Federal Housing Administration, Washington, DC

Home Affordable Modification Program, Partial Claim Option

Office of Audit, Region 7
Kansas City, KS

Audit Report Number: 2019-KC-0001
April 11, 2019

To: Gisele G. Roget
Deputy Assistant Secretary, Office of Single Family Housing, HU

//**signed**//
From: Ronald J. Hosking
Regional Inspector General for Audit, 7AGA

Subject: FHA Improperly Paid Partial Claims That Did Not Reinstate Their Related Loans

Attached is the U.S. Department of Housing and Urban Development (HUD), Office of Inspector General's (OIG) final results of our review of the Federal Housing Administration's Home Affordable Modification Program (FHA-HAMP) partial claims reinstatement of delinquent loans.

HUD Handbook 2000.06, REV-4, sets specific timeframes for management decisions on recommended corrective actions. For each recommendation without a management decision, please respond and provide status reports in accordance with the HUD Handbook. Please furnish us copies of any correspondence or directives issued because of the audit.

The Inspector General Act, Title 5 United States Code, section 8M, requires that OIG post its publicly available reports on the OIG website. Accordingly, this report will be posted at http://www.hudoig.gov.

If you have any questions or comments about this report, please do not hesitate to call me at 913-551-5870.

Audit Report Number: 2019-KC-0001
Date: April 11, 2019

FHA Improperly Paid Partial Claims That Did Not Reinstate Their Related Loans

Highlights

What We Audited and Why

We audited the Federal Housing Administration (FHA) to ensure that delinquent loans were reinstated to a current state by the use of the partial claim loss mitigation option. We conducted this audit based on the results of an audit of CitiMortgage (Report #2018-KC-1001, March 5, 2018), which found that the lender improperly filed for partial claims before completing the loan modifications and reinstating the loans. Our audit objective was to determine whether FHA improperly paid partial claims that did not reinstate the delinquent loans.

What We Found

FHA improperly paid partial claims that did not reinstate their related delinquent loans. From a sample of 87 partial claims reviewed, FHA paid 47 partial claims totaling more than $2.7 million that did not cure the loan delinquency. By using a statistical projection, we estimated that the FHA insurance fund was unnecessarily depleted by $27.1 million in partial claims.

What We Recommend

We recommend that the Deputy Assistant Secretary for Single Family Housing (1) take corrective action against lenders for the improper partial claims that did not reinstate the delinquent loans and have not been repaid, (2) design controls to protect the insurance fund from improper partial claims that did not reinstate the loans to put $27.1 million to better use, and (3) update the FHA Home Affordable Modification Program guidance, clarifying that upon application of the partial claim funds, the mortgage must be fully reinstated with no unpaid amounts.

Table of Contents

Background and Objective

The Federal Housing Administration (FHA) provides mortgage insurance on loans made by FHA-approved lenders throughout the United States and its territories. It is the largest insurer of mortgages in the world, having insured more than 47.5 million loans since its inception in 1934. FHA mortgage insurance provides lenders with protection against losses as the result of homeowners defaulting on their mortgage loans. The lenders bear less risk because FHA will pay a claim to the lender in the event of a homeowner's default.

The FHA Home Affordable Modification Program (FHA-HAMP) was authorized by the Helping Families Save Their Home Act of 2009. FHA-HAMP is a loss mitigation option, which uses a partial insurance claim to allow the mortgage to be reinstated by establishing an affordable monthly payment and providing for principal deferment as needed. A lender advances the partial claim funds on behalf of a borrower to his or her mortgage in an amount necessary to reinstate the delinquent mortgage to a current state and then files for reimbursement from FHA. The program allows lenders to receive a $500 incentive fee for the successful completion of a partial claim. A promissory note from the borrower for the amount of the partial claim must be executed in the name of the U.S. Department of Housing and Urban Development (HUD) Secretary, and a subordinate mortgage must be obtained and recorded, creating a lien on the property. The borrower must repay to HUD the partial claim loan upon the sale of the property or upon the maturity, payoff, or non-FHA refinancing of the mortgage. Between April 1, 2017, and March 31, 2018, FHA received more than 45,000 partial claims totaling nearly $1.6 billion.

FHA's Office of Single Family Housing and Office of Finance and Budget are responsible for monitoring and processing partial claims. Within the Office of Single Family Housing, the Office of Single Family Asset Management is responsible for establishing policy, and the Quality Assurance Division evaluates lenders' portfolios to identify performance issues. Within the Office of Finance and Budget, the Single Family Claims Branch processes and pays insurance claims, and the Single Family Post Insurance Division conducts postclaim audits.

Our audit objective was to determine whether FHA improperly paid partial claims that did not reinstate the delinquent loans.

Results of Audit

Finding 1: FHA Improperly Paid Partial Claims That Did Not Reinstate Related Loans

FHA improperly paid partial claims that did not reinstate their related delinquent loans. This condition occurred because FHA had no controls to ensure that partial claims resulted in curing the loan's delinquency. As a result, the FHA insurance fund was unnecessarily depleted by an estimated $27.1 million in partial claims, including the lender incentive fees.

Improperly Paid Partial Claims

FHA improperly paid partial claims that did not reinstate their related delinquent loans. From a sample of 87 partial claims reviewed, FHA paid 47 partial claims that did not cure the loan delinquency. Based on these results, we project that FHA paid a total of 831 improper partial claims between April 2017 and March 2018.

A partial claim must reinstate its related delinquent loan to a current state. The mortgage account must have no payments that are due and unpaid after the partial claim funds are applied to the mortgage. Under the FHA-HAMP partial claim option, FHA reimburses a lender for an advancement of funds on behalf of a borrower in an amount necessary to assist in reinstating the delinquent mortgage. A mortgage account remains delinquent when there are payments that are due and not paid. See appendix C for the applicable criteria.

For the sampled loans with improper partial claims, most remained 1 month delinquent after receiving the partial claim, while the rest ranged from 2 to 11 months delinquent. For an example of how the one month delinquencies are improper, a lender told us that one of the partial claims in question did reinstate the delinquent mortgage. However, the loan payment history showed that the loan still had an unpaid mortgage payment after the partial claim funds were applied to the mortgage account. The funds were applied to the borrower's account to pay the loan through June 2017. But, the funds were not applied until July 28, 2017, which left the July 2017 installment still due and unpaid. Therefore, the partial claim did not reinstate the loan, and the loan remained 1 month delinquent.

Lack of Internal Controls

FHA had no controls to ensure that partial claims resulted in curing the loan's delinquency.

FHA did not have system tools to determine whether a loan delinquency was cured when it paid the partial claim. The Single Family Claims Branch processed claims through an automated system. Lenders directly uploaded their claims into the system. The claims processing system could prevent improper payment of a claim by using certain edit checks. However, the system was outdated and did not have an edit check, which would prevent an improper partial claim that did not cure the loan's delinquency from being processed.

FHA also did not determine whether a loan was reinstated by the partial claim as part of its postclaims review or quality assurance review. The Single Family Post Insurance Division performed postclaims audits of the single-family lenders based on an internal risk assessment. The Division performed audits involving partial claims but did not specifically determine whether a partial claim reinstated the delinquent loan. FHA's Quality Assurance Division performed lender-level onsite reviews of origination and servicing of FHA's single-family lenders, including reviews of the proper use of loss mitigation. The Division targeted lenders for reviews based on potential risk factors, but its targeting methodology did not include the loan reinstatement issue.

Depleted FHA Insurance Fund

The FHA insurance fund was unnecessarily depleted by an estimated $27.1 million in partial claims, including the lender incentive fees. From the partial claims reviewed, FHA paid more than $2.7 million in improper partial claims that did not reinstate the delinquent loans. Using statistical sampling procedures to project the audit sample for the period April 2017 through March 2018, we estimated that FHA paid $27.1 million for improper partial claims.

Conclusion

FHA paid improper partial claims that did not reinstate the delinquent loans because it did not have system tools to prevent these partial claims from being paid or monitoring designed to detect the improper partial claims. Based on the amount of improper partial claims paid during the audit period, we estimate that FHA might pay an additional $27.1 million over the next year for partial claims that fail to cure the loan delinquencies.

Recommendations

We recommend that the Deputy Assistant Secretary for Single Family Housing

1A. Take corrective action against lenders for 43 improper partial claims totaling $2.3 million that did not reinstate the delinquent loans, to include repayment of the partial claims where appropriate. This amount excludes $336,699 for four partial claims that have already been repaid (see appendix D).

1B. Design controls to protect the insurance fund from improper partial claims that did not reinstate the loans to put $27.1 million to better use.

1C. Update the FHA-HAMP guidance, clarifying that upon application of the partial claim funds, the mortgage must be fully reinstated with no unpaid amounts.

Scope and Methodology

We performed our audit between July 2018 and February 2019. Our audit generally covered April 1, 2017, to March 31, 2018. We conducted our onsite work at HUD headquarters at 451 7th Street SW, Washington, DC.

To accomplish our objective, we

- interviewed HUD employees responsible for the program under review,
- reviewed HUD handbooks and mortgagee letters,
- reviewed HUD's policies and procedures, and
- reviewed loan documents related to partial claims in our sample.

The Single Family Data Warehouse (SFDW) is a large and extensive collection of database tables, organized and dedicated to support the analysis, verification, and publication of single-family housing data. Using this system, we identified 1,841 partial claims received between April 1, 2017, and March 31, 2018, totaling more than $65.8 million. These partial claims were issued on mortgages with indications that they were not brought current after receiving funds from the partial claims program. These loans did not have reinstatement code 98 (Reinstated After Loss Mitigation Intervention) reported by lenders within a year before or 3 months after the lenders requested a partial claim from FHA. We selected a sample of 87 of those partial claims totaling more than $5.3 million. This sample included 70 statistically selected partial claims plus 17 partial claims that were excluded from the statistical universe as outliers. See appendix E for a detailed explanation of our sample selection and results projection.

For each partial claim in our sample, we requested documentation from the lenders, including partial claim and loan modification documents, the loan payment history, and a copy of the claim form filed with HUD. We reviewed this information to determine whether the partial claims reinstated their related loans.

We relied in part on data maintained by HUD in its SFDW database and the Neighborhood Watch Early Warning System, which displays information from SFDW databases. Specifically, we relied on the data to identify partial claims that were received during our audit period. Although we did not perform a detailed assessment of the reliability of the data, we verified the fields used to determine our sample universe against documentary evidence supplied by the lenders for our 87 sampled partial claims. Based on work performed, we determined that the computer-processed data were sufficiently reliable for the purposes of this report.

We conducted the audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective(s). We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

Internal Controls

Internal control is a process adopted by those charged with governance and management, designed to provide reasonable assurance about the achievement of the organization's mission, goals, and objectives with regard to

- effectiveness and efficiency of operations,
- reliability of financial reporting, and
- compliance with applicable laws and regulations.

Internal controls comprise the plans, policies, methods, and procedures used to meet the organization's mission, goals, and objectives. Internal controls include the processes and procedures for planning, organizing, directing, and controlling program operations as well as the systems for measuring, reporting, and monitoring program performance.

Relevant Internal Controls

We determined that the following internal controls were relevant to our audit objective:

- FHA's controls over payments of partial claims to ensure that they reinstated delinquent loans.

We assessed the relevant controls identified above.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, the reasonable opportunity to prevent, detect, or correct (1) impairments to effectiveness or efficiency of operations, (2) misstatements in financial or performance information, or (3) violations of laws and regulations on a timely basis.

Significant Deficiency

Based on our review, we believe that the following item is a significant deficiency:

- FHA had no controls to ensure that partial claims resulted in curing the loan's delinquency.

Appendixes

Appendix A

Schedule of Questioned Costs and Funds To Be Put to Better Use

Recommendation number	Ineligible 1/	Funds to be put to better use 2/
1A	$2,342,833	
1B		$27,100,000
Totals	2,342,833	27,100,000

1/ Ineligible costs are costs charged to a HUD-financed or HUD-insured program or activity that the auditor believes are not allowable by law; contract; or Federal, State, or local policies or regulations.

2/ Recommendations that funds be put to better use are estimates of amounts that could be used more efficiently if an Office of Inspector General (OIG) recommendation is implemented. These amounts include reductions in outlays, deobligation of funds, withdrawal of interest, costs not incurred by implementing recommended improvements, avoidance of unnecessary expenditures noted in preaward reviews, and any other savings that are specifically identified. In this case, if HUD implements our recommendation, it will ensure that partial claims bring their related mortgages to a current state. Our estimate reflects only the initial year of this benefit. These amounts do not include any potential offsetting costs incurred by HUD to implement our recommendation to design controls.

Appendix B

Auditee Comments and OIG's Evaluation

Ref to OIG Evaluation

Auditee Comments

OFFICE OF HOUSING

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-8000

APR 04 2019

MEMORANDUM FOR: Ronald J. Hosking, Regional Inspector General for Audit, 7AGA

FROM: Gisele G. Roget, Deputy Assistant Secretary for Single Family Housing, HU

Susan A. Betts, Deputy Assistant Secretary for Finance and Budget, HW

SUBJECT: Discussion and Comments on Draft Audit:
FHA Improperly Paid Partial Claims That Did Not
Reinstate Their Related Loans
Issue Date: March 8, 2019

The Office of Inspector General (OIG) audited the Federal Housing Administration (FHA) to ensure that delinquent loans were reinstated to a current state by the use of the partial claim loss mitigation option. OIG conducted this audit based on the results of an audit of CitiMortgage (Report #2018-KC-1001, March 5, 2018), which found that the lender improperly filed for partial claims before completing the loan modifications and reinstating the loans. OIG's audit objective was to determine whether FHA improperly paid partial claims that did not reinstate the delinquent loans.

Comment 1

The Office of Housing (Housing) generally agrees with the OIG findings described in the draft audit, but Housing does suggest some minor adjustments to best satisfy and implement the recommended changes.

<u>Response to OIG Proposed Recommendations</u>

1. Recommendation Highlights and Conclusion

For recommendation lA, the OIG recommends that the Deputy Assistant Secretary for Finance and Budget take corrective action against lenders that did not reinstate the delinquent loans. The Office of Single Family Housing will research each loan identified and take appropriate corrective action in coordination with the Office of Finance and Budget.

For recommendation lB, the OIG recommends that controls be designed to protect the insurance fund from improper partial claims that did not reinstate the loans. Housing will research options to develop controls to identify improper partial claims payments and loan reinstatement issues.

Ref to OIG Evaluation

For recommendation lC, the OIG recommends that the Deputy Assistant Secretary for Single Family Housing update the FHA Home Affordable Modification Program guidance, clarifying that upon application of the partial claim funds, the mortgage must be fully reinstated with no unpaid amounts. Housing will issue a reminder to servicers that a partial claim is FHA's reimbursement of a mortgagee's advancement of funds on behalf of the borrower in an amount necessary under the FHA-HAMP Option and that the FHA-HAMP Loan Modification is to fully reinstate the mortgage. This policy guidance already exists, and it will be reinforced via existing communication methods to mortgagees.

Comment 2

Conclusion

As indicated above, Housing generally agrees with the findings and recommendations outlined in the draft audit and agrees to take appropriate corrective actions. Housing will provide details and target completion dates in its Management Decision.

OIG Evaluation of Auditee Comments

Comment 1 As requested by HUD in the exit conference, we removed the Deputy Assistant Secretary for Finance and Budget as a report addressee and now all three recommendations are directed to the Deputy Assistant Secretary for Single Family Housing.

Comment 2 HUD generally agreed with the findings and recommendations and agreed to take appropriate corrective actions. HUD will provide details and target completion dates in its Management Decision.

Appendix C

Criteria

FHA Single Family Housing Policy Handbook 4000.1

III. Servicing and Loss Mitigation
A. Title II Insured Housing Programs Forward Mortgages
2. Default Servicing
a. Mortgages in Delinquency or Default

i. **Definitions**

A mortgage account is Delinquent any time a payment is due and not paid.

If the Borrower fails to make any payment or perform any other obligation under the Mortgage, and such failure continues for a period of 30 Days, the Mortgage is considered in Default.

h. Early Default Intervention

ii. **SFDMS Default Reporting**

(A) Definition

Single Family Default Monitoring System (SFDMS) is HUD's system for tracking Mortgagee data on Delinquent Mortgages until a delinquency is resolved through reinstatement or termination.

(B) Standard

The Mortgagee must report in SFDMS the Delinquency/Default Status Codes that accurately reflect the stage of delinquency or Mortgagee action.

k. Home Retention Options

vi. **FHA-HAMP**

(A) Definition

The FHA-HAMP Option is a Loss Mitigation Option using a Loan Modification and/or Partial Claim to allow the Mortgage to be reinstated, by establishing an affordable monthly payment, and providing for principal deferment as needed.

A Partial Claim is FHA's reimbursement of a Mortgagee advancement of funds on behalf of the Borrower in an amount necessary to assist in reinstating the Delinquent Mortgage under the FHA-HAMP Option.

(D) FHA-HAMP Options

(2) FHA-HAMP Standalone Partial Claim

(c) Payment of Partial Claim

HUD will not require payment on the Partial Claim until the maturity of the FHA-HAMP Mortgage, the sale of the Property, or the Payoff or non-FHA refinancing of the Mortgage.

(3) Combination of FHA-HAMP Loan Modification and the FHA-HAMP Partial Claim

The Mortgagee may offer FHA-HAMP Loan Modification and FHA-HAMP Partial Claim together for Mortgages in Default or in Imminent Default.

The Mortgagee may utilize an FHA-HAMP Combination Loan Modification Partial Claim when establishing an affordable monthly payment that requires a Partial Claim in an amount needed to cover:

- arrearages
- legal fees and foreclosure costs
- principal deferment

(F) FHA-HAMP Trial Payment Plans

(1) Trial Payment Plans

A Trial Payment Plan (TPP) is a payment plan for a minimum period of three months, during which the Borrower must make the agreed-upon consecutive monthly payments prior to final execution of the Loan Modification or FHA-HAMP.

(2) Standard

Before executing permanent Loan Modification or FHA-HAMP agreements, the Mortgagee must ensure that the Borrower successfully completes a TPP of a minimum of three months.

(H) FHA-HAMP Partial Claim Documentation and Delivery Requirements

(1) FHA-HAMP Partial Claim Promissory Note and Subordinate Mortgage

(a) Standard

The Mortgagee must prepare the Partial Claim promissory Note and subordinate Mortgage as follows:

- the promissory Note must be executed with the name of the Secretary;
- the subordinate Mortgage must be prepared and recorded; and …

The Mortgagee must provide the Borrower with a Partial Claim promissory Note and subordinate Mortgage to be signed by the Borrower and recorded by the Mortgagee.

p. Reinstatement

iv. Reporting Reinstatements

When a Delinquent Mortgage is reinstated, the Mortgagee must report the appropriate Account Reinstated Code in SFDMS to indicate whether:

- use of repayment plans or HUD's Loss Mitigation Options assisted in the reinstatement;
- reinstatement was due to a sale of the Property using a mortgage assumption; or
- the Borrower was able to reinstate the Mortgage on their own.

Appendix D

Schedule of Partial Claims To Be Repaid

Count	FHA case number	Partial claim amount paid	Partial claim amount to be repaid[1]	Number of months delinquent
1	011-6419324	$48,371.11	$48,371.11	1
2	048-6793127	3,195.60	3,195.60	1
3	061-4184077	34,093.74	34,093.74	5
4	101-9379322	6,605.45	6,605.45	1
5	105-3242402	2,332.50	2,332.50	1
6	105-6421511	18,724.75	18,724.75	1
7	105-8876189	90,563.62	0	3
8	137-4350613	8,255.67	8,255.67	1
9	137-5991416	22,425.43	22,425.43	1
10	221-5314101	19,314.95	19,314.95	2
11	241-9444300	35,906.44	35,906.44	1
12	251-3145843	16,293.46	16,293.46	1
13	251-3696698	96,838.35	96,838.35	2
14	281-3407362	41,735.35	41,735.35	1
15	292-5031508	1,662.42	1,662.42	1
16	292-5997604	46,280.91	0	1
17	292-6759879	31,795.02	31,795.02	1
18	352-7551729	804.70	804.70	1
19	371-3366219	33,112.78	33,112.78	1
20	371-5044736	42,812.68	42,812.68	1
21	372-4334943	21,691.72	21,691.72	3
22	372-4660765	49,688.64	49,688.64	1

[1] Four loans are listed as $0 repayment amount because they have already been repaid.

Count	FHA case number	Partial claim amount paid	Partial claim amount to be repaid[1]	Number of months delinquent
23	412-6075076	63,604.40	63,604.40	1
24	412-7331261	71,162.03	71,162.03	2
25	412-7658402	27,535.77	27,535.77	1
26	413-6542721	47,336.15	47,336.15	1
27	446-0246405	12,500.47	0	1
28	491-8559882	5,726.96	5,726.96	1
29	513-0167003	80,677.39	80,677.39	1
30	513-0307053	56,900.00	56,900.00	2
31	513-0341609	9,657.69	9,657.69	2
32	541-8833307	25,669.94	25,669.94	1
33	566-0845570	53,111.18	53,111.18	1
34	571-0586710	8,783.61	8,783.61	1
35	541-7669621	15,316.17	15,316.17	2
36	492-7941438	24,386.64	24,386.64	1
37	151-9499122	34,939.24	34,939.24	1
38	043-8023071	51,256.01	51,256.01	1
39	371-4230329	60,780.99	60,780.99	1
40	061-4777882	155,979.96	155,979.96	11
41	249-5199301	142,345.37	142,345.37	3
42	352-7527397	149,230.90	149,230.90	5
43	374-4863776	204,800.80	204,800.80	2
44	374-5054297	166,339.11	166,339.11	1
45	548-5071936	192,307.41	192,307.41	1
46	548-5637471	187,354.17	0	1
47	548-5768326	159,324.80	159,324.80	1
Total		**2,679,532.45**	**2,342,833.28**	

Appendix E

Sampling and Projections

Our audit sampling objective was to determine whether FHA paid partial claims, which did not reinstate the associated delinquent loan as is required. These would be claims paid on loans that remained delinquent after the borrower received the partial claim. Our sample universe contained 1,824 partial claims loans received between April 1, 2017, and March 31, 2018, for mortgages that were not reported as being brought current by the partial claims loan. Partial claims loans, which were shown to be repaid in a remittance history provided by HUD, were not included in this universe. The sample universe had a total of more than $62.9 million in partial claims and associated incentive fees. Seventeen partial claims, which exceeded $140,000, were omitted as outliers and are not included in the counts above.[2]

To control for variance, we stratified the amount of the partial claim. Loans were sorted and ranked by dollar value and then stratified into eight groups according to percentile points along this continuum.

We validated the sample design using replicated sampling (computer simulations) across several audit scenarios. A sample size of 70 was found to be sufficient.[3]

Sample Design

Stratum	Lower bound	Universe	Samples	Wts.
0-10pct	0	183	7	26.143
10-20pct	5,532	182	7	26.000
20-30pct	11,133	183	7	26.143
30-50pct	16,891	364	14	26.000
50-70pct	29,803	365	14	26.071
70-90pct	43,921	364	14	26.000
90-95pct	70,678	91	3	30.333
95-100pct	86,956	92	4	23.000
Totals		1,824	70	

Based on the design, we selected a statistical sample using the surveyselect procedure in SAS®, a widely used statistical software package. Using the selected sample, the audit team acquired records from the relevant loan servicers. The audit team determined whether the loan was brought current when the partial claim was applied to the mortgage account. In cases in which the partial claims did not reinstate the delinquent loan, the record was recorded as an exception, and the amount was recorded as an ineligible use of partial claims funds.

Percentages, counts, and average dollar amounts were estimated and projected to the universe as a whole. Because all randomly selected samples are subject to "the luck of the draw," we calculated a margin of error for each type of measure and made a final projection on that basis. This was done by computing the mean and standard error of the percentages and dollar amounts using the counts estimating procedures (surveyfreq) and means estimating procedure (surveymeans) in SAS. Variances were calculated using a Taylor series. We used the traditional

2 Seventeen loans were removed from the statistically projectable universe as outlier cases due to their large size. These were reviewed individually in a separate process from the statistical projection of the audit sample.

3 This sample size was found to be reliable and unbiased and to avoid spurious overestimates in conditions in which the audit exception rate found equaled or exceeded 20 percent.

formulas (Cochran 1977, Wayne W. Daniel 1983) for estimating the lower bounds (LCL) of counts and dollar amounts as noted below:

$\text{Count}_{LCL} = N\,(\text{pct} - t_{\alpha/2}\ SE_{\%})$

$\text{Amount}_{LCL} = N(\mu - t_{\alpha/2}\ SE_{\$})$ + individual outlier cases

In auditing the 70 mortgages with partial claims, we found partial claims that did not reinstate the mortgage in 39 of the 70 loans in our sample. Applied to the 1,824 loans in our universe, which had partial claims, we can say the following things with a one-sided confidence interval of 95 percent:

HUD loaned significant amounts of funds that did not perform their intended function of reinstating delinquent loans.

Even after deducting a margin of error, we can say that HUD loaned at least $27.1 million in partial claims loans, which failed to reinstate the associated mortgages. These problems affected at least 831 partial claims loans.

Calculations are shown below:[4]

(55.82% - 1.670 X 6.12%) x N = 45.6% x N ≈ 831 loans that were not reinstated
(18908.7 - 1.830 X 2611.4) x N = 14129.8 x N + $1,357,682 ≈ 27,100,000 partial claims lent

Given that our sample period covered an entire year, we can say that these findings represent $27.1 million per year that HUD loaned under the partial claims program, which could have been put to better use.

[4] It should be noted that the estimation of partial claims amounts uses a t-score of 1.830 instead of 1.670. This wider t-score compensates for a binomial distortion, which is common in some audit samples with this rate of exceptions found. Replicated sampling was used to confirm that this wider interval was needed to preserve the confidence interval at the stated design level.