Government National Mortgage Association, Washington, DC

Mortgage-Backed Securities Secured by FHA Loans

Office of Audit, Region 7
Kansas City, MO

Audit Report Number: 2016-KC-0002
September 21, 2016

To: Michael Drayne, Senior Vice President, Office of Issuer and Portfolio Management, TS

//**signed**//

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

Subject: Ginnie Mae Improperly Allowed Uninsured Loans To Remain in Mortgage-Backed Securities Pools

Attached is the U.S. Department of Housing and Urban Development (HUD), Office of Inspector General's (OIG) final results of our review of single-family Federal Housing Administration loans held for 1 year or longer in Government National Mortgage Association (Ginnie Mae) mortgage-backed securities pools without the required mortgage insurance.

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 Web site. 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.

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Ginnie Mae Improperly Allowed Uninsured Loans To Remain in Mortgage-Backed Securities Pools

Highlights

What We Audited and Why

We audited the Government National Mortgage Association's (Ginnie Mae) process for identifying and removing uninsured single-family Federal Housing Administration loans from mortgage-backed securities (MBS) pools (see page 3 for an explanation of mortgage-backed securities). We initiated this audit based on indications that loans that have mortgage insurance terminated are not always removed from Ginnie Mae MBS pools. Our audit objective was to determine whether loans remained in Ginnie Mae MBS pools for 1 year or longer without the required mortgage insurance.

What We Found

Ginnie Mae allowed at least 345 uninsured single-family loans valued at nearly $50 million to remain in its MBS pools for more than 1 year. We reviewed a statistical sample of 85 of 363 pooled loans for which the U.S. Department of Housing and Urban Development's systems showed no insurance endorsement date. Eighty-three of the loans were uninsured more than 1 year after the lenders issued the related securities.

What We Recommend

We recommend that Ginnie Mae (1) establish a maximum time that loans may remain pooled without insurance and (2) establish a process for requiring removal of pooled loans that remain uninsured at the maximum time to put $49.3 million to better use.

Table of Contents

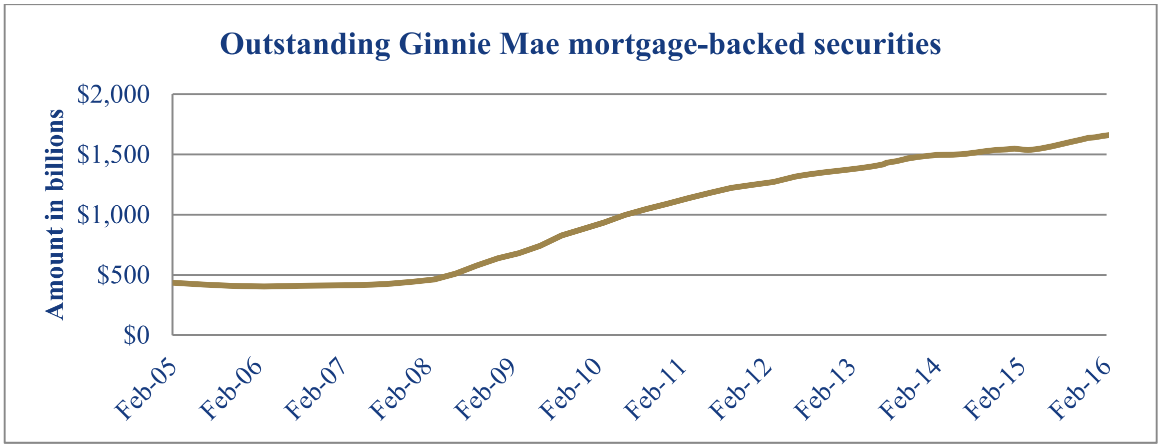
Background and Objective

The Government National Mortgage Association (Ginnie Mae) Charter Act created Ginnie Mae as a corporation within the U.S. Department of Housing and Urban Development (HUD) in 1968.

Ginnie Mae assists the secondary market for residential mortgages by increasing the liquidity of mortgage investments. Ginnie Mae does this through its mortgage-backed securities (MBS) program. In this program, mortgage lenders originate mortgages under government insurance programs. The lenders then pool loans made to individual homeowners and sell them, along with the rights to their future cash flows, for cash in the global securities market. Ginnie Mae guarantees that investors in these pools receive timely principal and interest payments. This guarantee transforms individual mortgages from relatively illiquid, individual assets into liquid, tradable, and homogeneous capital market instruments. Ginnie Mae's guaranty of MBS is backed by the full faith and credit of the United States.

Mortgages in MBS pools must be Federal Housing Administration (FHA) insured or guaranteed under other Federal loan programs. This requirement protects Ginnie Mae. FHA provides mortgage insurance on loans made by FHA-approved lenders throughout the United States and its territories. The HUD Office of Housing oversees FHA. Government agency insurance and lender resources cover losses before Ginnie Mae. Mortgages that do not meet the insurance or guarantee requirement are considered defective. The Ginnie Mae Mortgage-Backed Securities Guide requires that lenders remove defective loans from the pools. Before 2003, lenders were required to certify that all loans in each pool met certain requirements, including that they be federally insured or guaranteed. Since 2003, Ginnie Mae uses information received from FHA to determine the insurance status of FHA single-family loans. This change removed the requirement to obtain third-party verification of FHA insurance, providing cost savings to lenders, representing the commitment by Ginnie Mae to reduce the costs of homeownership. Lenders were required to complete the certification within 1 year after the security was issued. Currently, there is no maximum time in which a loan may remain uninsured and remain in a MBS pool.

In fiscal year 2015, issuers securitized more than 98 percent of FHA fixed-rate single-family loans into Ginnie Mae pools. Investors held $1.5 trillion in outstanding single-family Ginnie Mae MBS at the end of fiscal year 2015.



Our objective was to determine whether loans remained in Ginnie Mae MBS pools for 1 year or longer without the required mortgage insurance.

Results of Audit

Finding 1: Ginnie Mae Improperly Allowed Uninsured Loans To Remain Pooled

Ginnie Mae allowed more than $49 million in uninsured single-family loans to remain in its MBS pools for more than 1 year without obtaining FHA mortgage insurance. This condition occurred because Ginnie Mae did not have a process for requiring removal of pooled loans that remained uninsured for more than 1 year. As a result, it is at risk of becoming financially responsible for these uninsured mortgages if the lender defaults.

Uninsured Loans in MBS Pools

Ginnie Mae allowed at least 345 uninsured single-family loans valued at nearly $50 million to remain in its MBS pools for more than 1 year. To allow a reasonable time for GNMA to cure a lack of insurance, this only includes loans that had been in a GNMA pool for at least 1 year, as of September 30, 2015. We identified 363 pooled loans for which HUD's systems showed no insurance endorsement date. We reviewed a statistical sample of 85 of those loans and found that 83 were uninsured more than 1 year after the date on which the lenders issued the related securities. We used these results to project that at least 345 of the 363 loans remained uninsured for more than 1 year.

The Government National Mortgage Association Charter Act (see Appendix C) requires that all loans in the MBS pools have Federal insurance or a Federal guarantee. Ginnie Mae allows lenders to pool loans with pending FHA insurance. This practice is reasonable because loans originated according to FHA requirements are likely to receive insurance. However, FHA endorsed most loans within 2 months of closing.

No Removal Process

Ginnie Mae did not have a process for requiring that lenders remove (purchase) loans from their pools when they remained uninsured for more than 1 year.

Ginnie Mae did not set a maximum length of time in which a loan could be uninsured and still remain in a MBS pool. Before 2003, the lender had to provide proof of insurance within a year to obtain pool certification. Ginnie Mae removed the insurance requirement for pool certification in 2003.

In addition, Ginnie Mae did not take strong action to motivate lenders that did not cure uninsured loans. It consistently identified uninsured loans, notified the lenders of the deficiency, and sent additional notifications to lenders that did not respond. While the notices worked to obtain compliance for the majority of lenders, Ginnie Mae did not take additional actions to ensure that all lenders removed the loans from the pools.

Potential for Losses

Ginnie Mae is at risk of becoming financially responsible for these uninsured mortgages if it extinguishes a lender. Ginnie Mae can extinguish a lender in response to a default, such as failure to make timely payments to security holders or loss of FHA approved status. When Ginnie Mae extinguishes a lender, it seizes its portfolio and takes on the responsibilities of the lender, including responsibility to buy uninsured loans from the pools. Our sample universe included 82 of these uninsured loans that Ginnie Mae seized. Ginnie Mae is responsible for $11.6 million in mortgages for these loans.

Conclusion

Ginnie Mae's MBS pools included more than $49 million in at least 345 loans that lacked the mortgage insurance required by Federal statute. For these loans, Ginnie Mae may have to advance principal and interest payments to the investors and buy them out of the MBS pools. Because Ginnie Mae did not formally establish a maximum amount of time loans could take to obtain FHA insurance and still remain in MBS pools or a process for forcing their removal from the pool, the risk to Ginnie Mae continues. By addressing this weakness, Ginnie Mae can protect its financial situation by no longer guaranteeing FHA loans that fail to obtain insurance for more than 1 year.

Recommendations

We recommend that Ginnie Mae's Senior Vice President, Office of Issuer and Portfolio Management

1A. Establish a maximum time that loans may remain pooled without insurance.

1B. Establish a process for requiring removal of pooled loans that remain uninsured at the maximum time to put $49.3 million to better use.

Scope and Methodology

Our audit covered the period October 2014 through September 2015. We performed our audit work between December 2015 and August 2016.

To accomplish our objective, we

- Reviewed relevant regulations, the Ginnie Mae Mortgage-Backed Securities Guide, and Ginnie Mae guidance;
- Reviewed the Ginnie Mae guaranty agreement, which is the contract between Ginnie Mae and the issuers of securities;
- Reviewed Ginnie Mae's insurance matching procedures;
- Interviewed Ginnie Mae personnel; and
- Selected and reviewed a statistical sample of uninsured loans.

We used a statistically selected sample to reach our conclusions. Our sampling universe consisted of 363 loans valued at more than $52.1 million that were included in Ginnie Mae pools but showed no record of an insurance endorsement date in the FHA Single Family Data Warehouse. To allow a reasonable time for GNMA to cure a lack of insurance we only included loans that had been in a GNMA pool for at least 1 year, as of September 30, 2015. We reviewed a sample of 85 of those loans. See appendix D for a detailed explanation of our sample selection and results projection.

We relied on data that included months pooled, start date, and loan balance derived from HUD's Single Family Data Warehouse (SFHEDW) to select our sample. SFHEDW is a large and extensive collection of database tables organized and dedicated to support the analysis, verification, and publication of Single Family Housing data. The warehouse consists of datamarts developed to support specific business units and communities within the HUD family. Although we did not perform a detailed assessment of the reliability of SFHEDW, we compared the fields used to determine our sample universe with loan information entered by issuers into the Ginnie Mae Reporting and Feedback System.

Ginnie Mae matches issuer-reported loan-level data with data from FHA's Single Family Information System (SFIS, Endorsed Loans A43 Database) to monitor loan activity. SFIS is the system of record for all FHA insured Single Family loans and case records. Ginnie Mae produces monthly and quarterly reports using this information.

We compared the information from SFHEDW with the information in the Ginnie Mae aged missing coverage report from September 2015 and added information from Neighborhood Watch reports. Neighborhood Watch is a HUD Web-based system, used by FHA employees, lenders, and the general public to monitor the performance of insured mortgage loans. We supplemented this review with information from the form HUD-11706, Schedule of Pooled Mortgages. Our testing confirmed the accuracy of the pool issue date, loan balance, and mortgage insurance status.

Within our sample, we noted 19 loans serviced by one corporation. These loans were part of a group of loans seized by Ginnie Mae from a defaulted servicer. Ginnie Mae subsequently sold the corporation servicing rights to these loans. The sales contract noted that Ginnie Mae was financially responsible for these loans. We matched 100 percent of the uninsured loans in the sales contract to our sample universe. There were 82 of these loans in our sample universe of 363 loans with an unpaid principal balance of $11.6 million.

Ginnie Mae guarantees payments from loans insured by Federal agencies in addition to FHA. We considered only loans entered into the FHA system. We also excluded loans with FHA coverage obtained but later voluntarily terminated by the servicer.

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:

- Controls to ensure that uninsured FHA loans are removed from MBS pools.

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:

- Ginnie Mae did not have a process for requiring removal of pooled loans that remained uninsured for an unreasonable length of time (finding).

Appendixes

Appendix A

Schedule of Funds To Be Put to Better Use

Recommendation number	Funds to be put to better use 1/
1A	$49,300,000
Totals	**49,300,000**

1/ 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 Ginnie Mae implements our recommendations, it will no longer guarantee FHA loans that do not obtain insurance and remain in MBS pools. Our estimate reflects only the initial year of this benefit. These amounts do not include potential offsetting costs incurred by Ginnie Mae to implement our recommendations to strengthen controls. (See appendix D for additional information regarding the statistical sample.)

Appendix B

Auditee Comments and OIG's Evaluation

Ref to OIG Evaluation	Auditee Comments

GinnieMae
Our Guaranty Matters

425 3rd Street, SW, Fifth Floor
Washington, DC 20024
(202) 708-1535

September 7, 2016

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

FROM: Michael R. Drayne, Senior Vice President, Office of Issuer and Portfolio Management, TS

Michael R. Drayne

SUBJECT: Discussion Draft Audit Report – Uninsured Loans

We appreciate the opportunity to review the draft report, and offer the following comments for your consideration:

Comment 1

1) We understand how the $49 million figure (representing uninsured loans) was arrived at, but the references to "putting the funds to better use" are confusing, since there are no government expenditures involved. Rather, you are recommending that we require our private market issuers to buy such loans out of pools to reduce risk to the government.

Comment 2

2) While we generally accept the recommendations and intend to pursue them, we do wish to point out that in some cases requiring uninsured loans to be bought out would greatly exacerbate the risk to the government, such as if an under-capitalized issuer was forced to buy out performing loans that would be unlikely to be the subject of an insurance claim, and either hold such loans on its balance sheet or sell them at a substantial loss. This is something we will need to be alert to in certain cases.

Comment 3

3) As we discussed in our exit call, we feel that the contention that Ginnie Mae "did not adequately follow up on uninsured loans" implies operational weaknesses that do not reflect the sizable investment of effort we routinely make in connection with uninsured loans. Moreover, we submit that there is a larger context that is relevant to this issue: Ginnie Mae has made enormous strides reducing the levels of uninsured loans, and the incidence indicated in the draft report is a miniscule portion of the single family FHA-insured outstanding population.

Mailing Address
451 Seventh Street SW, B-133
Washington, DC 20410

Ref to OIG Evaluation

Auditee Comments

Comment 4

4) Two more technical comments that we also discussed on the exit call: in the first sentence under "Potential for Losses" (page 5) if would be better to reference a lender being extinguished rather than a default, since events of default do not always lead to a seizure of assets by the government. Also, the reference to the "Mortgage-backed Securities Information System" under "Scope and Methodology" (page 7) should be changed to "RFS" (Reporting and Feedback System).

2

OIG Evaluation of Auditee Comments

Comment 1 Ginnie Mae stated that references to "putting funds to better use" are confusing, since there are no government expenditures involved. We recommend that Ginnie Mae use its authority to guarantee securities backed by insured loans instead of uninsured loans in order to put that amount of guarantee authority to better use. Guaranteeing securities backed by uninsured loans increases the risk of loss to Ginnie Mae. Ginnie Mae's MBS pools included more than $49 million in loans that lacked the required mortgage insurance. For these loans, Ginnie Mae may have to advance principal and interest payments to the investors and buy them out of the MBS pools. Already, 82 of these uninsured loans had been seized by Ginnie Mae. Ginnie Mae is responsible for $11.6 million in mortgages for these loans.

Comment 2 Ginnie Mae stated that in some cases requiring buyout of uninsured loans would increase the government's risk. We recognize Ginnie Mae is granted by Federal statute (see Appendix C) the power to ensure the efficient operation of the securities program. We are not seeking to limit this power so long as the actions are compatible with the Charter Act requirements.

Comment 3 Ginnie Mae objected to our statements on lack of adequate follow up on uninsured loans. We revised the report to better recognize the tracking and notification of pooled loans by Ginnie Mae. We recognize a large percentage of the loans are cured using this process.

Comment 4 Ginnie Mae requested two technical updates. We agree with the changes and revised the report using the terminology suggested by Ginnie Mae.

Appendix C

Criteria

Excerpts From the Charter Act

GOVERNMENT NATIONAL MORTGAGE ASSOCIATION
STATUTORY AUTHORITY
(Title III of National Housing Act, 12 U.S.C. 1716 et seq.)

TITLE III--NATIONAL MORTGAGE ASSOCIATIONS
PURPOSES

Declaration of Statutory Purposes

Sec. 301. The Congress hereby declares that the purposes of this title are to establish secondary market facilities for residential mortgages, to provide that the operations thereof shall be financed by private capital to the maximum extent feasible, and to authorize such facilities to–

Secondary Market Activities

(1) provide stability in the secondary market for residential mortgages;

(2) respond appropriately to the private capital market;

(3) provide ongoing assistance to the secondary market for residential mortgages (including activities relating to mortgages on housing for low- and moderate-income families involving a reasonable economic return that may be less than the return earned on other activities) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing;

(4) promote access to mortgage credit throughout the Nation (including central cities, rural areas, and underserved areas) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing; and

Management and Liquidation Functions

(5) manage and liquidate federally owned mortgage portfolios in an orderly manner, with a minimum of adverse effect upon the residential mortgage market and minimum loss to the Federal Government.

Ginnie Mae's Authority to Buy Mortgages

Sec. 302 (b)(1) For the purposes set forth in section 301 and subject to the limitations and restrictions of this title, each of the bodies corporate named in subsection (a)(2)7 is authorized, pursuant to commitments or otherwise, to purchase, service, sell, or otherwise deal in any mortgages which are insured under the National Housing Act or title V of the Housing Act of 1949, or which are insured or guaranteed under the Servicemen's Readjustment Act of 1944 or chapter 37 of title 38, United States Code; and to purchase, service, sell, or otherwise deal in any loans made or guaranteed under part B of title VI of the Public Health Service Act…

Ginnie Mae's Authority to Guarantee Securities

Sec. 302(g)(1) The Association is authorized, upon such terms and conditions as it may deem appropriate, to guarantee the timely payment of principal of and interest on such trust certificates or other securities as shall (i) be issued by the corporation under section 304(d), or by any other issuer approved for the purposes of this subsection by the Association, and (ii) be based on and backed by a trust or pool composed of mortgages which are insured under the National Housing Act or title V of the Housing Act of 1949, or which are insured or guaranteed under the Servicemen's Readjustment Act of 1944 or chapter 37 of title 38, United States Code, or which are guaranteed under title XIII of the Public Health Service Act; or guaranteed under section 184 of the Housing and Community Development Act of 1992…

Excerpts from Title 12-Banks and Banking - Subsection 1721(g)(E)(iv)

No State or local law, and no Federal law (except Federal law enacted expressly in limitation of this clause after August 10, 1993) shall preclude or limit the exercise by the Association of its power to contract with persons or entities, and its rights to enforce such contracts, for the purpose of ensuring the efficient commencement and continued operation of the multiclass securities program.

Excerpts from Ginnie Mae MBS Guide 5500.3

Section 1-1

The Government National Mortgage Association (Ginnie Mae), through its Mortgage-Backed Securities (MBS) Programs, guarantees securities that are backed by pools of mortgages and issued by mortgage lenders (Issuers) approved by Ginnie Mae. Security holders receive a "pass-through" of the principal and interest payments on a pool of mortgages, less amounts required to cover servicing costs and Ginnie Mae guaranty fees. The Ginnie Mae guaranty ensures that the security holder receives the timely payment of scheduled monthly principal and any unscheduled recoveries of principal on the underlying mortgages, plus interest at the rate provided for in the securities. If a borrower fails to make a timely payment on a mortgage, the Issuer must use its own funds to ensure that the security holders receive timely payment. If an Issuer fails to ensure that the funds necessary to make timely payment are available or otherwise defaults in the discharge of its responsibilities, Ginnie Mae, in accordance with its guaranty, will make payments to security holders.

Ginnie Mae also guarantees Home Equity Conversion Mortgage (HECM) securities, hereinafter referred to as HMBS. HMBS are accrual coupon pass-th[r]ough securities which perform differently than Ginnie Mae's forward MBS pass-through securities. In addition to program requirements applicable to the forward MBS, HMBS Issuers must also meet special Program requirements found in Chapter 35 of this Guide.

Section 5-2(K)

If Ginnie Mae declares a default and extinguishment under the applicable Guaranty Agreement, the Issuer forfeits and waives any and all rights to reimbursement or recovery of any advances and expenditures made by the Issuer, all such rights of the Issuer are extinguished and Ginnie Mae becomes the absolute owner of such rights, subject only to the unsatisfied rights of the security holders.

Section 11-3

By a final certification, the document custodian certifies to Ginnie Mae that the Issuer has submitted all required loan documents in correct form. Final certification of a pool or loan package must be completed no later than 12 months after the issue date of the related securities.

Excerpt from Appendix III-19 Guaranty Agreement Ginnie Mae Project Loan Securities

Section 10-3

On the occurrence or development of any event of default, Ginnie Mae may, in its sole discretion, but is not required to, confer and negotiate with the Issuer with respect to remedying and correcting the default. Any such arrangements mutually agreed upon shall be placed in written contractual form, and shall be supplementary to this Agreement.

Section 10-4

On the occurrence or development of any event of default, unless arrangements under section 10.03 above are mutually agreed upon by and between Ginnie Mae and the Issuer and placed in written contractual form duly executed by Ginnie Mae, Ginnie Mae may, by letter directed to the Issuer, pursuant to section 306(g) of the National Housing Act, automatically effect and complete the extinguishment of any redemption, equitable, legal, or other right, title, or interest of the Issuer in the Mortgages. The Mortgages, together with all accounts, books and all other hard copy or electronic records related to the Mortgages or the Securities, automatically shall become the absolute property of Ginnie Mae, subject only to unsatisfied rights of the Security Holders. Upon such extinguishment, the Issuer automatically forfeits, waives and releases any and all rights to seek recovery of or reimbursement for any property or monies related in any way to the Mortgages (including but not limited to undisbursed Mortgage proceeds or Advances that the Issuer made or makes) that the Issuer might otherwise have recovered from any person or entity.

Excerpt from Ginnie Mae All Participant Memorandums 03-26

Subject: Elimination of Third-Party Review for Insurance Status of Single-Family FHA Loans

Effective for Single-Family FHA loans placed in Ginnie Mae pools with an issue date of January 1, 2003 or later, third-party verification of FHA insurance is no longer required. Ginnie Mae will now utilize information received from FHA to determine insurance status of FHA single-family loans. With this change, document custodians may certify loans without ascertaining the existence of FHA mortgage insurance. For FHA loans pooled prior to January 1, 2003, and not yet insured, third-party confirmation of insurance is still required.

Appendix D

Sampling and Projections

Our sampling objective was to determine whether there were single-family FHA loans being held for 1 year or longer in Ginnie Mae MBS pools without the required mortgage insurance. Our sampling universe consisted of 363 loans valued at more than \$52.1 million that were included in Ginnie Mae pools but showed no record of an insurance endorsement date in the FHA Single Family Data Warehouse. To allow a reasonable time for GNMA to cure a lack of insurance we only included loans that had been in a GNMA pool for at least 1 year, as of September 30, 2015. This number did not include 17 statistical outliers that had asset amounts (unpaid loan balance) less than \$15,000 or greater than \$375,000.

To control for variance, we stratified on the amount of the asset. Loans were sorted and ranked by dollar value and then stratified in six 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 85 was found to be sufficient.

Sample design

Strata	Universe	Samples	Wts.
0-10pct	36	8	4.5000
10-30pct	73	17	4.2941
30-50pct	72	17	4.2353
50-70pct	74	17	4.3529
70-90pct	72	17	4.2353
90-100pct	36	9	4.0000
Totals	363	85	

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 Ginnie Mae and other sources and examined the actual loan records try to confirm a lack of insurance. 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 calculation was done by computing the mean and standard error of the percentages and dollar amounts using the means estimating procedure (surveymeans) and counts estimating procedures (surveyfreq) in SAS®. Variances were calculated using a Taylor series. We used the traditional formulas (Cochran 1977, Wayne W. Daniel 1983) for estimating the lower bounds (LCL) of counts and dollar amounts as noted below:

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

$$Amount_{LCL} = N(\mu - t_{\alpha/2}\, SE_{\$})$$

In auditing the 85 records, we found that a high percentage of the loans were uninsured. Sampling distributions under high rates of audit findings do not follow a true bell curve so we had to modify $t_{\alpha/2}$ in the formula above. We tested the sample performance at this rate of findings and determined that $t_{\alpha/2}$ needed to be increased from 1.6643 to 2.5000 to maintain a true one-sided confidence interval of 95 percent.

We found that Ginnie Mae failed to ensure that lenders obtained insurance for 83 of the 85 loans in our sample. Applied to the 363 Ginnie Mae loans in our universe, we can say the following with a one-sided confidence interval of 95 percent:

Ginnie Mae Included Meaningful Amounts of Uninsured Assets in the Investment Pools of Government-Insured Loans That It Offered to the Public

Based on our sample, we can say that Ginnie Mae failed to ensure that lenders obtained insurance for at least $49.3 million in assets, after deducting a margin of error. These problems affected at least 345.5 loans.

Calculations below:

(97.63% - 1.6643 X 1.47%) x N = 95.2% x N ≈ 345.5 Uninsured loans
(142573 - 2.5000 X 2596.4) x N = 136082 x N ≈ 49,300,000 Uninsured pool assets

Since our sample period covered an entire year, we can say that these findings represent $49.3 million per year that could be going uninsured and could be put to better use by properly protecting these assets.

Cochran, William G. Sampling Techniques. New York: John Wiley & Sons, Inc., 1977
Wayne W. Daniel, James C. Terrell. Business Statistics. Houghton Mifflin, Company, 1983