	1,909	(67.9%)	(65.7%)	539	(19.2%)	(74.6%)	2,813	(100.0%)	(68.1%)
Owner-Administered	139	(10.6%)	(27.6%)	997	(75.6%)	(34.3%)	183	(13.9%)	(25.4%)	1,320	(100.0%)	(31.9%)
Total	139	(10.6%)	(27.6%)	997	(75.6%)	(34.3%)	183	(13.9%)	(25.4%)	1,320	(100.0%)	(31.9%)
Total	505	(12.2%)	(100.0%)	2,906	(70.3%)	(100.0%)	722	(17.5%)	(100.0%)	4,133	(100.0%)	(100.0%)

2011.9.2 [Weighted]

Note: These tables reflect analysis using only the information found in the tenant file. The analysis does not include income and expense items identified during the household interview or verified by the contractor through third-party sources. The term DC Rent (instead of QC Rent) indicates the rent was calculated using only documents found in the tenant file.

HUD QC FY 2010 [Tenant File]
Table 3. Dollar Rent Error, by Program Type

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	955	(23.1%)	222,362	232.77	955	(23.1%)	219,032	229.28	955	(23.1%)	12,386	12.97
	1,858	(45.0%)	390,598	210.23	1,858	(45.0%)	380,468	204.77	1,858	(45.0%)	25,230	13.58
Owner-Administered	2,813	(68.1%)	612,960	217.88	2,813	(68.1%)	599,500	213.10	2,813	(68.1%)	37,616	13.37
	1,320	(31.9%)	262,234	198.66	1,320	(31.9%)	259,264	196.41	1,320	(31.9%)	12,973	9.83
	1,320	(31.9%)	262,234	198.66	1,320	(31.9%)	259,264	196.41	1,320	(31.9%)	12,973	9.83
Total	4,133	(100.0%)	875,194	211.74	4,133	(100.0%)	858,764	207.77	4,133	(100.0%)	50,589	12.24

2011.9.2 [Weighted]

HUD QC FY 2010 [Tenant File]
Table 4. Dollar Error Amount, by Payment Type and Program Type

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	86	(24.8%)	4,522	52.30	89	(19.2%)	7,864	88.53	955	(23.1%)	219,032	229.28
	163	(46.7%)	7,566	46.49	259	(56.0%)	17,664	68.11	1,858	(45.0%)	380,468	204.77
Owner-Administered	249	(71.6%)	12,087	48.50	348	(75.2%)	25,529	73.32	2,813	(68.1%)	599,500	213.10
	99	(28.4%)	5,028	50.77	115	(24.8%)	7,944	69.12	1,320	(31.9%)	259,264	196.41
	99	(28.4%)	5,028	50.77	115	(24.8%)	7,944	69.12	1,320	(31.9%)	259,264	196.41
Total	348	(100.0%)	17,116	49.15	463	(100.0%)	33,473	72.28	4,133	(100.0%)	858,764	207.77

2011.9.2 [Weighted]

Note: These tables reflect analysis using only the information found in the tenant file. The analysis does not include income and expense items identified during the household interview or verified by the contractor through third-party sources. The term DC Rent (instead of QC Rent) indicates the rent was calculated using only documents found in the tenant file.

HUD QC FY 2010 [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)

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	(23.0%)	4,591	39.62	152	(21.0%)	7,975	52.63	955	(23.1%)	219,032	229.28
	Section 8	(49.4%)	7,726	30.97	387	(53.6%)	17,856	46.09	1,858	(45.0%)	380,468	204.77
	Total	(72.4%)	12,317	33.71	539	(74.6%)	25,831	47.93	2,813	(68.1%)	599,500	213.10
Owner-Administered	Owner-Administered	(27.6%)	5,137	36.86	183	(25.4%)	8,107	44.22	1,320	(31.9%)	259,264	196.41
	Total	(27.6%)	5,137	36.86	183	(25.4%)	8,107	44.22	1,320	(31.9%)	259,264	196.41
Total	505	(100.0%)	17,454	34.58	722	(100.0%)	33,937	46.99	4,133	(100.0%)	858,764	207.77

2011.9.2 [Weighted]

HUD QC FY 2010 [Tenant File]
Table 5. Gross and Net Rent Error, by Program Type

Program Type	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	(23.1%)	12,386	12.97	955	(23.1%)	3,343	3.50	955	(23.1%)	219,032	229.28
	Section 8	(45.0%)	25,230	13.58	1,858	(45.0%)	10,099	5.44	1,858	(45.0%)	380,468	204.77
	Total	(68.1%)	37,616	13.37	2,813	(68.1%)	13,441	4.78	2,813	(68.1%)	599,500	213.10
Owner-Administered	Owner-Administered	(31.9%)	12,973	9.83	1,320	(31.9%)	2,916	2.21	1,320	(31.9%)	259,264	196.41
	Total	(31.9%)	12,973	9.83	1,320	(31.9%)	2,916	2.21	1,320	(31.9%)	259,264	196.41
Total	4,133	(100.0%)	50,589	12.24	4,133	(100.0%)	16,358	3.96	4,133	(100.0%)	858,764	207.77

2011.9.2 [Weighted]

Note: These tables reflect analysis using only the information found in the tenant file. The analysis does not include income and expense items identified during the household interview or verified by the contractor through third-party sources. The term DC Rent (instead of QC Rent) indicates the rent was calculated using only documents found in the tenant file.

HUD QC FY 2010 [Tenant File]
Table 5(S). Gross and Net Rent Error, by Program Type
 (Proper Payment Based on Exact Match of Actual and QC Rent)

Program Type	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)
PHA-Administered	Public Housing	955 (23.1%)	12,567	13.15	955 (23.1%)	3,384	3.54	955 (23.1%)	219,032	229.28	
	Section 8	1,858 (45.0%)	25,581	13.77	1,858 (45.0%)	10,130	5.45	1,858 (45.0%)	380,468	204.77	
	Total	2,813 (68.1%)	38,148	13.56	2,813 (68.1%)	13,514	4.80	2,813 (68.1%)	599,500	213.10	
Owner-Administered	Owner-Administered	1,320 (31.9%)	13,243	10.03	1,320 (31.9%)	2,970	2.25	1,320 (31.9%)	259,264	196.41	
	Total	1,320 (31.9%)	13,243	10.03	1,320 (31.9%)	2,970	2.25	1,320 (31.9%)	259,264	196.41	
Total	4,133 (100.0%)	51,391	12.43	4,133 (100.0%)	16,484	3.99	4,133 (100.0%)	858,764	207.77		

2011.9.2 [Weighted]

Note: This table reflects analysis using only the information found in the tenant file. The analysis does not include income and expense items identified during the household interview or verified by the contractor through third-party sources. The term DC Rent (instead of QC Rent) indicates the rent was calculated using only documents found in the tenant file.

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	<ul style="list-style-type: none"> • 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
8n. Medical/Disability Assistance Allowance	<ul style="list-style-type: none"> • 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)

50058 Item		Error
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	<ul style="list-style-type: none"> • If Program (1c) = P: <ul style="list-style-type: none"> ▪ TTP (10a), must be completed ▪ Flat Rent (10b), or Tenant Rent (10f), or Mixed Family Tenant Rent (10s) must be completed ▪ Sections 11 through 14 must be blank • If Program (1c) = VO or C: <ul style="list-style-type: none"> ▪ Sections 11 or 12 must be completed ▪ Tenant Rent (11s or 12k), or Mixed Family Tenant Rent (11ak, or 12 ai) must be completed ▪ Sections 10, 13, and 14 must be blank • If Program (1c) = MR: <ul style="list-style-type: none"> ▪ 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

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	Should not be greater than the total number of members listed in item 38 (Family Member Number)
78.	Member No.—Asset Info	
Allowances and Adjusted Income		
100.	Dependent Allowance	Must be completed if Number of Dependents (58) is greater than 0
101.	Child Care Expense (work)	Should only be completed if any member is less than 13 years old
102.	Child Care Expense (school)	
105.	Disability Allowance	<ul style="list-style-type: none"> • 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

50059 Item	Error
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

50058—Calculation Errors

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

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

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

50059—Calculation Errors

50059 Item	Error Calculation
Household Composition	
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) 102. Child Care Expense (school)	Must be 0 or blank, if no household member under age 13

50059 Item	Error Calculation
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
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 \$25 (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 2010 study. Sections in the PSQ included staffing topics, (re)certification practices, verification processes, automation, and quality control.

A. Methodology

In FY 2010, the PSQ was reorganized and expanded. New open-ended questions were added to gain PHA/project perspectives from the field regarding best practices in preventing and reducing error. In addition, the PSQ was administered as a web survey using a survey package called Select Survey. PHA/projects were contacted by email in January 2011 with instructions on how to access and complete the survey. Reminder emails were sent and phone calls were made by ICF Macro staff until all questionnaires were received. The overall response to the revised web-based approach for implementing the survey was very positive. PHA/projects responded more quickly, and the need for data entry was eliminated. Several projects did request an electronic or hard copy be sent to them. Overall, ICF Macro's efforts led to a response rate of 100 percent, with all projects responding. As PSQs were completed, ICF Macro staff investigated the data to confirm the completeness and validity of responses. PSQs with questionable responses or skip patterns were individually investigated and all of the data issues were resolved. Lastly, ICF Macro analyzed the data using SPSS 17.

B. Results

The results are presented in five sections.

1. **PHA/Project Staffing Topics:** Includes the number and types of staff, staff caseload, staff turnover, minimum education, training and experience requirements for new staff, and staff development and training.
2. **(Re)certification Practices:** Includes timing, methods, tools and other issues related to the (re)certification process.
3. **Verification Processes:** Includes frequency, problems and measures taken to overcome the problems associated with the verification process.
4. **Use of Automation:** Includes topics on the capabilities of the software and utilization of computer tools by the PHA/projects.
5. **Quality Control Issues:** Includes various aspects of errors, measures the PHA/projects took to reduce errors, and PHA/project staff suggestions regarding ways to reduce errors in the (re)certification process. Various aspects of errors include prevalence of various kinds of errors, causes of those errors and characteristics of households that were more likely to have errors. Measures taken to reduce errors include strategies used to address various

causes of errors, methods used to clarify and implement HUD policies, types of reviews conducted to identify and rectify errors, methods used to select cases for review, frequency of review, and tools and techniques used to monitor the (re)certification process.

1. PHA/Project Staffing Topics

Types, Numbers and Caseload of Staff

As of FY 2008, the study has attempted to distinguish the number of staff that work on the specific project compared to the number of staff that the entire PHA/project employs. In FY 2010, the average Public Housing project had about 13 employees, including full-time, part-time, and contractual. PHA-Administered Section 8 projects had an average of 25 employees, and Owner-Administered projects had the lowest average number of staff at about 6 employees.

On average, 247 cases were assigned to each (re)certification staff member across all three program types over a 12-month period. (Re)certification staffs are those who interview the tenants, gather information from them, calculate rents, track verifications, and supervise other staff in performing move-in certifications and annual (re)certifications. PHA-Administered Section 8 projects had the highest average caseload at 342 households per staff person, Owner-Administered projects had the smallest average with 105 cases, and Public Housing projects were in the middle with on average 279 cases per staff member.

New Staff, Experienced Staff and Staff Turnover

The PSQ collected information about the number of new staff assigned to conduct (re)certifications. New staff was defined as staff that was newly hired to conduct (re)certifications in the past 12 months, or existing staff that were reassigned to (re)certification tasks in the past 12 months. Forty one percentage of the PHA/projects indicated that they assigned new staff to the (re)certification process. The average number of new staff within those PHA/projects was about 3 staff. Ninety eight percentage of PHA/projects had experienced (re)certification staff. The average number of experienced staff per project assigned to conduct (re)certifications was about 5. In FY 2010, about 34 percent of all PHA/projects in the study indicated that they had at least one staff member leave in the past 12 months. Of those 34 percent of the PHA/projects, the average number of (re)certification staff that left the PHA/project in the past 12 months was 2. These numbers indicate that, on average about three new (re)certification staff per PHA/project were assigned to conduct (re)certifications, implying that PHA/projects did not fully replace the staff who had left. Exhibit E-1a shows detail regarding staff turnover, and the number of new and experienced staff, by program type.

Exhibit E-1a
Average Number of New and Experienced Staff, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Average number of new staff assigned to conduct (re)certifications	1.6	5.5	1.4	2.9
Average number of experienced staff assigned to conduct (re)certifications	2.9	12.5	2.1	5.1
Average number of (re)certification staff who had left the PHA/project	2.0	3.7	1.3	2.4

Note: Averages were calculated based on the number of PHA/projects that had responded to the specific items.

The PHA/projects that had staff turnover in the past 12 months also provided reasons for their staff leaving their PHA/projects. Most of them provided a single reason for staff turnover, usually because there was only one staff that left over the past 12 months. But there were some projects that had multiple staff turnovers and therefore provided multiple reasons. The most common reason for leaving was resignation due to better opportunity, career change or relocation (35%). Twenty three percent of the PHA/projects reported they had staff turnover due to work performance related termination. Interestingly, only 15 percent of the Public Housing projects had work performance related termination as compared to over 26 percent in both PHA-Administered Section-8 and Owner-Administered projects. Exhibit E-1b includes all the reasons provided by the 182 projects with staff turnover.

Exhibit E-1b
Reasons for Staff Turnover, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Resignation due to better opportunity, career changes or relocation	26.2%	41.5%	38.5%	35.2%
Termination or Work Performance related	15.4%	26.2%	26.9%	22.5%
Retirement	7.7%	27.7%	9.6%	15.4%
Promotion	18.5%	9.2%	11.5%	13.2%
Transfer to a different housing agency	23.1%	3.1%	1.9%	9.9%
Resignation due to other personal reasons	6.2%	13.8%	7.7%	9.3%
Resignation due to work related reasons/stress	6.2%	12.3%	5.8%	8.2%
Transfer to a different department within the same housing agency	12.3%	9.2%	0.0%	7.7%

Note: Averages were calculated based on the 182 PHA/projects that had staff turnover.

Education, Training, and Experience Requirements for Staff Working with (Re)certifications

The minimum education requirements for employees working with (re)certifications remained little changed from the previous year, with a majority of PHA/projects at 66 percent requiring at least a high school diploma or equivalent when hiring new staff who will be working with (re)certifications. Overall, only about 4 percent of PHAs/projects did not require some education, down from 5 percent in FY 2009. This year, the percentage of PHA/projects requiring a 4-year college degree or equivalent decreased to 9 percent, compared with 13 percent in FY 2009, 14 percent in FY 2008, and 12 percent in FY 2007. Compared to Public Housing and PHA-Administered Section 8 projects, more Owner-Administered projects were more likely not to require any education at about 7 percent. Owner-Administered projects were also likely to require a 4-year college degree (6%). Exhibit E-1c presents the minimum education requirements for new employees, by program type.

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

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
No minimum requirements	1.5%	2.1%	7.0%	3.7%
High school/GED	65.7%	62.7%	68.0%	65.7%
2-year college degree or commensurate experience	19.4%	15.5%	12.0%	15.7%
Bachelor's Degree	10.0%	11.3%	5.5%	8.7%

In addition to minimum education requirements, PHAs/projects also had other requirements for employees working with (re)certifications. These requirements included background checks, housing-related training and experience, and other basic skills.

Seventy-one percent of Public Housing projects, 77 percent of PHA-Administered Section 8 projects and 81 percent of Owner-Administered projects required background check. The overall percentage of PHA/projects that required background checks remained relatively constant, increasing only slightly to 76 percent from 75 percent in FY 2009.

However, the percentage of PHA/projects requiring special housing related training and experience in general increased in FY 2010. Whether this increase is due to an increase in PHA/project requirements, or the change in question organization within the survey remains to be determined. Details regarding the housing related skills and experience are presented in Exhibit E-1d. The sharpest contrast in these housing related skills and experience between program types was regarding special housing-related certifications which 69 percent of the Owner-Administered projects required of their new employees, compared to 26 percent of PHA-Administered Section 8 projects and 39 percent of Public Housing projects.

Exhibit E-1d
Housing-Related Training and Experience Requirements for Employees
Working with (Re)certifications, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Other housing-related experience	60.7%	52.8%	64.5%	60.0%
Special housing-related training	55.7%	42.3%	46.5%	48.8%
Special housing-related certification	39.3%	26.1%	68.5%	46.6%

The basic skills that over 80 percent of the PHA/projects required for employees working with (re)certifications were: customer service and communication skills, computer skills, math and logic skills. Other basic skills that PHA/projects were likely to require were case management skills and foreign language/fluency skills. The biggest differences in basic skill requirements between program types were case management skills, which 63 percent of PHA-Administered Section 8 projects required, compared to 35 percent of Owner-Administered projects. Exhibit E-1e lists the other basic skills required by PHA/projects of their new (re)certification staff.

Exhibit E-1e
Other Basic Skills Required for Employees
Working with (Re)certifications, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Customer service and communication skills	95.0%	92.3%	92.0%	93.2%
Computer skills	91.0%	89.4%	95.5%	92.3%
Basic math or logic skills	91.5%	89.4%	94.5%	92.1%
Administrative or clerical skills	86.1%	70.4%	88.5%	82.9%
Case management skills	49.8%	62.7%	34.5%	47.5%
Foreign language/fluency skills	11.9%	8.5%	11.0%	10.7%

Staff Development and Training

The PSQ also collected information about the amount and type of training provided to new and experienced staff. The average number of hours of training received by each newly hired (re)certification staff stayed relatively the same at about 101 hours on average compared to 98 hours on average in FY 2009. They trained their re-assigned staff and their experienced staff about the same at 69 hours, on average. In the past 12 months, Public Housing projects trained their new, re-assigned, and experienced (re)certification staff the most. Exhibit E-1f provides the details regarding the average hours of training received by various staff categories.

Exhibit E-1f
Average Number of Training Hours, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Average number of training hours received by each new (re)certification staff	125.7	97.0	70.3	100.5
Average number of training hours received by each staff re-assigned within the last 12 months	109.1	42.5	49.8	69.1
Average number of training hours received by each experienced (re)certification staff	116.2	35.6	49.2	68.9

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

Of the various methods used to train new (re)certification staff, the three most frequently used methods were: working with experienced staff one-on-one while conducting (re)certifications (90%), self training through manuals, videos, or informal questions (86%), and training sessions with the supervisor (65%). While these top three methods have remained unchanged since FY 2007, changes to the scale of the question yield percentages that are not comparable from year to year. Exhibit E-1g provides details regarding methods most frequently used to train new (re)certification staff.

Exhibit E-1g
Three Methods Most Frequently Used to Train for New (Re)certification Staff, by Program Type

Training Methods Frequently or Always Used by PHA/Projects	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
New staff worked one-on-one with experienced staff during the conduct of (re)certifications	83.7%	93.6%	92.3%	89.6%
Supervisor/senior staff held training sessions with new staff explaining procedures	75.0%	96.2%	87.7%	86.0%
Read HUD/PHA/owner manual, watched videos, or asked informal questions	60.0%	67.6%	69.3%	65.3%

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

The three methods most frequently used to train experienced (re)certification staff were the same as methods used for new (re)certification staff. However, the most popular method used to train experienced staff was self training through manuals, videos, or informal questions (93%), followed by working one-on-one with experienced staff (83%), and lastly attending supervisor/senior staff held training sessions (68%). PHA/projects were also more likely to use these training methods on experienced staff than on new staff. Exhibit E-1h provides details regarding methods most frequently used to train experienced (re)certification staff.

Exhibit E-1h
Methods for Training Experienced (Re)certification Staff, by Program Type

PHA/Projects Frequently or Always	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Read HUD/PHA/owner manual, watched videos, or asked informal questions	88.3%	93.6%	96.4%	92.6%
Had experienced staff work one-on-one with other experienced staff to conduct (re)certifications	81.2%	85.1%	84.1%	83.3%
Had supervisor/senior staff hold training sessions with experienced staff explaining procedures	67.4%	63.1%	72.6%	68.2%

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

In the past 12 months, 86 percent of PHA/projects frequently trained their experienced staff on new policies, new procedures, and new quality control operations. Fewer Public Housing projects were likely to frequently train their experienced staff (83%) than Owner-Administered projects (91%) or PHA-Administered Section 8 projects (85%).

In addition to information regarding the types and amount of training provided to the (re)certification staff, the PSQ also collected information on the PHA/project staff's view on the skills or trainings that they think are most important for a staff conducting (re)certification. Of the 132 PHA/projects that had suggestions, the most common response was that their staff needed to be able to understand and use EIV (71%), followed by the need to understand general HUD and PHA policies (49%). Exhibit E-1i provides the details about the topics that the PHA/project staff think their (re)certification staff should be skilled at.

Exhibit E-1i
Training and Skills Suggested for (Re)certification Staff, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
EIV Training	76.0%	63.3%	69.2%	70.5%
PHA and HUD policies—General	38.0%	50.0%	57.7%	48.5%
Rent Calculation including income, expense calculations	32.0%	43.3%	11.5%	26.5%
Housing Occupancy Specialist Training	26.0%	10.0%	9.6%	15.9%
Verification Process	14.0%	23.3%	9.6%	14.4%
Communication, Language, Interview Skills	24.0%	6.7%	7.7%	13.6%
Customer Service - people skills	16.0%	10.0%	5.8%	10.6%
Computer—HUD related software skills—Rent calculation, PIC, etc	14.0%	6.7%	7.7%	9.8%
General Office Skills—Detail oriented, Organizational skill, Time management skill, etc	4.0%	13.3%	9.6%	8.3%
Computer—General computer skills	10.0%	3.3%	7.7%	7.6%
Math/Bookkeeping skills	4.0%	6.7%	7.7%	6.1%
Management Training	10.0%	0.0%	3.8%	5.3%

2. The (Re)certification Process

Time Allowed for the (Re)certification Process

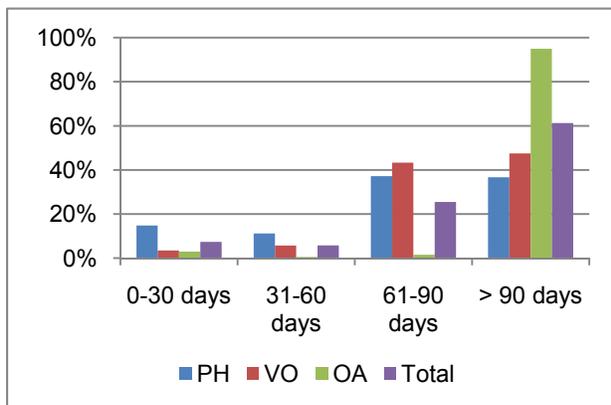
Regarding the (re)certification process, PHA/projects were also asked how many months prior to the effective date they started certain (re)certification tasks such as: mailing a letter to the household advising them of an upcoming annual review, interviewing a household member, requesting/obtaining verification from third parties, and calculating the rent. Exhibit E-2a shows the distribution of time for each of these tasks by program type. Owner-Administered projects are predominantly likely to mail letters to tenants more than 90 days prior to the next effective date and are in general more likely to start interviewing the household sooner than Public Housing and PHA-Administered Section 8 projects. Exhibit E-2b shows the average number of days prior to the effective date that certain (re)certification tasks occur.

Exhibit E-2a

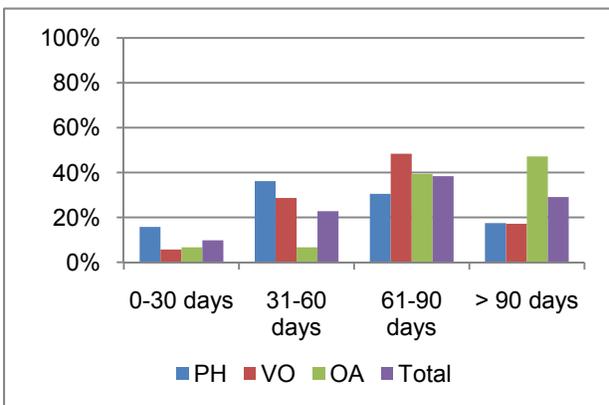
Number of Days Preceding the Effective Date That an Action Is Taken, by Program Type

(PH = Public Housing projects, VO = PHA-Administered Section 8 projects, OA = Owner-Administered projects)

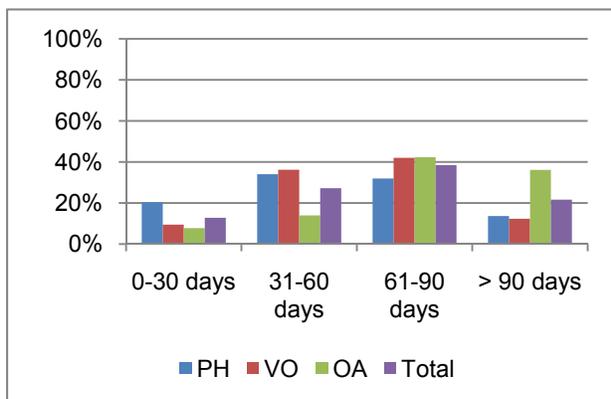
Letter is Mailed to the Household Advising Them of Annual Review



Household Member Is Interviewed



Verification Is Requested/Obtained from Third Parties



Rent Is Calculated

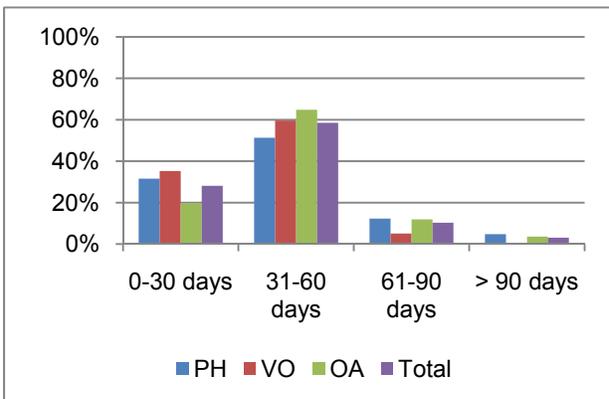


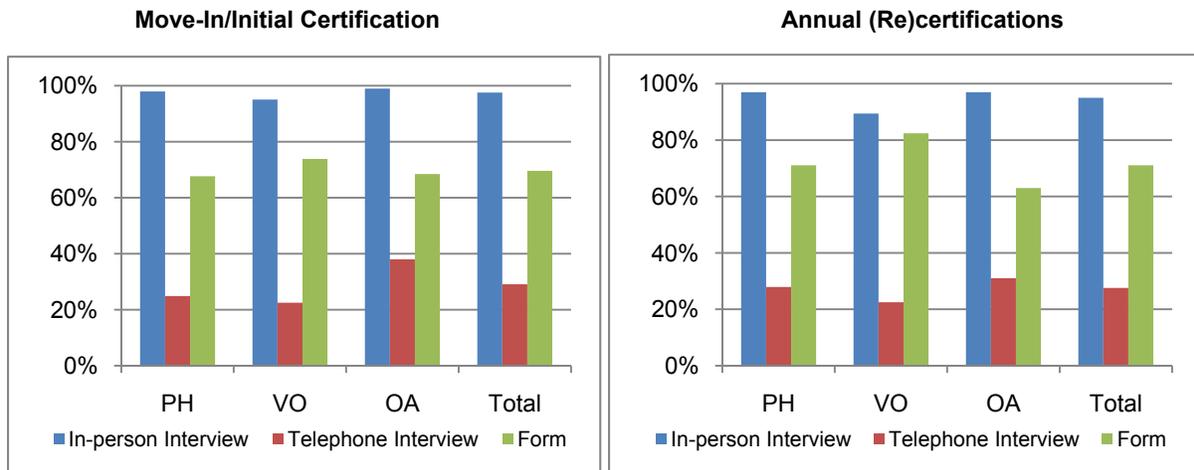
Exhibit E-2b
Average Number of Days Prior to the Effective Date (Re)certification Tasks are Performed, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Mail letter to household advising them of an upcoming annual review	88.1	101.3	117.1	102.4
Interview household member	68.6	78.3	92.6	80.4
Request/obtain verification from third parties	66.9	73.3	87.4	76.2
Calculate the rent	50.8	46.2	55.7	51.4

Methods Used to Gather Information for the (Re)certification Process

When conducting both move-in/initial certifications and annual (re)certifications, PHA/projects were more likely to obtain household information by conducting an in-person interview (98 percent and 95 percent, respectively) than by conducting a telephone interview or by having the tenants/applicants fill out a form and return it in-person or via mail. Exhibit E-2c presents the methods of obtaining household information for (re)certification used during move-in and annual (re)certifications.

Exhibit E-2c
Methods used to Obtain Household Information for (Re)certifications, by Program Type
 (PH = Public Housing projects, VO = PHA-Administered Section 8 projects, OA = Owner-Administered projects)



Tools Used to Gather Information in the (Re)certification Process

About 85 percent of all the PHA/projects in the study used a formal guide or a set of questions to conduct the (re)certification interviews. Ninety one percent of the Owner-Administered projects likely to use a formal guide, whereas only 78 percent of PHA-Administered projects were likely to do so. Fifty six percent of the PHA/projects who use formal guides for the interview process indicated that they were more likely to use questionnaires developed by themselves, compared to 9 percent who use questionnaires developed by a third party vendor. Exhibit E-2d presents

details on the percentage of PHA/projects that use formal guides to conduct (re)certification interviews and the various types of formal guides that they use.

**Exhibit E-2d
Use and Types of Formal Guides when Interviewing Tenants, by Program Type**

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Use formal guide or set of questions to interview tenants during the (re)certification process	82.6%	78.2%	91.0%	84.5%
Type of formal guide: Questionnaire developed specifically by the PHA/project	55.2%	53.5%	58.5%	56.0%
Type of formal guide: Questionnaire developed by a vendor	8.5%	4.9%	12.5%	9.0%
Type of formal guide: Checklist developed by the PHA/project	54.2%	45.8%	47.0%	49.4%

Methods Used to (Re)certify Households with Non-English Speaking Tenants

Over 64 percent of total PHA/projects have tenants who speak a language other than English as their primary language. Within these PHA/projects, about 24 percent of the total tenant population speak a language other than English as their primary language. There are two interesting facts regarding non-English speaking tenants. First, there is a sharp contrast by program type where only 49 percent of the Owner-Administered projects reported having non-English speaking tenants, whereas 81 percent of the PHA-Administered Section 8 projects reported having non-English speaking tenants. The second involves the proportion of non-English speaking tenants within a project. Owner-Administered projects with non-English speaking tenants indicated that 31 percent of their population are non-English speaking, whereas the PHA-Administered Section 8 projects with non-English speaking tenants reported that only 16 percent of their tenants are non-English speaking. So, while it seems the approximate proportion of non-English speaking households within each program type is similar, non-English speaking tenants are more clustered together in Owner-Administered projects than in PHA-Administered Section 8 projects.

The PHA/projects reporting to have non-English speaking tenants used a combination of methods to communicate with their non-English speaking tenants. On average, 48 percent of the PHA/projects had tenants who brought their own translators, 43 percent of PHA/projects had bilingual staff available, 37 percent of PHA/projects brought in translators or used a language bank or third-party service to communicate with tenants, and 32 percent of PHAs used forms in other languages to communicate with tenants. Exhibit E-2e presents details regarding prevalence of non-English speaking tenants and methods used to communicate with them.

Exhibit E-2e
Prevalence of Tenants Who Speak Language Other Than English as Their Primary Language, and Methods Used to Communicate Non-English Speaking Tenants, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Percentage of projects with tenants who speak a language other than English as their primary language	67.7%	81.0%	48.5%	64.1%
Percentage of tenants who speak a language other than English*	24.8%	15.7%	31.0%	23.7%
Methods of communication: Use bilingual project staff	43.8%	54.9%	32.5%	42.5%
Methods of communication: Use forms written in a language other than English	29.9%	44.4%	24.5%	31.7%
Methods of communication: Use translators brought by tenants themselves	50.2%	64.8%	34.0%	48.1%
Methods of communication: Use translators provided by PHA/project (third-party translators)	42.8%	50.7%	21.0%	36.8%

* Percentages were calculated only for PHA/projects that had non-English speaking tenants.

Procedural Differences in Processing (Re)Certifications for Households with Stable vs. Volatile Incomes

When PHA/projects were asked whether (re)certification procedures were the same for household with stable income compared to those with volatile sources of income such as income from seasonal employment or employment providing sporadic or infrequent income, 92 percent said they were the same, compared to 91 percent in FY 2009, and 93 percent in FY 2008. PHA-Administered Section 8 projects were the most likely to maintain the same procedures at 96 percent. Owner-Administered projects were at 94 percent, and Public Housing was at 87 percent. Of the PHA/projects that indicated that their procedures were different for households with volatile vs. stable income, the most common differences provided were that households with volatile, low or no sources of income were certified more frequently and since they were difficult to (re)certify, they were treated differently. The PHA/projects did not specify what “treated differently” meant.

Thirty four percent of the PHA/projects indicated that they require households with volatile sources of income to report their income more frequently than household with stable income. There was a sharp contrast with 80 percent of PHA-Administered Section 8 projects and 22 percent of Owner-Administered projects reporting this practice.

The Exhibit E2-f shows the detailed differences between households with volatile and stable sources of income.

Exhibit E-2f
Difference Between Households with Volatile and Stable Income Households, by Program Type

Description: The Percentage of PHA/ Projects That Indicated:	Program Type			Total
	Public Housing	PHA- Administered Section 8	Owner- Administered	
The annual (re)certification procedures for households with stable income and households with volatile income are the same	87.1%	95.8%	93.5%	91.7%
* The Households with unstable income, zero or very low income are certified more frequently and may be required to report monthly, every 60-90 days or, 180 days	28.6%	80.0%	22.2%	34.3%
* Verification of volatile sources of income are usually more difficult and therefore different	47.6%	0.0%	33.3%	37.1%
* Household with fixed stable income are re-certified less frequently. For example, (re)certification are conducted bi-annually or interim not required when small changes in income incur.	19.0%	0.0%	11.1%	14.3%
* Other	4.8%	20.0%	44.4%	17.1%

* The percentages are based on the PHA/projects whose procedure are different for households with volatile sources of income and stable sources of income.

3. The Verification Process

Frequency of Verifications

The PSQ collected information on the frequency of verification of various income, expense and other household characteristic items. Income items included income from employment, sporadic/infrequent/seasonal employment, TANF/welfare benefits, social security benefits and child support. Expense items included medical expenses, childcare expenses and disability expenses. Household characteristics included tenants’ date of birth, social security numbers, citizenship status, disability status and full time student status. PHA/projects were asked whether these items were verified only during move-in/initial certifications, only during annual (re)certifications, during both move-in/initial and annual (re)certifications or during neither certification types.

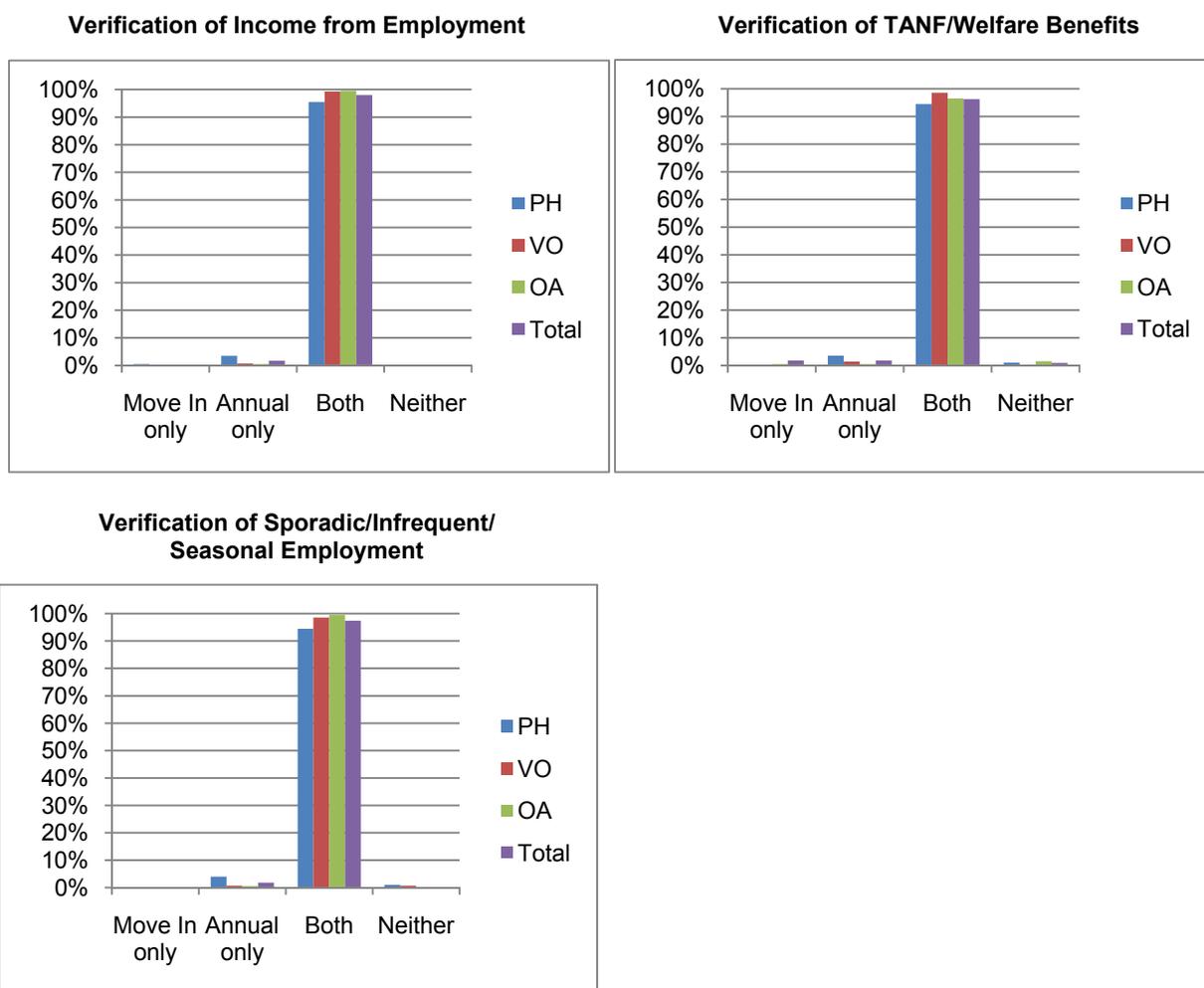
In general the PHA/projects indicated that they verify all of the listed items while processing both move-in and annual (re)certifications. Over 96 percent of the PHA/projects indicated that they verified all the listed income items while processing both certifications. Over 94 percent of the PHA/projects indicated that they verified all the listed expense items while processing both certifications. Over 93 percent of the PHA/projects indicated that they verified full time student status while processing both certifications. The only items that were verified during both move-in and annual (re)certifications by less than 90 percent of PHA/projects were some of the household characteristic items. While it made sense that PHA/projects were less likely to verify static information such as date of birth, social security numbers, and citizenship information during subsequent annual (re)certifications, and therefore would only verify them during move-in certifications, it was interesting that over 15 percent of PHA/projects indicated that they verify

disability status only during move-in certifications. In fact, 23 percent of Owner-Administered projects indicated that they verify disability status only during move-in certification.

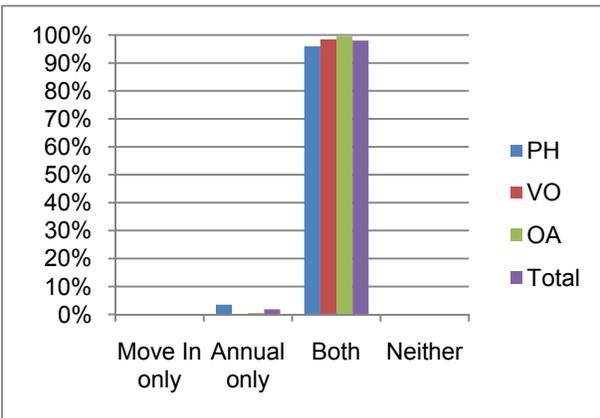
Most of the differences in verification practices between program types occurred in the household characteristic items, where Owner-Administered projects were more likely to verify household characteristic items only during move-in certifications and not during subsequent annual (re)certifications.

Of all the items requiring verification, child care expenses were least likely to be verified in either certification with 3.3 percent of the PHA/projects reporting they do not verify childcare expenses in either move-in or annual (re)certification. Exhibits E-3a, E-3b, and E-3c present the verification frequency of all income item, expense items and household characteristic items, respectively.

Exhibit E-3a
Frequency of Verification of Income Items While Processing Certification, by Program Type
 (PH = Public Housing projects, VO = PHA-Administered Section 8 projects, OA = Owner-Administered projects)



Verification of Social Security Benefits



Verification of Child Support Payments

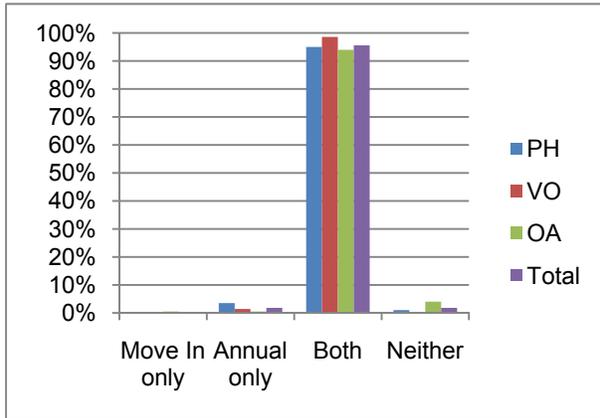
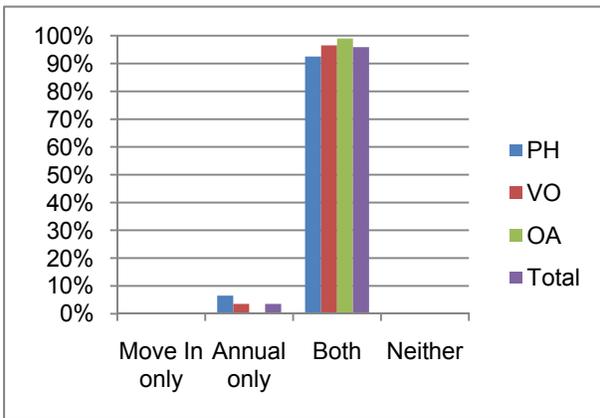


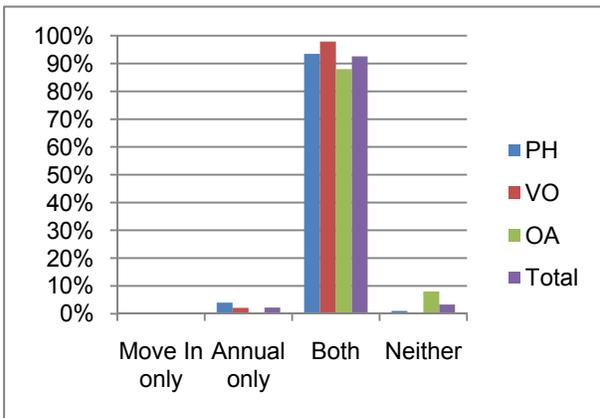
Exhibit E-3b

Frequency of Verification of Expense Items while processing certification, by Program Type
 (PH = Public Housing projects, VO = PHA-Administered Section 8 projects, OA = Owner-Administered projects)

Verification of Medical Expenses



Verification of Child Care Expenses



Verification of Disability Expenses

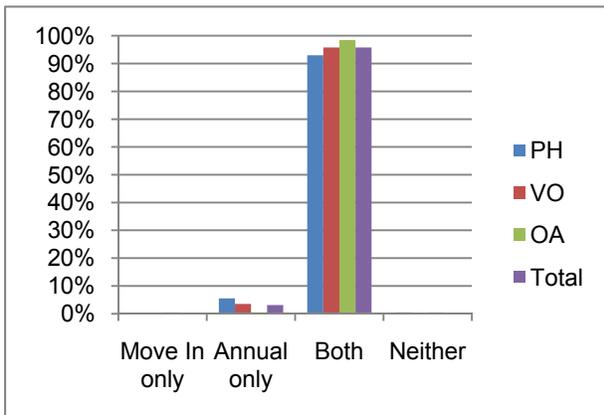
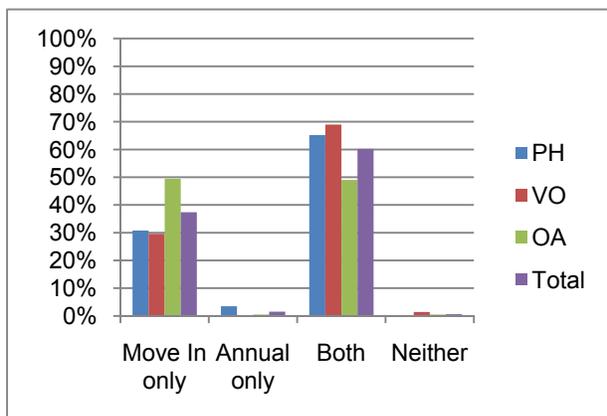


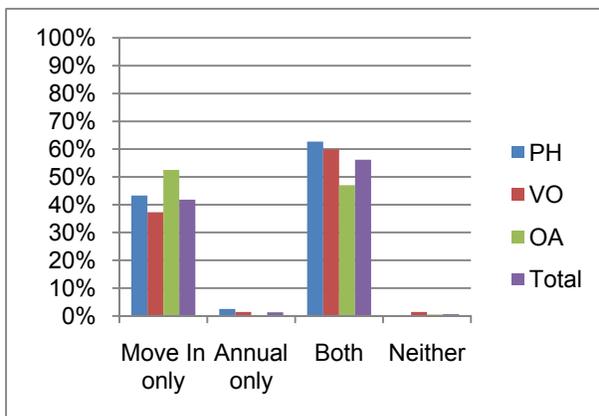
Exhibit E-3c
Frequency of Verification Household Characteristic Items while processing certification,
by Program Type

(PH = Public Housing projects, VO = PHA-Administered Section 8 projects, OA = Owner-Administered projects)

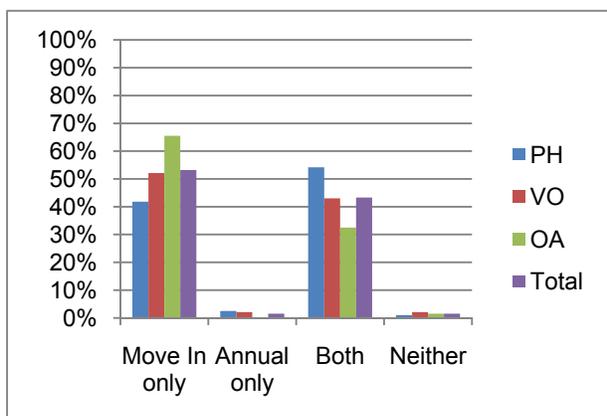
Verification of Date of Birth



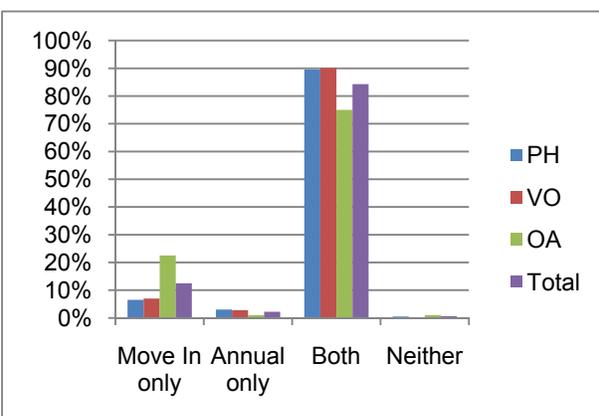
Verification of Social Security Numbers



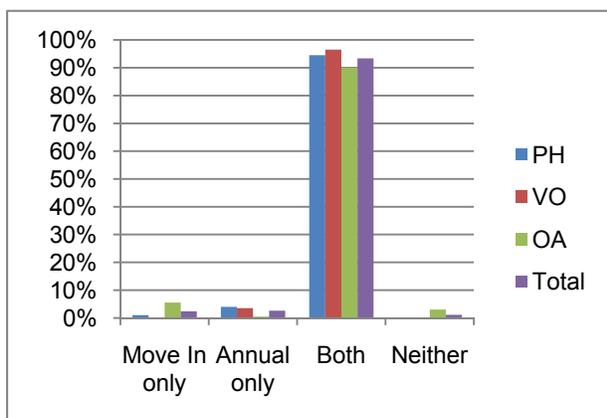
Verification of Citizenship Status



Verification of Disability Status



Verification of Full-Time Student Status



Problems in Obtaining Complete Verification

PHA/projects were asked about causes of problems in obtaining complete verifications. The most prevalent issue, cited by 52 percent of the PHA/projects, was employers not responding to requests in a timely manner. Exhibit E-3d present a list of all the items indicated by PHA/projects as causing problems in obtaining complete verification, by program type.

**Exhibit E-3d
Causes of Problems in Obtaining Complete Verifications, by Program Type**

Issues Frequently or Always Caused Problems	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Employers not responding to requests in timely manner	54.7%	53.5%	48.5%	52.2%
Employers not providing all requested information	48.8%	50.0%	45.0%	47.7%
Other institutions not responding in a timely manner	41.3%	44.3%	48.0%	44.5%
Tenants providing incomplete or inaccurate information	45.3%	46.5%	28.5%	39.4%

Cooperativeness of Various Institutions in Verifying Tenant Information

With respect to the level of cooperation of various types of institutions when verifying tenant information, the same institutions type have been listed as the least cooperative since FY 2007. Thirty seven percent of the PHA/projects reported that insurance companies were rarely cooperative. Financial institutions (24%), education institutions (21%), and health care providers (21%) were also rarely cooperative. Exhibit E-3e presents a list of institution type that were reported as being rarely or never cooperative by PHA/projects.

**Exhibit E-3e
Percentage of PHA/Projects That Indicated the Institution Types Were Rarely or Never Cooperative When Verification Information Was Requested, by Program Type**

Rarely or Never Cooperative Institution Type	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Insurance companies (e.g., health insurance)	33.3%	36.6%	25.5%	31.3%
Financial institutions (e.g., banks, investment firms)	23.9%	26.0%	22.0%	23.7%
Education institutions	17.4%	17.3%	27.0%	21.2%
Health care providers (e.g., doctors, pharmacies)	20.4%	26.8%	17.0%	20.8%

Measures Taken When Verification Requests Were Outstanding.

When problems and difficulties arose in verifying information, PHA/projects tried to resolve these issues though a variety of methods. Most PHA/projects (94%) indicated that they called third-parties to obtain verification information. Use of EIV at 88 percent increased from 83 percent in FY 2009, and jumped two spots to become the third most used procedure when verification was not provided. On average, 67 percent of PHA/projects reported resorting to accepting other less

preferred verification, down from 75 percent in FY 2009, and 73 percent in FY 2008. Public Housing programs were significantly less likely to resort to accepting less preferred verification. Exhibit E-3f lists the various actions taken when a verification was not returned.

Exhibit E-3f
Measures Taken When Verification Was Not Provided As Requested, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Called third party	93.0%	90.8%	96.0%	93.6%
Sent follow-up letter to third party	89.6%	92.3%	94.0%	91.9%
Used electronic verification or data matching (e.g., EIV)	92.0%	92.3%	81.0%	88.0%
Called tenant	86.1%	80.3%	86.5%	84.7%
Sent follow-up letter to tenant	81.1%	78.9%	71.5%	77.0%
Accepted other/less preferred verification	59.7%	71.1%	71.5%	67.0%

4. Use of Automated Systems

Capabilities of Computer Software Regarding (Re)Certification Process

Automated systems and computer software continues to play an increasingly integral part in PHA/projects daily tasks. Ninety seven percent of the PHA/projects indicated that in the past 12 months they utilized computers and computer software when performing various (re)certification and other administrative tasks. Of those PHA/projects, over 94 percent used computer software to submit data to PIC/TRACS. A complete list of the various tasks performed by computer software is presented by program type in Exhibit E-4a

Exhibit E-4a
Tasks Performed by Computer Software, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Submits data to PIC/TRACS	88.7%	95.6%	98.0%	93.9%
Brings forward household specific information from previous 58/59s and allows one to update it with current information	82.6%	89.7%	90.3%	87.3%
Contains pre-loaded information such as payment standards or utility allowances and selects the appropriate standard/allowance based on household type, total annual income, or unit size	81.0%	86.8%	91.8%	86.5%
Annualizes individual sources of income/expenses if you enter the pay rate and frequency of pay, or the amount and frequency of the expense	79.5%	84.6%	80.6%	81.2%

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Allows one to enter the 50058/59 after having manually completed it	77.9%	77.2%	82.7%	79.5%
Adds together all sources of income/expenses and calculates total adjusted income, but only after manually annualizing income and expense for each type of income/expense	54.9%	49.3%	46.9%	50.5%
Requires one to manually enter utility allowance, payment standard, contract rent, etc., for each individual household	28.2%	46.3%	11.7%	26.8%
Requires one to annualize income and expenses for each type of income/expense and manually add together all sources of income/expenses and calculate the total adjusted income prior to entry into the computer system	28.7%	19.1%	21.4%	23.5%

Use of Computers to Assist in the (Re)certification Process

The PHA/projects also indicated how they used the software. The most common use of the software was maintaining demographic information about the residents (98%), whereas the fewest number of PHA/projects indicated that they use the software to assist with conducting with household interviews. A complete list of common uses of computer system by program type is listed in Exhibit E-4b.

**Exhibit E-4b
Use of Computer Systems for Key Tasks, by Program Type**

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Maintain demographic information about residents	97.5%	98.6%	97.0%	97.6%
Calculate rent, income, or allowances	98.0%	97.2%	97.0%	97.4%
Print the 50058/50059 Form	95.0%	99.3%	98.0%	97.2%
Print letters to tenants	95.0%	94.4%	94.5%	94.7%
Submit tenant information to HUD	91.5%	98.6%	95.0%	94.7%
Input verified information	93.0%	91.5%	95.5%	93.6%
Input answers from a tenant interview transcript or checklist	51.7%	36.6%	37.5%	42.5%
Conduct computer assisted automated interviews with tenants	22.9%	12.7%	24.0%	20.6%

5. Quality Control Procedures

Prevalence of Various Types of Errors

Upon reviewing (re)certifications, 8 percent of the PHA/projects indicated that they frequently found cases with overdue (re)certifications and cases with missing or incomplete verifications of income. Fourteen percent of the Public Housing projects indicated that they frequently found cases with overdue recertification, compared to 4 percent of Owner-Administered projects. PHA/projects were least likely to frequently find cases with eligibility determination errors at less than 1 percent. Exhibit E-5a presents the prevalence of various types of errors.

Exhibit E-5a
Prevalence of Various Types of Errors, by Program Type

Types of Errors Frequently Found in Cases	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Overdue (re)certifications	14.1%	6.5%	3.8%	8.3%
Missing or incomplete verifications of income	8.1%	9.4%	6.5%	7.9%
Missing or incomplete verification of expenses	4.3%	9.4%	5.4%	6.1%
Mistakes in calculating rent	4.9%	11.5%	1.1%	5.3%
Determination that applicants are eligible when they should not be eligible	0.5%	0.7%	0.0%	0.4%

Causes of Errors

In the past few years, the issue that most frequently caused errors was once again tenants providing inaccurate or incomplete information (37%). The sharpest contrast between program types was regarding not having enough staff to handle the workload, with 19 percent of the PHA-Administered Section 8 projects and only 5 percent of the Owner-Administered projects reporting such. Exhibit E-5b details the most frequently reported causes of errors.

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

Issues Frequently or Always Causing Errors	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Tenants providing inaccurate/incomplete information	41.6%	38.8%	31.4%	37.2%
Complexity of using electronic sources such as EIV for gathering information about tenants	13.0%	13.6%	17.3%	14.8%
Complex HUD regulations for rent calculations	12.4%	20.9%	11.3%	14.4%
Not having enough staff to handle the workload	14.6%	18.7%	5.4%	12.4%
Frequent changes in HUD regulations concerning eligibility for assistance	9.1%	10.8%	14.6%	11.6%
Complexity of determining eligibility for assistance	7.0%	11.6%	3.7%	7.1%

Characteristics of Households That Were More Likely To Have Errors

Only 86 of the total projects indicated that households with certain characteristics were more likely to have errors. Fifty two percent of these PHA/projects indicated that households with multiple sources and types of incomes were more likely to have errors. The second most cited characteristic of households that were more likely to have errors was households with large families (31%). Table E-5c provides details regarding the household characteristics that have higher chances of error, by project type.

Exhibit E-5c
Characteristics of Households That Are More Likely To Have Errors, by Program Type

Household Characteristics	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Households with multiple sources and types of income	45.2%	77.4%	29.2%	52.3%
Large families	41.9%	35.5%	12.5%	31.4%
Households with volatile income	22.6%	12.9%	37.5%	23.3%
Households with multiple/complex sources of assets	12.9%	16.1%	25.0%	17.4%
Households with special status tenants—such as students, elderly, disabled	6.5%	3.2%	29.2%	11.6%
Households with expenses—such as medical, childcare	9.7%	6.5%	12.5%	9.3%
Households with EID	16.1%	3.2%	0.0%	7.0%
Tenants with Deductions	9.7%	6.5%	0.0%	5.8%
Self-employed	3.2%	3.2%	0.0%	2.3%
Others	12.9%	9.7%	12.5%	11.6%

Note: Percentages are based on 86 PHA/projects that indicated households with certain characteristics were more likely to have errors.

Strategies Used to Address the Causes of Errors Identified

In order to minimize various types of errors in the (re)certification process, PHA/projects take corrective and preventative actions. In FY 2010, the PSQ collected information on the various strategies that the PHA/projects used to reduce errors. A total of 367 projects described their strategies. Thirty-five percent of the projects that responded indicated they review their files and make corrections if necessary, followed by 19 percent of PHA/projects that indicated they train their employees on policy, procedures and other topics with most common errors. There is an interesting contrast by program type regarding the strategy of communicating with tenants to try to resolve an error. Thirty percent of the Public Housing but only 8 percent of PHA-Administered Section 8 projects practice this strategy. A detailed list of the various strategies used by PHA/projects to reduce errors is provided in Exhibit E-5d.

Exhibit E-5d
Strategies Used by PHA/Projects To Reduce (Re)Certification Errors, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Review (all) cases and make corrections if necessary	32.0%	37.0%	37.2%	35.4%
Train staff on policy, procedures, topics with most common errors, etc.	14.8%	25.9%	18.2%	19.3%
Use EIV and/or other third-party verification	18.0%	15.7%	19.7%	18.0%
Get assistance from tenant by communicating with them through informative mails, termination letters, additional interviews, self-documentations, etc.	29.5%	8.3%	11.7%	16.6%
Use checklists/forms prior to data entry	10.7%	13.0%	6.6%	9.8%
Stay up to date with HUD Policies	11.5%	5.6%	8.8%	8.7%
Review selective cases— for example, move-ins, cases processed by new hires, random cases	6.6%	11.1%	4.4%	7.1%
Discuss issues and policies with staff at meetings	5.7%	9.3%	4.4%	6.3%
Refer to HUD field office, HUD guidebooks or other policy sources	10.7%	2.8%	2.2%	5.2%
Use computer system with internal checks	4.9%	3.7%	2.9%	3.8%
Hire/re-assign additional staff	0.8%	8.3%	1.5%	3.3%
Double check one's own work	1.6%	3.7%	3.6%	3.0%
Manually calculate rent and check against what computer system and take appropriate following action if a discrepancy is noted	3.3%	3.7%	2.2%	3.0%
Review selected items—verification forms, or 50058	0.0%	2.8%	2.9%	1.9%

Methods Used To Clarify and Implement HUD Policies

When PHA/projects had questions concerning HUD policies, they used a variety of methods to seek answers. They were most likely to refer to their HUD/PHA/owner manual (96%), up from 92 percent in FY 2009. This year, the percentage of PHA/projects who used internet/web-based information/training jumped from 81 percent in FY 2009 to 87 percent in FY 2010. The third most popular method was to figure out the answer for themselves at 82 percent. More detailed numbers by program type are shown in Exhibit E-5e.

Exhibit E-5e
Methods for Getting Answers to Questions About
HUD Policies in the Past 12 Months, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Refer to HUD/PHA/owner memo or manual	93.5%	97.2%	97.5%	95.9%
Use Internet, web-based information, or training	83.6%	93.7%	86.0%	87.1%
Determine the answer themselves	80.6%	85.2%	81.5%	82.1%
Ask questions at a HUD training session	72.1%	81.0%	82.0%	78.1%
Ask HUD field office or other HUD staff	64.7%	89.4%	75.5%	75.1%
Watch training videos	64.2%	74.6%	58.0%	64.6%
Hold meetings or talks with other PHAs/owners (e.g. round tables, regional meetings)	61.7%	73.9%	51.5%	61.1%
Use contractors/consulting services	43.4%	47.2%	44.0%	44.6%

Methods Used To Select Cases for Review

Ninety-four percent of the PHA/projects indicated that they review tenant files as a QC measure after (re)certifications have been conducted in some form. PHA-Administered Section 8 projects were most likely to review tenant files at 98 percent. In determining which cases to select for review, PHA/projects most frequently randomly spot checked a percentage of all cases (69%), followed by checking (re)certification conducted by new staff (50%). Exhibit E-5g presents the various methods used to select cases for review by program type.

Exhibit E-5g
Methods Used by PHA/project to Select Cases for Review, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Randomly spot-checked some cases	68.6%	77.0%	63.2%	69.0%
Checked (re)certifications conducted by new staff	48.1%	66.9%	40.0%	50.3%
Checked certain cases completed within a given period	37.3%	54.0%	30.3%	39.3%
Checked (re)certifications conducted by staff who had past performance problems	37.3%	56.8%	32.4%	40.9%
Checked cases on certain dates or times of year	31.4%	32.4%	29.7%	31.0%
Checked files with certain characteristics or anomalies	30.8%	28.8%	28.6%	29.5%
Reviewed all cases	30.3%	20.1%	44.3%	32.6%

Frequency of Review

Overall, in the past 12 months, PHA/projects checked about 46 percent of cases in a review. Owner-Administered projects had the highest percentage of cases reviewed at 56 percent, and PHA-Administered Section 8 projects had the lowest percentage at 33 percent. In general, PHA/projects were most likely to conduct reviews on a monthly basis (38%), followed by quarterly or annually (23%). Exhibit E-5g below describes the frequency of reviews by program type.

Exhibit E-5g
Percent of Cases and Frequency of Review in the Past 12 Months, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Percent of cases checked in a review	45.1%	33.0%	55.7%	45.6%
Conducted reviews on a Weekly basis	17.3%	20.9%	8.1%	14.9%
Conducted reviews on Monthly basis	36.8%	47.5%	31.9%	37.9%
Conducted reviews on a Quarterly basis	24.3%	19.4%	24.9%	23.2%
Conducted reviews on an Annual basis	18.9%	12.2%	34.6%	22.8%

File Reviewers

Overall, 73 percent of PHA/projects indicated that they had external file reviews by either HUD field staff or outside contractors in the previous year, compared to 72 percent in FY 2009. In addition to external file reviews, the PSQ also collected data regarding who frequently reviewed or monitored the (re)certification process. A majority of PHA/projects indicated that the team leader or supervisor reviewed or monitored a (re)certification (83%). PHA/projects also indicated that they frequently used coworkers, staff auditors, outside auditors and contracts administrators for monitoring. Exhibit E-5h presents data regarding who reviews or monitors (re)certifications.

Exhibit E-5h
Monitors or Reviewers of (Re)certifications in the Past 12 Months, by Program Type

PHA/Projects Frequently or Always	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Team leader or supervisor	82.5%	82.4%	84.0%	83.1%
Coworker	42.3%	37.3%	46.0%	42.3%
Staff auditor	35.4%	41.6%	44.5%	40.3%
Contracts administrator	9.5%	14.1%	42.0%	22.7%
Outside auditor	29.4%	31.0%	29.5%	19.0%
HUD or HUD contractor	16.4%	9.2%	28.5%	19.0%

Tools and Techniques Used To Monitor the (Re)Certification Process

Personnel who did monitor the quality of work performed by (re) certification staff, used various methods. The most commonly used technique to monitor (re)certifications was reviewing files after completion (83%), followed by using pre-designed forms to check key steps. Exhibit E-5i lists all the tools and techniques used by PHA/projects to monitor (re)certification process.

**Exhibit E-5i
Techniques Used to Monitor (Re)certifications, in the Past 12 Months, by Program Type**

PHA/Projects Frequently or Always	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Review files after completion	79.6%	86.0%	83.0%	82.5%
Use pre-designed form to check key steps	67.6%	81.0%	76.0%	74.2%
Make individualized notes for each case reviewed	66.2%	73.2%	70.5%	69.6%
Discuss (re)certification with staff after completion	64.1%	64.7%	68.5%	65.9%
Use computer program	59.2%	47.2%	65.5%	58.4%
Discuss (re)certification with staff while being processed	45.8%	48.6%	48.5%	47.5%
Review files while (re)certification was being processed	35.4%	34.5%	40.5%	37.0%
Sit in on the interview with the client	15.4%	19.7%	20.5%	18.4%
Re-interview household	11.9%	2.8%	11.5%	9.4%

Suggestions to Reduce Error

In addition to collecting information regarding the strategies that the PHA/projects use to reduce errors, the PSQ also collected information on what the PHA/project staff thought should be done to minimize these errors. Eighty two PHA/projects had suggestions regarding what should be done to help the PHA/projects minimize errors. The most common suggestions were regarding EIV. Twenty seven percent of the PHA/projects that responded indicated EIV data should be more current. Another 12 percent indicated that there should be general improvement in EIV. Additional 11 percent specified that EIV could be improved by adding other income sources, such as TANF, VA benefits, child support, welfare, etc. Other common suggestions regarding ways to reduce errors were to require fewer (re)certifications (20%) and make improvements on verification tools such as more prevalent use of electronic verification tools like Work Number (17%). Exhibit E-5j below lists all the suggestions on ways to reduce errors that the PHA/projects provided.

Exhibit E-5j
Suggestions Provided by PHA/Project Staff on How To Reduce Errors, by Program Type

Characteristic	Program Type			Total
	Public Housing	PHA-Administered Section 8	Owner-Administered	
Make improvement on EIV by providing more current data	29.6%	26.8%	21.4%	26.8%
Require less frequent (re)certifications. For example, requiring biannual (re)certifications for households with certain characteristics, such as fixed-income households (e.g., SS only), elderly, disabled households; or, by not requiring interim (re)certifications	14.8%	26.8%	7.1%	19.5%
Improve verification tools. For example, make more electronic verification such as work number available.	11.1%	22.0%	14.3%	17.1%
Simplify income calculation. For example, use range of incomes for tenants instead of actual specific income, remove exempt/excluded incomes	7.4%	19.5%	14.3%	14.6%
Change income verification requirement. For example, allow use of alternative doc as verification: paystub, IRS tax return	3.7%	17.1%	14.3%	12.2%
Make improvement in EIV – specifications not provided	11.1%	7.3%	28.6%	12.2%
Make improvement in EIV by adding other income sources, such as TANF, VA benefits, child support, welfare, etc.	22.2%	4.9%	7.1%	11.0%
Reduce paperwork required of project - fewer forms to be completed	22.2%	2.4%	7.1%	9.8%
Improve cooperation/coordination with other agencies (especially State and Federal agencies such as Homeland Security and Child care agencies) regarding verifications	7.4%	9.8%	14.3%	9.8%
Provide training to project staff	14.8%	4.9%	7.1%	8.5%
Reduce paperwork/signatures required of tenants	11.1%	0.0%	14.3%	6.1%
Make improvement on software—such as ability to import data directly from EIV, add (re)certification due and other alerts	11.1%	4.9%	0.0%	6.1%
Simplify or eliminate EID	7.4%	7.3%	0.0%	6.1%

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. The FY 2010 questionnaire underwent a change in organization compared to the FY 2009 and FY 2008 questionnaires, and thus many of the results are not comparable from year to year.

In general, questions related to computers and technology over time show that they are being increasingly used by PHA/projects for a variety of tasks, from calculating rent and collecting demographic information to submitting 50058/50059 Form data to HUD. The new open ended questions provided some useful insights. For instance, regarding staff turnover, Public Housing staff had a much lower rate of work performance related staff turnover than PHA-Administered Section 8 Vouchers or Owner-Administered projects. The open ended questions also shed light on issues regarding EIV, where PHA/project staff indicated the need to improve EIV by making the information more current and by adding other income sources such as TANF, VA benefits, child support, etc.

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. While focus groups and cognitive interviewing may be optimal in aiding the revision of the PSQ items by focusing attention on the specific circumstances and issues faced by the PHA/projects, we have realized that open ended questions also helps identify some of these issues. 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, and may provide a better link between PSQ information and the estimation of payment and income errors.

Appendix F—Multivariate Analysis

APPENDIX F—MULTIVARIATE ANALYSIS

The FY 2010 HUDQC multivariate analyses followed the approach used in the FY 2009 study to identify project and household factors that contribute to rent errors and errors in the certification/recertification process made by project staff (Objective 13). The multivariate analyses also aimed to determine whether error rates and error costs have statistically significant differences between programs, and to address the extent to which error rates in projects that use an automated rent calculation system differ from errors in those that do not (Objective 12), and to determine whether error rates and error costs had statistically significant differences between program types (Objective 5). To meet the specified study objectives we addressed two research questions:

- Other things being equal, what project variables and household variables accounted for rent error and project-caused errors?
- What was the effect size (or relative strength) of project characteristics, project operation features, project-made errors, and household characteristics in accounting for rent error?¹

Guided by the conceptual framework in the FY 2009 study, this analysis examined two models based on the research questions above: one model examining rent errors (gross, overpayment and underpayment) and one model examining project-caused errors. Focusing on project factors and project-caused errors in connection with rent errors, we attempted to generate useful information for HUD's program improvement. Household or tenant characteristics associated with rent error were examined as well, in order to generate information about cases more likely to be in error. The remainder of this appendix is organized into the following sections: Background, Data, Methodology, Findings, and lastly Summary.

Background

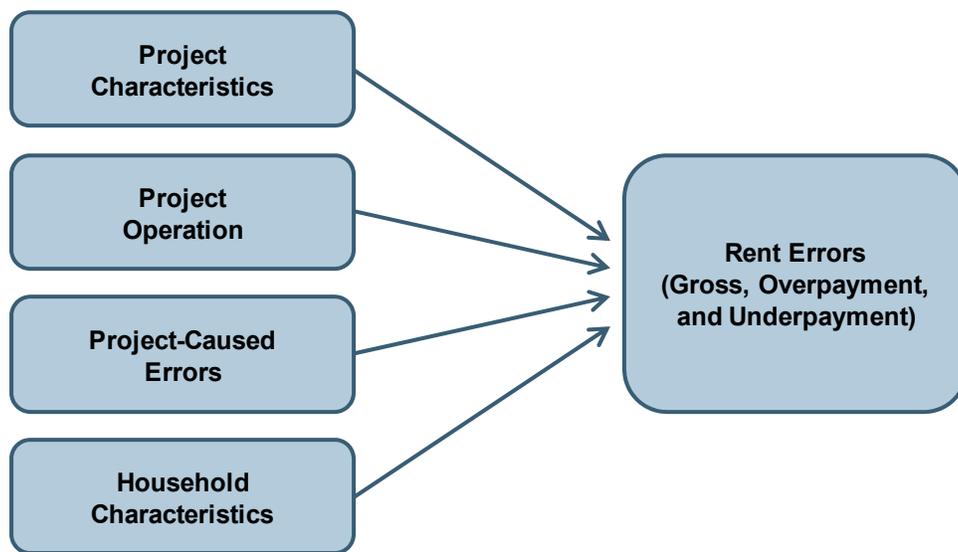
Modeling Rent Errors. The dollar amount of rent error was measured in terms of overpayment, underpayment, and gross error. Overpayment is defined as the dollar value of HUD's subsidiary rent payment that was greater than the quantity determined in this QC evaluation for a given household; underpayment is the dollar value of the HUD payment that was smaller than the quantity as determined by the QC evaluation for a given household. Gross error is the dollar amount of either overpayment or underpayment (in absolute value) for a given household. As the three measures of rent error may relate to project and household factors in different ways, modeling each rent error measure should be informative to program improvement.

Hypothetically, dollar amounts of rent errors are affected by four sets of factors: project characteristics, project operation, project-caused errors, and household characteristics (see Figure F-1). *Project characteristics* refer to organizational and staffing features (e.g., program type, caseload, requirements for hiring, and staff training). *Project operation* refers to how the staff conduct tasks such as (re)certification interviews, monitoring reviews, verification practices; and computer applications. *Project-caused errors* are defined as errors or problems that occur during the process of conducting (re)certifications and determining rent subsidy as revealed in the QC

¹ Estimation of the effect size for predictor variables requires valid measurement of each variable, sensible model specifications, and good model fit. In survey data analysis, however, it is always challenging to obtain accurate measures of every variable and specify models that generate robust estimates of effect sizes.

evaluation (see Chapter II: Methodology and the Methodology section in this Appendix for definitions of the error types). The available measures of *project-caused errors* may not be adequate to represent all potential errors. In our modeling, not all indicators of project-caused errors were found important in accounting for rent errors. Some project-caused errors were unrelated or even reversely related to the dollar amount of rent errors due to possible confounding effects among multiple errors and other project or household factors. *Household characteristics* refer to household financial conditions and demographics. The concept and related indicators of household characteristics have been well established in prior studies as important predictors of the rent errors. We considered household variables as exogenous in the model because they were not responsive to project management and operations.

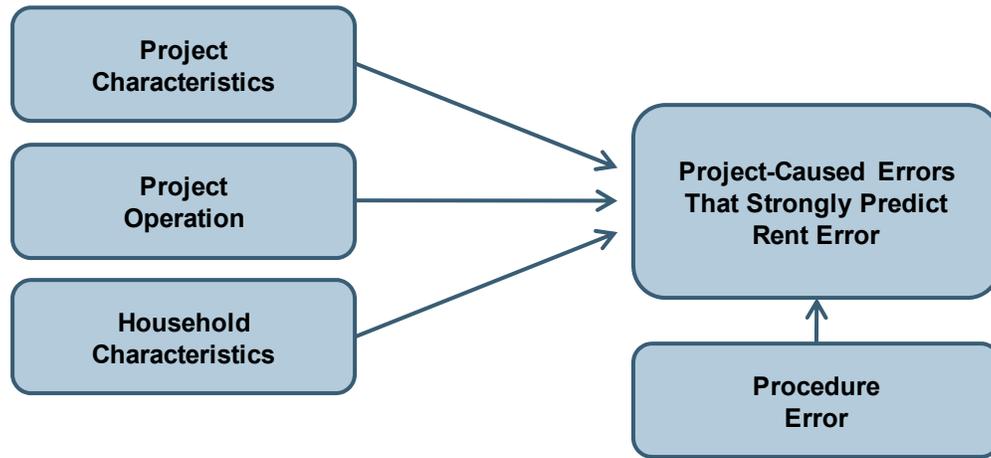
Figure F-1
Conceptual Framework for Modeling Rent Errors



Modeling Project-Caused Errors. The second model specifies project-caused errors as the consequence of project characteristics, project operation, and household characteristics (see Figure F-2). The rationale is: project-caused errors occur typically because of the limitations of organizational resources and staffing, lack of rigorous quality control procedures, and complicated household financial situations that project staff encounter in handling recertifications and determining payment.

Project-caused errors may or may not correlate to each other. To account for a given project-caused error, it is only meaningful to consider other project errors that are expected to affect the given project error. Different from FY 2009 analysis where a set of project errors were specified as predictors of a given project error, this analysis only specified the *procedure error* in the final equations to predict project-caused errors that strongly predict rent error, i.e., overdue recertification error and transcription error (see Figure F-2). Procedure error was hypothetically influential on other types of project error and it did not excessively overlap with other project errors.

Figure F-2
Conceptual Framework for Modeling Project-Caused Errors



Data

We combined the household data with project-level data and performed data processing, editing, and analysis. The household records were matched with the affiliated projects by project identification code. The resulting dataset contains 2,404 household cases² linked to 543 projects. The activities of data editing, initial analysis, and final model specification and estimation were summarized below.

Project Data

The large number of project data items required extensive effort of editing, rescaling, and bivariate comparison to build composite indicators of project characteristics and project operation. The effort generated over 70 composite indicators or rescaled variables.

We selected project variables that are most relevant to rent errors. First, we made judgments based on descriptive statistics to exclude:

- Variables that were applicable only to a subgroup of projects (e.g., new certification staff training measures were available for projects that hired new staff); and
- Variables that lacked variation, for example, less than one percent of the sampled projects reported to ask only general questions during the recertification process (in contrast to asking specific questions about income and expenses), thus the variable would have little use due to uniformed responses.

² Subsequent diagnosis analysis identified two cases with high residual scores in rent error and were removed from the final modeling, which used 2,402 tenant records (see *Regression Diagnosis Analysis*).

We assessed the extent to which project characteristics were differentiated by error status by breaking up project variable statistics by binary indicators of gross error; eliminating those variables that were essentially identical for the error and non-error groups. Additionally, a series of regression models were specified, each with the gross rent error as the dependent variable and a different group of independent variables including: project staffing, hiring requirements, verification practice, certification monitoring methods, certification review procedures/methods, the use of computer software, policy change-related communication, and procedures of obtaining income information and interviewing households. The regression procedure used a stepwise technique and maximal R-square methods in an attempt to identify a model that included meaningful predictors from each group.³

Unfortunately, few project variables were found strongly related to gross rent error. The selection of project variables for modeling, therefore, was primarily based on informed judgments of variables' conceptual relevance to rent error. Specifically, in the *project characteristics category*, we selected variables by focusing on personnel involved in the recertification process, including: staff hiring requirements, staff training and experience, workload, staff specialization in certification, and staff stability. Under the category of *project operation*, we selected variables that described recertification procedures and activities, including: timeliness preparing for move-in or recertification, methods used in processing move-ins and recertifications, information collected for move-ins and recertifications, methods used when working with non-English speaking tenants, types of income and expense information collected, procedures for reviewing files, frequency of (re)certification monitoring, and computer application.

The definitions and measures of the project variables are listed below (Attachment 1 presents descriptive statistics for these variables):

Project Characteristic (PC) Indicators. The project characteristic indicators are—

- Section 8: HUD PHA-administered Section 8 program, binary coded one for yes and zero for no.
- Public Housing: HUD Public Housing program, binary coded one for yes and zero for no (with the two binary coded program indicators, the reference group was Owner-administered program).
- Units per staff (in 10s): The ratio of household units per staff, rescaled to 10 for presenting in three decimal points.
- Percent of certification staff in the past 12 months.
- Percent of experienced certification staff (with 5 or more years) in the past 12 months.
- Percent of new certification staff (with less than 1 year) in the past 12 months.
- Percent of certification staff left PHA/project in the past 12 months.

³ Stepwise regression is a technique in which independent variables in the model are repeatedly estimated based on the *F* statistic *p*-value below the specified α . This technique then removes any variable that has an insignificant *F* statistic *p*-value exceeding the specified α . The process continues until none of the variables excluded from the model has an *F* statistic significant at the specified α and every variable included in the model is significant at the specified α . Combined with the maximal R-square process, the models are compared in estimated R square and the model with the largest R square is selected.

- Requiring at least a high school education in hiring: Binary coded one for yes and zero for no.
- Number of types of housing experiences required in hiring: Counts of housing service work experiences (e.g. housing-related experience, special housing-related training or certification).
- Training activities for experienced staff: Count of training activities frequently or always conducted.
- Frequently/always train experienced certification staff: Binary coded one for yes and zero for no.

Project Operation (PO) Indicators. The project operation indicators are—

- Days before recertification to mail letter to households, request third parties verification, and calculate the rent: Average days for the three activities.
- Cooperation with third parties to obtain verification data: Binary code indicating any group cooperation frequently or always.
- Number of follow-up verification activities: Counts of activities.
- Review files weekly or monthly: Binary code with 1 for weekly or monthly review and zero for less frequent review.
- External review of files: Binary code with 1 for outside reviewers (HUD, contractor, etc.), zero for no such external review.
- Frequency of certification monitoring by various personnel: # of types of personnel who monitored/reviewed work (team leader/supervisor, coworker, staff auditor, etc.).
- Number of techniques used to monitor certification: Number of techniques frequently or always used.
- External monitor of certification: Binary code with 1 for frequent or always monitor by external monitors (contract administrator, outside auditor, or HUD/contractor), and zero for less frequent monitoring by such monitors.
- Use of software to calculate rent: Binary code with 1 for yes and zero no.
- Use of computer software in certification: Binary code with 1 for yes and zero no.
- Number of key functions performed by computer.
- Number of days before recertification: Average days to mail, interview, or calculate rent before recertification.
- Verified items, both during move-in and recertification by in-person interview: Binary coded one for yes and zero for no.
- Verified items during - move-in only: Binary coded one for yes and zero for no.
- 10 percent or more of non-English speaking households: Binary coded one for 10 percent or more non-English speaking tenants and zero for no.

- Asked about all income types both during move-in and recertification: Binary coded one for yes and zero for no.
- Asked about all expense types both during move-in and recertification: Binary coded one for yes and zero for no.
- Third party cooperation level: Binary coded one for frequently or always cooperating with all the eight specified groups for obtaining verification information, and zero for otherwise.
- Number of follow-up verification activities: Sum of follow-up verification activities.
- Follow-up conducted for third-party verification: Binary coded one for yes and zero for no.
- Review files weekly or monthly: Binary coded one for yes and zero for no.
- Review file by externals (HUD, field staff, or outside contractor): Binary coded one for yes and zero for no.
- Frequently/always monitor/review by externals (contracts administrator, auditor, HUD or HUD contractor): Binary coded one for review by any of the outsiders and zero for no.
- Number of frequently or always used monitor techniques: Count of frequently or always used monitor techniques.
- Methods for answering policy questions: Binary coded one for using one or more approaches to answer questions relating to HUD policies, zero for none.
- Use software to calculate rent: Binary coded one for yes and zero for no.
- Number of computerized key functions: Count of computer system assisted functions relevant to rent error, including track pending verification, input verification data, calculate rent/income/allowance, conduct rent reasonableness comparison, and record tenant demographic data) assisted by computer systems.

Project-Caused Error Indicators. As in the previous studies, we examined six types of project-caused errors measured in dichotomous categories (with one for error and zero for error free), including: overdue recertification error, calculation error, consistency error, transcription error, administration error, procedure error (see the *Introduction and Methodology* sections of this report for definitions of error types). We also examined two error indicators measured with continuous scales, namely, the transcription error rate (the proportion of transcribed items containing transcription errors) and the verification error rate (the proportion of the verification-required items without third-party verification in writing).

Of these, we found three indicators that were statistically significantly related to greater gross rent error with interpretable effects (see Exhibit F-1 for bivariate statistics and Exhibit F-2 for regression coefficient estimates). These were: overdue recertification error, transcription error, and the transcription error rate. To understand how project characteristics, project operation, and household characteristics accounted for these important types of error, we further modeled these three measures of project error. For binary-coded overdue recertification error and transcription error, we used logistic regression. For the transcription error rate we used linear regression techniques. In addition, we summed up all types of errors that occurred in each household case to

create an indicator of overall extent of project error ('total N errors'). This indicator was also analyzed with linear regression analysis to assess its relationships with project and household background information.

Household Data

The outcome measures of the analysis, dollar amount of rent errors, types of project-caused errors, and household financial conditions (e.g., income and expenses) came from household records. As common practice, for gross rent error, overpayment, and underpayment, we took the logarithm of each dollar value to tighten the variables' skewed distributions where very few cases had large dollar errors and many had zero error.

Household Characteristics. We edited and rescaled household data to construct composite variables from the original data items and tested the variables' bivariate and multivariate relationships with gross rent error. We examined all the household variables that were known to be predictive of gross rent error based on past HUDQC multivariate analyses (2000–FY 2009).

Household variables included interval measures in either dollar amount (e.g., total annual income) or item counts (e.g., number of bedrooms and number of incomes and expenses) and binary-coded indicators such as households with elderly (age 62 or older) or disabled member(s), coded as zero for no and one for yes. To make the statistic interpretation straightforward, we rescaled interval variables by subtracting the grant mean from each individual value, a process known as centering.⁴ Exhibit F-1 presents descriptive statistics of the household variables in the original scale, separately for households who had a gross rent error dollar amount of \$5 or more compared with households who had no error or an error less than \$5. Attachment 2 lists all the modeled variables with descriptive statistics.

Methodology

Regression Diagnosis Analysis. We conducted regression diagnostic analysis to ensure that collinearity among predictor variables were at acceptable levels and that residual distribution of the predicted gross rent error was not biased. When a predictor is a linear combination of other predictors in the model, the coefficient estimates tend to be unstable, with large standard errors; a problem known as collinearity or multicollinearity. The diagnostic results were largely consistent with earlier studies: two household variables, the number of dependents in the household and the number of medical expenses showed exceedingly high collinearity with other variables and thus were included in the models.⁵

We conducted residual analysis based on the studentized residual scores (see Attachment 2 for details). The analysis generated statistics and plot graphs that suggested the residual distribution was reasonably normal, with only two cases displaying large positive values of residual errors

⁴ With such centered scaling, the intercept of the regression model is the log gross rent error for households who had mean values on all the predictor variables; and each regression coefficient as the change in log gross rent error associated with one unit change around the grant mean of the given predictor variable.

⁵ We ran SAS PROC REG to generate collinearity diagnostic statistics (TOL, COLLIN, VIF) with the household variables as predictors and log gross error as the dependent variable. With VIF greater than 5.0, the household dependent number, medical expense, household size, and number of expenses showed high collinearity. The latter two indicators were judged to be conceptually more important and were retained in the equation.

greater than 4.00. Removing the two cases from the analysis would improve the model fit and reliability of the estimates, with little effect on sample integrity. The final sample contained 2,402 household records and 543 projects.

Unconditional Hierarchical Linear Modeling (HLM) generated the estimate of project-level variance in log gross error proportional to the total variance, which was 6.71 percent (see Attachment 3). This was comparable with previous years' estimates, for example, 5.60 percent and 4.33 percent in FY 2008 and FY 2009, respectively. The small proportion of project-level variance made it not meaningful to use the HLM technique for this study (a rule of thumb is above eight percent, (Raudenbush and Bryk, 2002)). We then proceeded to run ordinary least square regression modeling.

Model Specification and Estimation. We tested and estimated a number of multivariate models of rent error (gross rent error, overpayment, and underpayment) and project-caused errors. With revised project operation measures combined with household variables, multiple regression analysis sought to systematically assess project and household variables in term of *net effect on the rent error and project-caused errors*.

For models of rent errors, we specified a set of predictor variables measuring project characteristics, project operation, project-caused errors, and household characteristics. For models of project-caused errors, we included predictor variables representing project characteristics, project operation and household characteristics.

Unless otherwise noted, we conducted statistical analyses with SURVEY procedures of SAS 9.2, with a Jackknife replicate weights procedure to compensate for design effects (with exception of un-weighted statistics). 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 procedure of SURVEYLOGISTIC. For initial variance analysis we used PROC MIXED for estimating two level variance and SAS conventional procedures to examine raw data and residual scores of the predicted gross error.

Findings

The analysis generated regression coefficients and related significance test statistics to establish whether or not an effect exists beyond chance, i.e., statistically significant. We also present R-square estimates to show the model fit, or the extent to which the model accounted for the variance of the outcome variables. To assess relative effect size of predictors, we calculated the proportion of the total variance of gross error accounted for by each group of predictor variables. In addition, we provided the effect size measured with Cohen's f^2 for predictor groups, not individual predictor variables.⁶

⁶ The effect size for multiple regression analysis may be assessed by comparing the change of the R^2 . Given an R^2_A value resulting from an equation with a set of independent variables A, and an R^2_{AB} value generated from an equation with the A and another set of independent variables B, Cohen's f^2 is commonly used in the context of sequential (or nested) multiple regression analyses (Cohen, 1988). The f^2 effect size measure for multiple regression is defined as:

$$f^2 = \frac{(R^2_{AB} - R^2_A)}{1 - R^2_{AB}}$$

Gross Rent Error

We separately tabulated statistics for two groups of households: those with gross rent error and those without. This offers a preliminary view of the predictor variables differentiated by gross rent error. Exhibit F-1 presents statistics of the predictor variables by the dichotomously-coded gross rent error (with or without an error of \$5 or more). For statistics of the predictor variables for the whole population, see Attachment 2. We used two-letter abbreviations to denote the four sets of predictors: PC for project characteristics, PO for project operations, PE for project-caused errors, and TC for household characteristics.

An overlap between the two household groups' estimated ranges of a given variable's mean at 95 percent confidence level suggests that the predictor was not significantly different by the gross rent error status. Identifying predictors that significantly differed by the rent error status is a way to describe the two household groups with regard to the likelihood of having gross error. We found that the group *without* gross error had statistically significant characteristics including⁷:

- They were less likely to be receiving assistance through PHA-administered Section 8 program (there was no difference between the other program types);
- They were receiving assistance through projects that had lower rates of certification staff;
- They were receiving assistance through projects that engaged more third parties in obtaining verification information;
- They had high rates of project-caused errors in all but two types, (percentage of items without written verification and consistence error);
- They had on average, smaller household size, lower total annual income, fewer bedrooms, and fewer counts of earned incomes and other incomes, fewer total counts of incomes and expenses, and fewer counts of allowances.

Exhibit F-1
Unweighted Predictor Variables Examined for Modeling: Households
With and Without Gross Rent Error

Predictors	Without Gross Rent Error (n = 1,637)				With Gross Rent Error (n = 765)				
	Mean	Std error of mean	95% CL for mean		Mean	Std error of mean	95% CL for mean		
Project Characteristics									
PHA-Administered Section 8	0.304	0.011	0.281	0.326	0.393	0.018	0.359	0.428	*
Public Housing	0.349	0.012	0.326	0.372	0.305	0.017	0.272	0.337	
Units per 10 staff	5.467	0.184	5.106	5.828	5.933	0.369	5.209	6.658	
% certification staff	0.408	0.005	0.398	0.419	0.444	0.009	0.427	0.461	*
# of project staff	20.635	1.159	18.362	22.908	22.682	1.626	19.491	25.874	
% experienced certification staff (≥5 years)	0.055	0.002	0.050	0.059	0.055	0.004	0.048	0.062	
% new staff	0.085	0.004	0.077	0.092	0.098	0.007	0.084	0.111	

⁷ Statistically significant characteristics are also denoted in table F-1 by an asterisk(*) in the right column.

Predictors	Without Gross Rent Error (n = 1,637)				With Gross Rent Error (n = 765)				
	Mean	Std error of mean	95% CL for mean		Mean	Std error of mean	95% CL for mean		
% turnover	0.060	0.003	0.053	0.067	0.062	0.005	0.051	0.072	
Require more than a H.S. degree	0.252	0.011	0.231	0.273	0.282	0.016	0.250	0.314	
# of housing experiences required	2.439	0.032	2.376	2.502	2.481	0.045	2.392	2.570	
Experienced staff: freq always trained	0.951	0.005	0.940	0.961	0.939	0.009	0.922	0.956	
# experienced staff: freq/always trained	2.555	0.030	2.497	2.614	2.545	0.042	2.462	2.628	
Project Operations									
Verified items both during move-in and recertification by in-person interview	0.924	0.007	0.911	0.937	0.901	0.011	0.879	0.922	
Verified items during move-in only: detail for 4 sets info	0.141	0.009	0.124	0.157	0.165	0.013	0.138	0.191	
Verified items during recert only: detail for 4 sets info	0.175	0.009	0.157	0.194	0.195	0.014	0.167	0.223	
10% plus non-English speakers	0.280	0.011	0.258	0.302	0.310	0.017	0.277	0.343	
Asked about all incomes during both move-in and recertification	0.935	0.006	0.923	0.947	0.956	0.007	0.941	0.970	
Follow-up verification 3rd party	0.879	0.008	0.863	0.895	0.878	0.012	0.855	0.902	
Asked about all expenses during both move-in and recertification	0.908	0.007	0.894	0.922	0.931	0.009	0.913	0.949	
# days before recertification	10.953	0.067	10.821	11.084	10.929	0.099	10.734	11.124	
Third party cooperation level	0.148	0.009	0.131	0.165	0.095	0.011	0.075	0.116 *	
# follow-up verification activities	5.153	0.034	5.087	5.219	5.191	0.050	5.093	5.288	
Review files weekly or monthly	0.539	0.012	0.515	0.563	0.523	0.018	0.487	0.558	
Review file by outsiders	0.728	0.011	0.706	0.749	0.737	0.016	0.706	0.769	
Freq/always monitored/reviewed by external orgs	0.429	0.012	0.405	0.453	0.446	0.018	0.410	0.481	
# items freq/always monitor w/ technology	4.769	0.056	4.660	4.879	4.625	0.078	4.471	4.779	
Answer policy questions	0.987	0.003	0.981	0.992	0.992	0.003	0.986	0.998	
Use software to calculate rent	0.968	0.004	0.960	0.977	0.953	0.008	0.938	0.968	
# computer key functions re: error	4.916	0.008	4.899	4.932	4.919	0.012	4.895	4.943	

Predictors	Without Gross Rent Error (n = 1,637)				With Gross Rent Error (n = 765)				
	Mean	Std error of mean	95% CL for mean		Mean	Std error of mean	95% CL for mean		
Project-Caused Errors									
% of items with transcription error	0.145	0.006	0.133	0.157	0.337	0.011	0.316	0.357	*
% of items without written third-party verification	0.054	0.005	0.044	0.064	0.072	0.008	0.056	0.087	
Any calculation error	0.067	0.006	0.054	0.079	0.105	0.011	0.083	0.126	*
Overdue recertification error	0.005	0.002	0.002	0.009	0.025	0.006	0.014	0.036	*
Consistency error	0.169	0.009	0.151	0.187	0.214	0.015	0.185	0.244	
Transcription error	0.263	0.011	0.242	0.285	0.644	0.017	0.610	0.678	*
Administrative error	0.300	0.011	0.278	0.322	0.665	0.017	0.632	0.699	*
Procedure error	0.212	0.010	0.192	0.232	0.273	0.016	0.242	0.305	*
Household Characteristics									
# of household members	1.996	0.034	1.930	2.062	2.331	0.053	2.227	2.435	*
Total annual income (in \$1000)	11608.014	235.021	11147.040	12068.988	14406.847	310.681	13796.957	15016.737	*
# of bedrooms	1.748	0.024	1.701	1.796	1.986	0.035	1.917	2.055	*
Earned income amount	0.284	0.015	0.255	0.313	0.595	0.032	0.532	0.658	*
Other income amount	0.228	0.013	0.203	0.252	0.354	0.024	0.307	0.402	*
Public assistance income amount	0.108	0.008	0.092	0.123	0.142	0.015	0.114	0.171	
Pension income amount	0.870	0.022	0.828	0.913	0.956	0.038	0.882	1.029	
Household head age	51.566	0.491	50.602	52.530	50.098	0.678	48.767	51.429	
# of income and expenses	2.447	0.055	2.340	2.554	3.731	0.105	3.525	3.936	*
# of allowances	1.155	0.015	1.126	1.183	1.429	0.024	1.381	1.476	*
Household w/ disabled elderly	0.565	0.012	0.541	0.589	0.533	0.018	0.498	0.569	

* The two groups differ significantly in the predictor variable at $p < .05$ level.

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

Multiple Regression Models. We specified four multiple linear regression equations 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 cumulatively added into the equation in a sequence (a procedure known as sequential modeling). The resulting statistics show the effect of predictors that were added into the equation, the changing effects of the previously entered predictors, and the model fit. The first model (Model 1) included only project characteristics variables. The second model (Model 2) added project operation variables in addition to Model 1 variables. The third model (Model 3) added project-caused error variables in addition to Model 2 variables. Finally, Model 4 included all four sets of variables representing the specified four constructs, namely, project characteristics, project operation, types of project-caused error, and household characteristics.

The estimated intercept presented a reference point for interpreting estimates of predictor effects on gross rent error from each model. For example, in Model 3, the intercept estimated in log scale 0.934, equivalent to \$2.54.⁸ This was the expected average gross error of a “reference” group of households that had a zero value on each predictor variable in the model. For binary coded predictors, for example, Public Housing and PHA-administered Section 8, the zero value represented the owner-administered program; and for project-caused errors, the zero value indicated error free of a particular type. For household-level interval predictors that were rescaled by centering, the “reference” households were characterized by the mean value of a given predictor, e.g., for total annual income, the centered zero value was the average annual income of the sample.

A coefficient estimate for a predictor, if statistically significant, represented the difference from the “reference” value in gross rent error associated with this predictor. We focused on interpreting the regression coefficients that were statistically significant ($p < .05$ or smaller) as they represented effects that were unlikely to be observed due to chance. For predictors of key project factors, we may briefly discuss the findings even if the estimates were not significant.

Exhibit F-2

Log Gross Rent Error Accounted for by Selected Variables: Multiple Regression Coefficients and Derived Dollar Value Net Effects from Sequential Regression Models with Design Effect Adjusted

Predictors	Model 1			Model 2			Model 3			Model 4		
	Coefficient		\$	Coefficient		\$	Coefficient		\$	Coefficient		\$
Intercept	1.344	***	3.83	1.106	*	3.02	0.940		2.56	1.159	*	3.19
Project Characteristics												
PHA-Administered Section 8	0.220	*	0.95	0.262	*	0.90	0.331	**	1.00	0.254	*	0.92
Public Housing	-0.037			0.001			-0.032			-0.025		
% certification staff	0.208			0.147			0.090			0.083		
% experienced certification staff (≥5 yrs)	0.096			0.216			0.310			0.314		
% new staff	0.437			0.343			0.355			0.307		
% turnover	-0.291			-0.170			0.004			-0.004		
Require more than a H.S. degree	0.166			0.142			0.007			0.048		
# of housing experiences required	0.021			0.031			0.060			0.059		
# experienced staff: freq/always trained	-0.280			-0.240			-0.195			-0.206		
Exp. staff: freq/always trained	0.008			0.009			0.004			0.002		
Units per 10 staff												
Project Operation												
# days before recertification				0.000			0.007			0.003		
Verified items both during move-in and recert by in-person interview				-0.131			-0.065			-0.063		
Verified during move-in only: detail for 4 sets info				0.214			0.202			0.128		

⁸ Dollar amount of the intercept is e^l , where e is a constant approximately 2.718, l is the estimated regression intercept in log scale. To convert coefficients in log scale to dollar amount, we add the log-scale estimate of a given predictor to the intercept log value and convert the sum of log-scale values into dollar amount. The difference between the resulting dollar amount and the intercept-equivalent dollar amount is the estimated predictor effect in dollar amount of gross rent error. For example, in Mode 3, the difference associated with predictor “PO: group cooperation level,” the log estimate is $-.248$ ($p < .05$), other things being equal, this effect decreased the gross error ($-\$.56$) from the reference group’s estimates ($e^{(.94 - .248)} - e^{.94} = 1.99 - 2.55 = -.56$).

Predictors	Model 1		Model 2		Model 3		Model 4			
	Coefficient	\$	Coefficient	\$	Coefficient	\$	Coefficient	\$		
10% plus non-English speakers			0.032		-0.032		0.010			
Asked about all incomes during both move-in and recertification			0.256		0.265		0.250			
Asked about all expenses during both move-in and recertification			-0.017		-0.039		-0.029			
Third party cooperation level			-0.345	**	-0.88	*	-0.56			
# follow-up verification activities			0.074		0.075		0.069			
Follow-up verification 3rd party			-0.099		-0.130		-0.101			
Review files weekly or monthly			-0.116		-0.108		-0.139			
Review file by outsiders			0.055		0.034		0.014			
Freq/always monitor/review externals			0.042		0.070		0.044			
# items freq/always monitor w/ technology			-0.023		-0.026		-0.016			
Method for finding answers to policy questions			0.567	*	2.31		0.405			
Use of software to calculate rent			-0.333		-0.243		-0.371			
# computer key functions re: error			-0.071		-0.107		-0.072			
Project-Caused Error										
% items with transcription error					0.650	**	2.35	1.025	***	5.69
% items without written third-party verification					0.199			-0.008		
Any calculation error					0.206			0.113		
Overdue recertification error					1.111	*	5.21	1.222	**	7.63
Consistency error					0.062			-0.092		
Transcription error					1.299	***	6.83	0.851	***	4.27
Administration error					-0.353			-0.399		
Procedure error					0.053			0.152		
Household Variables										
# of household members								-0.067		
Total annual income (in \$1000)								-0.012		
# of bedrooms								0.042		
Earned income amount								0.504	***	2.09
Other income amount								0.271	**	0.99
Public assistance income amount								0.336	***	1.27
Pension income amount								0.068		
Household head age								-0.002		
# of income and expenses								0.074	**	0.24
# of allowances								0.470	***	1.91
Household w/ disabled elderly								-0.100		
R-square	0.016	***	0.032	***	0.208	***	0.296	***		
Adjusted R-square	0.012		0.022		0.196		0.282			
Cohen's f ²	0.012		0.010		0.217		0.120			
% variance accounted for	0.009		0.010		0.175		0.086			

*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).

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

With Model 1, relative to the reference group and net of other factors, PHA-administered Section 8 households tended to have a higher gross rent error (log scale .222, equivalent to an increase of \$.95); whereas Public Housing households did not appear to differ from the reference group as its coefficient was not significantly different from zero. In the subsequent models with incrementally more predictors, the estimate for the Section 8 difference remained significant, with estimated log scale .254, equivalent to \$.92 higher than the reference group. This finding suggests that net of the effects of other variables in the model, Section 8 households tended to have higher gross error. None of the project characteristic variables were found to associate with gross error statistically significantly.

Models 2, 3 and 4 revealed two indicators of project operation were significantly related to gross error, net of other effects. One was the measure of whether the project cooperated with various third parties (tenants, employers, banks, social services, health care providers, education institutions, and insurers) to obtain verification information. The effect implies that projects engaged in such cooperation tended to have lower gross error (log scale -.345 and converted to \$.88). The difference continued to be significant with inclusion of project-caused error measures in Model 3, but became not significant as estimated in Model 4 after household variables entered the equation. The finding indicates the value of cooperation with various groups in gathering verification data to reduce rent error, though the effect seemed somewhat overlapped with that of household characteristics as the latter apparently accounted for the difference, i.e., making it no longer statistically significant.

In Model 2, another project operation measure, whether projects used various sources to resolve questions on HUD policies, appeared as a statistically significant predictor of higher rent error (log scale .567 and equivalent to \$2.31). Hardly interpretable, however, the effect seemed artificial as the inclusion of project errors rendered it not significant in Model 3.

Estimates from Models 3 and 4 for project-caused errors seemed informative. Percentage of items with transcription error, overdue recertification error, and transcription error were found strongly, positively, and significantly related to gross rent error. In Model 4, holding household factors and other project factors equal, the estimates for the three project error measures were still significant and of considerable large magnitudes. The statistics suggest that, controlling for other factors in the model:

- Percentage of items with transcription error predicted substantially higher gross error, with a log estimate 1.025 and equivalent \$5.69 relative to the reference group;
- Overdue recertification error had the largest net increasing effect on the gross error with a log scale 1.222 or \$7.63; and
- Transcription error had an effect of .851 in log scale or \$4.27 increasing the gross error.

It is remarkable that these findings were largely consistent with those in FY 2008 and FY 2009. Clearly, these types of project-made error continued to be a major source of rent payment error. Also consistent with prior years, the effects of other measures of project errors, i.e., calculation error and administration error were not found to be statistically significant and substantially large.

With Model 4, we estimated household characteristics relating to gross rent error. Again, the large patterns were highly consistent with prior studies. Net of other effects, households with complex financial conditions in terms of more sources of income (earned, public assistance, and other incomes) and more items of expenses and allowance were likely to have larger gross rent error. Estimates for household head age and number of bedrooms were related to lower gross error—a similar pattern as that found in prior studies, though not significant statistically.

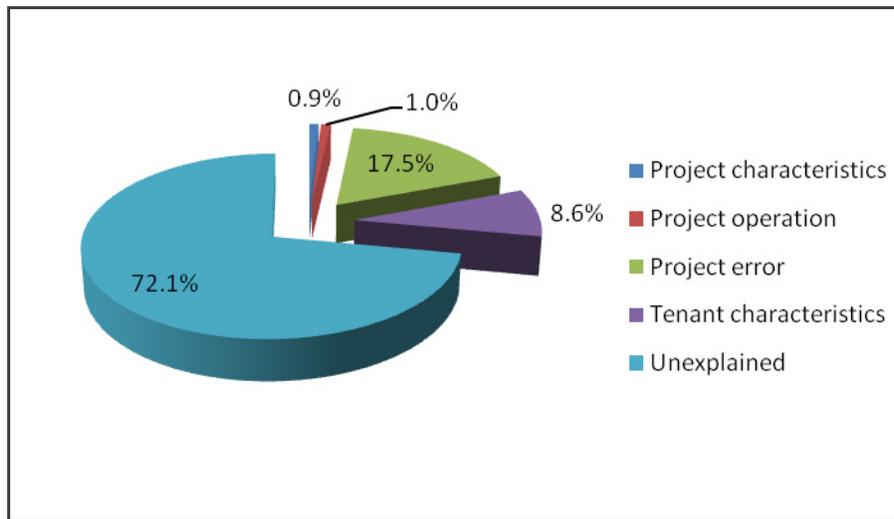
In short, consistent with findings from the studies for FY 2007, FY 2008, and FY 2009, the FY 2010 data analysis suggested gross error was related to project and household factors. The most substantiated findings were:

- Project-caused errors, particularly, overdue certification and transcription errors, contributed strongly to increased gross error.
- Households that were characterized with complex financial conditions had greater gross error.
- Defining and measuring project characteristics and operation remained to be a challenge as many such indicators in the previous and the current analyses failed to account for gross rent error.

Relative Size of Effects by Characteristic Groups. After adding the predictor variables into the sequential models incrementally, the indicators that accounted for the largest share of the variance of the gross rent error were project-caused errors (17.5 percent), followed by household characteristics, and financial conditions (8.6 percent). The proportion of gross rent error variance explained by project characteristics and by project operation amounted respectively, only 0.9 percent and 1.0 percent (Figure F-3).

Corresponding to variance partitioning, the effect size estimates with Cohen's f^2 also showed that project-caused errors represented the bulk of the effects on rent error (.217); measures of household characteristics also had a sizable effect (.120); and project characteristics/operation effects were again found to be small (.022).

Figure F-3
Proportion of Variance of Gross Rent Error Accounted for by Project and Household Variables:
Multiple Regression Analysis with Design Effect Adjusted



Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

Overpayment and Underpayment. We analyzed overpayment and underpayment to offer additional information for program improvement to address the issues specific to these two forms of error. We specified two equations with the same predictors as in modeling gross error to explain, respectively, overpayment and underpayment in logarithm. Exhibit F-3 presents the estimates of regression coefficients.

The model fit was considerably poorer than that of the gross error models. As indicated by R-square estimates, approximately 12 percent and 15 percent of the total variance, respectively, of underpayment and overpayment, were accounted for by the models. Project operation, project-caused errors, and household background measures were associated with underpayment in patterns similar to those with gross error. For example, other things being equal, Section 8 households tended to have slightly more underpayment than the reference group (log scale .266 converted to \$.73); cooperation with various groups to obtain verification information was associated with a lower underpayment (-.130 or \$-.29); a higher experienced certification staff ratio was associated with greater underpayment (.606 or \$1.99); and percentage of items with transcription errors was related to higher underpayment (.564 or \$1.81). Household characteristics were related to underpayment in ways similar to their relationships with gross rent error, i.e., net of other factors, households with earned income, more sources of income and expenses, and more allowances tended to have greater underpayment. One exception was the total annual income, with a negative albeit small effect on underpayment (-.014 or \$-.03), net of other factors.

Modeling overpayment, no program type net differences was found. A project operation measure of whether projects used various sources to resolve questions on HUD policies was statistically significant in predicting higher overpayment (log scale .344 and equivalent to \$.56). The effect was difficult to interpret, probably needing more analysis given its low significance level ($p < .05$) and modest effect size. Of the project-caused errors, only transcription errors was identified as related to higher overpayment (.649 or \$1.24), net of other effects. The household

variables were related to overpayment in a similar pattern as they predicted gross rent error. Other things being equal, household with earned income, other incomes, and public assistance income tended to have higher overpayment.

Exhibit F-3
Log Under- and Overpayment Rent Errors Accounted for by Selected Variables: Multiple Regression Coefficients and Derived Dollar Value Net Effects with Design Effect Adjusted

Predictors	Underpayment			Overpayment		
	Coefficient		\$	Coefficient		\$
Intercept	0.871	*	2.39	0.305		1.36
Project Characteristics						
PHA-administered Section 8	0.266	*	0.73	-0.029		
Public Housing	0.035			-0.055		
% certification staff	0.157			-0.039		
% experienced certification staff (≥5 yrs)	0.606	*	1.99	-0.366		
% new staff	0.124			0.196		
% turnover	0.301			-0.343		
Require more than a H.S. degree	-0.029			0.073		
# of housing experiences required	0.036			0.026		
# experienced staff: freq/always trained	-0.082			-0.131		
Units per 10 staff	0.002			0.000		
Project Operation						
# days before recertification	-0.002			-0.002		
Verified items during both move-in and recert by in person interview	-0.055			-0.036		
Verified items during move-in only: detail for 4 sets info	0.137			0.009		
10% plus non-English speakers	0.132			-0.094		
Asked about all incomes during both move-in and recertification	0.167			0.059		
Asked about all expenses during both move-in and recertification	0.078			-0.090		
Third-party cooperation level	-0.130	*	-0.29	-0.038		
# follow-up verification activities	0.018			0.044		
Follow-up verification 3rd party	0.120			-0.197		
Review files weekly or monthly	-0.046			-0.076		
Review file by outsiders	-0.047			0.051		
Freq/always monitored/reviewed by external orgs	0.015			0.036		
# items freq/always monitor w/ technology	-0.010			-0.008		
Answer policy questions	-0.011			0.344	*	0.56
Use of software to calculate rent	-0.105			-0.280		
# computer key function re: error	-0.120			0.058		

Predictors	Underpayment			Overpayment		
	Coefficient		\$	Coefficient		\$
Project-Caused Errors						
% items with transcription error	0.564	**	1.81	0.404		
% items without written third-party verification	-0.049			0.080		
Any calculation error	-0.134			0.272		
Overdue recertification error	0.667			0.662		
Consistency error	-0.132			0.037		
Transcription error	0.195			0.649	*	1.24
Administration error	-0.029			-0.405		
Procedure error	0.107			0.053		
Household Variables						
# of household members	0.001			-0.064		
Total annual income (in \$1000)	-0.014	**	-0.03	0.005		
# of bedrooms	-0.026			0.057		
Earned income amount	0.205	*	0.54	0.299	***	0.47
Other income amount	-0.032			0.313	***	0.50
Public assistance income amount	-0.070			0.389	**	0.65
Pension income amount	0.004			0.097		
Household head age	-0.002			-0.002		
# of income and expenses	0.039	*	0.09	0.022		
# of allowances	0.411	***	1.21	0.039		
Household w/ disabled elderly	-0.036			-0.117		
R-square	0.124	***		0.150	***	
Adjusted R-square	0.107			0.134		

*p < .05, **p < .01, ***p < .001 (test with the null hypothesis that a coefficient [or R²]=0; a significant result indicates that the corresponding variable(s) is associated with the dependent variable).

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

Project-Caused Errors

Of project-caused errors, our analysis showed that overdue recertification error, transcription error, and the rate of items with transcription error contributed to higher gross rent error or under- and over-payment. To explore the underlying factors leading to these project errors, we modeled these measures of project-caused errors and a total counts of project errors, with three sets of predictors: project characteristics, project operation, and household characteristics. The only project-caused error considered in the modeling was procedure error, because other indicators of project errors were excessively correlated (or overlapped) with the outcome measures in the models.

Two measures, overdue recertification error and transcription error, were binary coded (indicating whether or not the error occurred) and analyzed using a multiple logistic regression technique. The rate of items with transcription error and the total project error count were interval indicators and analyzed with linear regression. Exhibit F-4 presents the log scale

estimates (log odds) and Max-rescaled R^2 from the logistic models of the two errors in binary coding.⁹ A logit coefficient indicates the extent to which a given predictor is associated with the likelihood of the given error.

The overdue recertification model fit poorer than the transcription error model, with adjusted R^2 (roughly interpreted as the proportion of variance accounted for by the model) respectively, .195 and .290. To identify salient factors contributing to the project-caused errors, we highlight predictor variables with a significant logit estimate (with $p < .05$). The following predictors were significantly related to the two types of error, under the condition of *all other modeled factors being equal*.

Overdue recertification error:

- Households managed by projects with a high rate of experienced (5 or more years) (re)certification staff were less likely to have overdue recertifications (logit -9.508);
- Larger household size predicted higher likelihood of overdue recertification (logit 0.613); and
- Households with more income and expenses were less likely to have overdue recertification (logit -0.245).

Transcription error:

- Households with procedure error were more likely to have transcription error (logit 0.465); and
- Households' total annual income, earned income, other income, public assistance income, counts of incomes and expenses, and allowances were related to greater probability of transcription error (respective logits 0.027, 0.463, 0.237, 0.170, and 0.437). Note this pattern was the same as that for gross rent error.

⁹ We choose to present logit estimates rather than odds ratio because logits can be understood in a similar way as linear regression coefficients. The logistic regression models the relationship between the outcome $Y=I$ (a given error in our analysis) and the predictor variables through the logit function, the natural logarithm of odds of $Y=I$. The model assumes a linear relation between the log of odds and predictor variables, X_1, X_2, \dots, X_k , and can be written as: Let $p=P(Y=I)$, then $\log(p/(1-p)) = \text{intercept} + b_1X_1 + b_2X_2 + \dots + b_kX_k$. Max-rescaled R^2 allows the maximal value of 1 and is recommended as a better approximation of the variance explained by the logistic model, comparable with generalized R^2 (Hosmer & Lemeshow, 2001).

Exhibit F-4
Project-Caused Major Errors Accounted For By Selected Variables:
Multiple Logistic Regression Coefficients with Design Effect Adjusted

Predictors	Overdue		Transcription Error	
	Recertification Error			
Intercept	-3.636		-0.597	
Project Characteristics				
PHA-administered Section 8	1.275		0.157	
Public Housing	0.702		-0.001	
% certification staff	1.148		0.068	
% experienced certification staff (≥5 years)	-9.508	*	0.078	
Experienced staff: freq/always trained	-0.414		-0.019	
# of housing experiences required	-0.338		-0.061	
Units per 10 staff	0.008		0.006	
Project Operations				
# days before recertification	0.020		-0.022	
Verified items during both move-in and recertification by in-person interview	-0.809		-0.156	
Verified items during recertification only: detail for 4 sets info	-0.139		-0.093	
10% plus non-English speakers	-0.668		0.212	
Asked about all incomes during both move-in and recertification	-1.200		0.250	
Review files weekly or monthly	-0.233		-0.082	
Review file by outsiders	0.028		0.151	
# items freq/always monitor w/ technology	-0.669		-0.045	
Use of software to calculate rent	0.018		0.046	
Project-Caused Errors				
Procedure Error			0.465	***
Household Characteristics				
# of household members	0.613	*	0.054	
Total annual income (in \$1000)	-0.060		0.027	***
# of bedrooms	-0.998		-0.003	
Earned income amount	0.616		0.463	***
Other income amount	-0.138		0.237	*
Public assistance income amount	-0.081		0.022	
Pension income amount	0.348		0.135	
Household head age	0.028		0.005	
# of income and expenses	-0.245	*	0.170	***
# of allowances	0.542		0.437	**
Household w/ disabled elderly	-0.724		-0.238	
Pseudo R-square [#]	0.036	***	0.260	***
Max rescaled R-square	0.195	***	0.290	***

*p < .05, **p < .01, ***p < .001 (test with the null hypothesis that a coefficient [or R²] = 0; a significant result indicates that the corresponding predictor variable is associated with the dependent variable.

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

We specified two linear regression models of, respectively, percentage of item transcription error and the total counts of project-caused errors. The model fit for the two models was reasonably good, with the adjusted R-square .260 and .360 respectively (Exhibit F-5). We highlight the

statistically significant and substantively meaningful predictors in the models, with qualification that all other factors are held constant in each model.

Percentage of items with transcription error:

- Households receiving assistance through projects with higher case loads (units per staff) tended to have a higher rate of items with transcription error, with a .02 percent increase of the error rate for every 10-unit increase per staff;
- Households whose project staff asked about all sources of incomes when processing both move-ins and recertifications tended to have a 2.8 percent increase in the rate of items with transcription error;
- Households receiving assistance through projects that used outside personnel to review all files tended to have mildly lower rate (.05 percentage point) of items with transcription error;
- Households with procedure error tended to have a 8 percent higher rate of items with transcription error;
- Households' total annual income, earned income, other income, and counts of incomes and expenses were related to higher rate of items with transcription error (respective 0.03, 3.4, 0.20, and 0.19 percentage points); and
- Households with a disabled or elderly member tended to have 6 percent lower rate of items with transcription error.

Total number of project-caused errors:

- Households with procedure error tended to have 1.379 more errors in total number of errors than the reference group.
- Households' total annual income, earned income, other income, counts of incomes and expenses, and allowance were related to more errors in total error counts, respectively estimated as .007, .218, .172, .094, and .163.

Exhibit F-5
Project-Caused Errors Accounted For By Selected Variables:
Multiple Linear Regression Coefficients with Design Effect Adjusted

Predictor	Percent Item Transcription Error		Total N of Error	
Intercept	0.242	**	0.799	**
Project Characteristics				
PHA-administered Section 8	0.015		0.107	
Public Housing	-0.014		-0.028	
% certification staff	0.006		0.116	
% experienced certification staff (≥5 years)	0.005		0.013	
Experienced staff: freq/always trained	-0.007		-0.026	
# of housing experiences required	-0.005		-0.026	
Units per 10 staff	0.002	*	0.004	

Predictor	Percent Item Transcription Error		Total N of Error	
Project Operations				
# days before recertification	-0.003		-0.011	
Verification, both move-in and recertification by in-person interview	-0.034		-0.074	
Verification, recertification: only detail for 4 sets info	-0.009		-0.033	
10% plus non-English speakers			0.101	
Asked about all incomes	0.028	**	0.158	
Review files weekly or monthly	0.052		-0.012	
Review file by outsiders	-0.005	*	0.077	
Freq/always monitor/review externals	0.024		-0.047	
# freq/always monitor w/ technology	-0.018		0.021	
Use software to calculate rent	0.006		-0.176	
Project-Caused Errors				
Procedure error	0.081	***	1.379	***
Household Characteristics				
# of household members	-0.002		0.027	
Total annual income (in \$1000)	0.003	**	0.007	*
# of bedrooms	-0.010		0.004	
Earned income amount	0.034	**	0.218	***
Other income amount	0.022	*	0.172	**
Public assistance income amount	-0.021		0.008	
Pension income amount	0.005		0.065	
Household head age	0.001		0.001	
# of income and expenses	0.019	***	0.094	***
# of allowances	-0.007		0.163	**
Household w/ disabled elderly	-0.060	*	-0.063	
R-square	0.117	***	0.368	***
Adjusted R-square	0.260	***	0.360	***

*p < .05, **p < .01, ***p < .001 (test with the null hypothesis that a coefficient [or R²]=0; a significant result indicates that the corresponding variable is associated with the dependent variable).

N/A marks a predictor that was not included in the equation due to its conceptual redundancy and/or empirical excessive collinearity with the dependent variable.

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

Summary

With the same approach to multivariate modeling as in the FY 2009 study, this study identified some patterns under which rent errors related to project and household variables. The patterns were similar to those reported in previous analyses. Other things being equal, gross rent error and underpayment amounts were higher among PHA-administered Section 8 households. The net effects of this program type difference were consistent with the results from the bivariate cross-tabulations presented in the main text of this report (see Exhibits ES-1, ES-3).

Project-caused errors accounted for a large proportion of gross rent error. Of the project-caused errors, transcription errors and overdue recertification errors predicted strongly in gross error, both contributing to higher gross error consistently shown in bivariate comparison and multiple regression analysis. Transcription error and the rate of items with transcription error, respectively

measured as dichotomous and interval indicators, were also related to higher overpayment and underpayment. These findings were also consistent with that from the FY 2008 and FY 2009 analyses, underscoring the importance of reducing project-made errors, particularly transcription errors and overdue recertification to minimize rent errors.

Household variables accounted for gross rent error, overpayment and underpayment in similar patterns as identified in prior studies. Essentially, variables indicative of complexity of financial conditions and income strongly predicted higher rent errors. These relationships were highly consistent across models and across yearly analyses, suggesting robust tenant risk factors that housing benefit certification must cope with.

The impact of project characteristics or project operations remained elusive in the modeling of rent error. One project operation variable, indicating cooperation with various groups to obtain verification information, was found potentially meaningful as it related to lower gross rent error and underpayment error, upon statistical controlling for other factors. It was quite uncertain about the effects of other project variables (e.g., percent of experienced certification staff, and using different sources to answer HUD policy questions), in spite of their statistically significant estimates. Such uncertainties were caused by difficulties in statistics interpretation and less reliable estimates, i.e., modest effect size and low statistical significance level. It is necessary to continue the efforts to refine the concepts and measurement of project administration and operation.

To explore factors influential to project-caused errors, we modeled those that were identified as predictive of rent errors. These were: transcription error (counts and percent) and overdue recertification error. We found that households' complex financial situations were related to these project errors in roughly similar ways as they were related to rent error. Project characteristics and operation, however, were again not found to be very meaningful. A better understanding of housing project management and certification practice is needed in order to develop valid measures of project resources and certification approaches that can explain the rent error.

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Attachment 1: Descriptive Statistics

Weighted Rescaled Variables Used In the Multivariate Analysis (Unweighted n=2,402)

Variable Label	Mean	Std error of mean	95% CL for mean	
Log gross error	1.174	0.032	1.112	1.236
Log overpay	0.52	0.026	0.47	0.571
Log underpay	0.544	0.025	0.495	0.593
Project Characteristics				
PHA-administered Section 8	0.332	0.01	0.313	0.351
Public Housing	0.335	0.01	0.316	0.354
Units per 10 staff	5.616	0.172	5.278	5.953
Units per project staff	21.287	0.944	19.435	23.139
% certification staff	0.42	0.005	0.411	0.429
% full-time certification staff	0.112	0.004	0.104	0.12
% experienced staff (≥5 years)	0.055	0.002	0.051	0.059
% new staff	0.089	0.003	0.082	0.096
% turnover	0.06	0.003	0.055	0.066
Require more than a H.S. degree	0.261	0.009	0.244	0.279
# of housing experiences required	2.453	0.026	2.401	2.504
Experienced staff: freq always trained	0.947	0.005	0.938	0.956
Project Operations				
Verified items during both move-in and recertification by in-person interview	0.917	0.006	0.906	0.928
Verified items during move in only: detail for 4 sets info	0.148	0.007	0.134	0.162
Verified items during recertification only: detail for 4 sets info	0.182	0.008	0.166	0.197
10% plus non-English speakers	0.289	0.009	0.271	0.307
Asked about all incomes during both move-in and recertification	0.942	0.005	0.932	0.951
Follow-up verification 3rd party	0.879	0.007	0.866	0.892
Asked about all expenses during both move-in and recertification	0.915	0.006	0.904	0.926
# days before recertification	10.945	0.056	10.836	11.054
Third-party cooperation level	0.131	0.007	0.118	0.145
# follow-up verification activities	5.165	0.028	5.11	5.22
Review files weekly or monthly	0.534	0.01	0.514	0.554
Review file by outsiders	0.731	0.009	0.713	0.748
# items freq/always monitor/review by all	6.246	0.027	6.193	6.299
Freq/always monitor/review internals	0.9	0.006	0.888	0.912
Freq/always monitor/review externals	0.435	0.01	0.415	0.454
# items never monitor w/ technology	3.005	0.047	2.914	3.097
# items never/rarely monitor w/ technology	5.277	0.046	5.188	5.366
# items freq/always monitor w/ technology	4.723	0.046	4.634	4.812
Answer policy questions by outside sources	0.948	0.005	0.94	0.957
Answer policy questions	0.988	0.002	0.984	0.993
Use software to calculate rent	0.963	0.004	0.956	0.971
# software functions re: error	4.605	0.029	4.549	4.661

Variable Label	Mean	Std error of mean	95% CL for mean	
# computer all functions	14.719	0.019	14.681	14.756
# computer key function re: error	4.917	0.007	4.903	4.93
Project-Caused Errors				
% of items with transcription error	0.206	0.006	0.195	0.217
% of items without written third-party verification	0.06	0.004	0.051	0.068
Any calculation error	0.079	0.005	0.068	0.089
Overdue recertification error	0.012	0.002	0.007	0.016
Consistency error	0.184	0.008	0.168	0.199
Transcription error	0.385	0.01	0.365	0.404
Administrative error	0.416	0.01	0.397	0.436
Procedure error	0.231	0.009	0.215	0.248
Household Characteristics				
# of household members	2.102	0.029	2.046	2.159
Total annual income (in \$1000)	12499.399	190.104	12126.614	12872.184
# of bedrooms	1.824	0.02	1.785	1.863
Earned income amount	0.383	0.015	0.354	0.412
Other income amount	0.268	0.012	0.245	0.291
Public assistance income amount	0.119	0.007	0.105	0.133
Pension income amount	0.898	0.019	0.86	0.935
Household head age	51.099	0.399	50.317	51.88
# of income and expenses	2.856	0.051	2.755	2.956
# of allowances	1.242	0.013	1.217	1.267
Household w/ disabled elderly	0.555	0.01	0.535	0.575

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

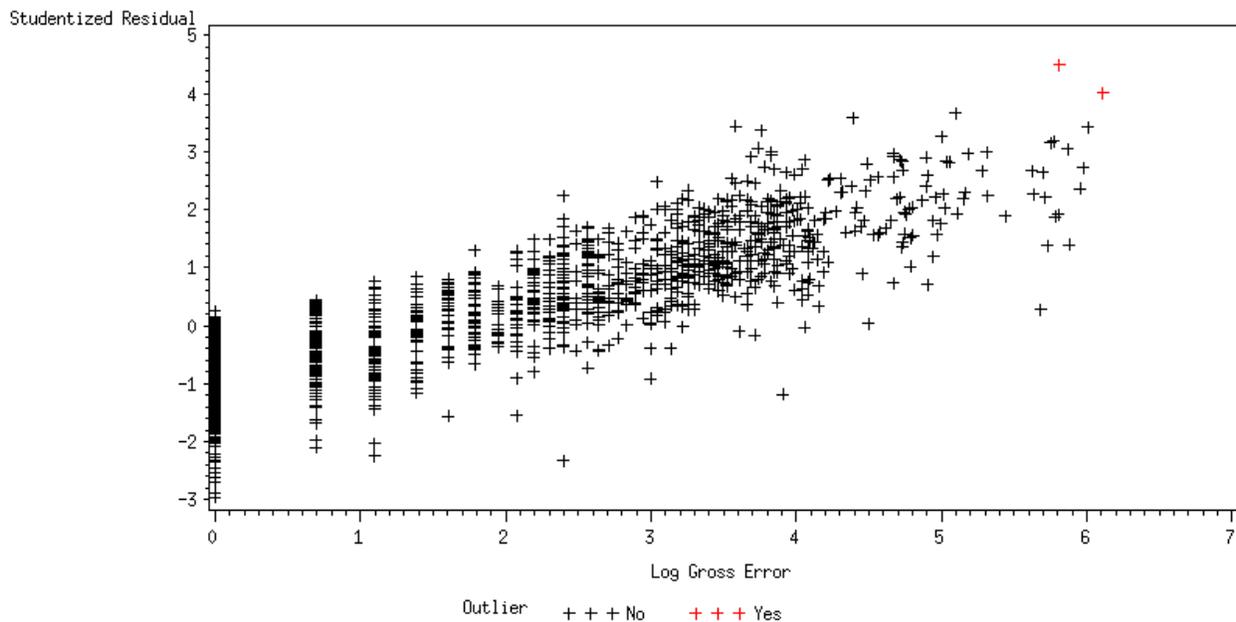
Attachment 2: Residual Analysis and Outlier Identification

The household data on rent error may contain extreme cases whose gross error values were drastically different from the rest of the sample (see figure below). In this study, the problem was more likely due to a different sampling distribution of these cases than measurement errors. Observable by large residuals, outliers often have dramatic effects on the fitted least squares regression function. It is therefore important to study the outlying cases carefully and decide whether to keep them in the models.

We conducted residuals analysis to detect outliers; i.e., Y observations whose residuals e_i have substantially different variances $\sigma^2\{e_i\}$. We examined the magnitude of each e_i relative to its estimated standard deviation, a ratio of e_i to $s\{e_i\}$, called the studentized residual, to assess differences in the sampling errors of the residuals.

To detect outlying Y observations, we measured the i th residual e_i with the fitted regression based on all of the cases except the i th one. The reason for excluding the i th case is that if Y_i is far outlying, the fitted least squares regression function based on all cases including the i th case may be influenced to come close to Y_i . In that event, the residual e_i will be small and will not disclose that Y_i is outlying. Excluding the i th case before the regression function is fitted, the least squares fitted value would not be influenced by the outlying Y_i observation, and the residual for the i th case will then tend to be larger and therefore more likely to disclose the outlying Y observation.

**Residual Distributions of Log Gross Error:
Correlation of Studentized Residual Score and Log Gross Error**



Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

Diagnosis of outlying Y observations entailed deleting each case's residual and studentizing it. Each studentized deleted residual t_i was calculated from the residual e_i , the error sum of squares SSE , and the hat matrix values h_{ii} , all for the fitted regression based on the 2,403 cases in the dataset. Each studentized deleted residual t_i follows the t distribution with $n-p-1$ degrees of freedom.

For this study, we defined as outliers the household records with large absolute values of studentized deleted residuals via the Bonferroni test, based on Bonferroni critical value $t(1-\alpha/2n; n-p-1) = 4.0$. The identification code and rent error descriptive statistics for the two deleted cases were shown below.

Observed, Residual, Studentized Residual, and Predicted Log Gross Rent Error Scores for Large-Studentized-Residual Cases: Regression Diagnosis Analysis

HHID	PSU	Observed	Predicted	Residual	Studentized residual	Program type
3021003	30	6.109	1.048	5.061	4.018	2
5121003	51	5.811	1.119	4.693	4.478	2

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire

Attachment 3: Proportion of Gross Rent Error Variance Partitioned by Project and Household Level

Unconditional HLM Model Estimates

Random effects	Estimate	Standard error	Z value/ t value	Probability
Model effects				
Project-level variance	0.2698	0.0452	5.97	<.0001
Household-level variance	3.7515	0.1191	31.5	<.0001
Total variance	4.0213			
Project-level proportion	6.71%			
Fixed effects				
Mean log gross rental error	1.1993	0.03882	30.89	<.0001

Source: HUDQC FY 2010 Household-level data collection and Project Staff Questionnaire