FANNIE MAE AND FREDDIE MAC SINGLE-FAMILY GUARANTEE FEES IN 2009 AND 2010

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EXECUTIVE SUMMARY

Fannie Mae and Freddie Mac ("the Enterprises") buy single-family mortgages from mortgage companies, commercial banks, credit unions, and other financial institutions. In most cases, a lender receives mortgage-backed securities (MBS) in exchange for the loans. Each Enterprise guarantees the payment of principal and interest on its MBS and charges a fee for providing that guarantee. The guarantee fee covers projected credit losses from borrower defaults over the life of the loans, administrative costs, and a return on capital. Lender guarantee fee payments generally take the form of ongoing monthly payments and frequently also include an upfront payment at the time of Enterprise loan acquisition.

Section 1601 of the Housing and Economic Recovery Act of 2008 (HERA) requires the Federal Housing Finance Agency (FHFA) to conduct an ongoing study of the guarantee fees charged by Fannie Mae and Freddie Mac and to submit annual reports to Congress, based on aggregated data collected from the Enterprises, regarding the amount of such fees and the criteria used by the Enterprises to determine them. This report, the third prepared by FHFA in fulfillment of Section 1601, covers guarantee fees charged by the Enterprises in 2009 and 2010.[1] The report focuses on fees charged by the Enterprises for guaranteeing conventional single-family mortgages—loans that are not insured or guaranteed by the federal government and that finance properties with four or fewer residential units.

Following Enterprise practice, the report uses economic concepts and model-based projections, rather than financial results reported in conformance with Generally Accepted Accounting Principles (GAAP), to analyze the single-family guarantee fees charged by Fannie Mae and Freddie Mac. To analyze the guarantee fees it charges, each Enterprise estimates the cash it expects to collect and expend over the estimated life of the mortgages. Estimated cash inflows and outflows are converted into annualized rates expressed in terms of basis points of outstanding loan principal. One basis point is equal to 1/100th of one percent. The estimated total guarantee fee associated with a transaction is equal to the sum of the ongoing fee collected over the life of the mortgage and the annualized equivalent of any upfront fee.

The difference or gap between a transaction's estimated total guarantee fee and estimated cost (including expected outflows and target return on required capital) provides a measure of the expected profitability of the transaction. A negative gap does not mean that an Enterprise expected to incur a loss, but simply that it did not expect to earn its target rate of return. The estimated gap is very dependent on each Enterprise's proprietary costing model[2] and the assumptions used. The estimates of guarantee fees and gaps provided in this report reflect Enterprise estimates based on the models in place at the time of loan acquisition and represent the Enterprises' forward-looking views at that time. Whereas each Enterprise's model includes a number of assumptions, the key ones are

[1] The earlier reports covering guarantee fees charged by the Enterprises in 2007-2008 and 2008-2009 can be found at http://www.fhfa.gov/webfiles/14700/GFees72009.pdf and http://fhfa.gov/webfiles/15918/GFEEJuly2010F.pdf

[2] Each model uses cash flow simulations to estimate cost based on loan attributes that affect performance (e.g., borrower credit score, loan-to-value ratio) and projected market conditions. To estimate required capital, each model simulates the cost of guaranteeing the loan under stressful economic conditions.

the target return on capital and expected house price appreciation. The models and their assumptions have changed over time.

Fannie Mae and Freddie Mac consider many factors in determining the guarantee fees they charge, including the estimated cost of guaranteeing specific mortgages derived from their costing models, competitive conditions in the market for bearing mortgage credit risk, the relative pricing of each Enterprise's MBS, the Enterprises' public mission, and return-on-capital targets. No set formula exists for weighing those factors. Instead, each Enterprise weighs them differently and works towards its view of a balanced outcome in line with market conditions and company goals.

The Enterprises' credit risk evaluations take into account changing historical data, market developments, and the Enterprises' own forecasts. Credit losses were at historic lows when house price appreciation accelerated rapidly in 2002 through 2005. However, it has become clear that the industry as a whole underpriced mortgage credit risk significantly in those years as well as in 2006 and 2007. The Enterprises began to correct that underpricing in the fourth quarter of 2007, when they separately announced increases in upfront guarantee fees beginning in March 2008. Each Enterprise's pricing changes sought to align fees charged more closely with its model estimates of cost.

In March 2008, each Enterprise implemented an upfront adverse market charge of 25 basis points that was intended to protect against the heightened credit risk posed by deteriorating housing market conditions. That charge was equivalent to an ongoing guarantee fee of about 5 basis points on average. Also in March 2008, each Enterprise introduced additional upfront fees based on loan-to-value (LTV) ratios, credit scores, and other risk factors. In contrast to the multiple changes in guarantee fee pricing implemented in 2008, changes in 2009 and 2010 were much less extensive.

In February 2009, the Obama Administration introduced the Making Home Affordable Program, designed to stabilize the housing market and help struggling homeowners get relief and avoid foreclosure. One component of that initiative was the Home Affordable Refinance Program (HARP), which gives homeowners with high LTV-ratio mortgages owned or backing MBS guaranteed by Fannie Mae or Freddie Mac an opportunity to refinance into loans with more affordable monthly payments. The objective of HARP is to give homeowners who have shown a commitment to paying their mortgage, but whose properties have fallen in value, the opportunity to get into a new mortgage with better terms. HARP allows borrowers who are current but whose loans have current LTV ratios above 80 percent to refinance without obtaining new or additional mortgage insurance coverage.

Homeowners whose mortgage rates are higher than the current market rate that refinance through HARP receive an immediate reduction in their payments. Homeowners with adjustable-rate mortgages who refinance to a fixed-rate loan may experience higher payments, but they benefit from a more stable, predictable monthly payment and will no longer face the risk of future payment increases due to rising interest rates. Some HARP borrowers choose to refinance from 30-year fixed-loans into 15-year loans to benefit from a faster payoff.

Under data collection procedures established by FHFA in accordance with Section 1601 of HERA, Fannie Mae and Freddie Mac submit loan group data to the agency for every quarter. For each lender, the Enterprises provide guarantee fee data by loan type. For each loan type, the data are segmented into different categories based on LTV ratios and borrower credit scores calculated using models developed by Fair, Isaac and Company (FICO). The sample of mortgages used to prepare this report represents 96 percent and 98 percent, respectively, of the unpaid principal balance of the single-family mortgages the Enterprises acquired in 2009 and 2010. In addition to the loan group data, the Enterprises provided loan-level data necessary to support additional analysis of HARP loans. Based on analysis of the available data, FHFA has made the following findings:

1. Although Fannie Mae and Freddie Mac consider model-derived estimates of cost in determining their single-family guarantee fees, their pricing often subsidizes their guarantees on some mortgages, using higher returns that they expect to earn on guarantees of other loans. In 2010 as in previous years studied by FHFA, cross-subsidization in single-family guarantee fees charged by each Enterprise was evident across product types, credit score categories, and LTV ratio categories. There were cross-subsidies from mortgages that posed lower credit risk, on average, to loans that posed higher credit risk. The greatest estimated subsidies generally went to the highest-risk mortgages. However, because the share of higher-risk loans acquired was low in both 2009 and 2010, the overall cross-subsidization was substantially less than in either 2007 or 2008.

2. The average total guarantee fee charged by Fannie Mae and Freddie Mac on single-family mortgages acquired on a flow basis increased from 22 basis points in 2009 to 26 basis points in 2010. When HARP loans are excluded, the average total guarantee fee increased from 21 basis points in 2009 to 25 basis points in 2010. That change reflects increases in both the average ongoing fee and the average upfront fee. The change was largely driven by the full-year benefit of pricing increases initiated in 2009.

    - The average non-HARP ongoing fee increased 1 basis point, from 13 basis points to 14 basis points, reflecting increases in the fees charged some lenders resulting from renegotiation of expiring contracts.

    - The average non-HARP upfront fee (as measured in estimated annualized revenue) increased 2 basis points, from 8 basis points to 10 basis points. That change reflected increases in upfront fees and changes in the credit risk profile.

3. The credit profile of mortgages acquired in 2010 reflected the growth in HARP, but otherwise was not much different than in 2009. Thirty-year fixed-rate mortgages comprised a smaller share of acquisitions, with larger shares of both 15-year fixed-rate loans and adjustable-rate mortgages (ARMs). The distribution of borrower credit scores was nearly unchanged. The distribution of LTV ratios shifted toward less equity, but that was driven almost solely by the higher share of HARP mortgages, which improve the Enterprises' economic position by lowering the borrowers' monthly mortgage payments or providing a more stable

product. HARP loans grew to 11 percent of acquisitions in the program's first full year of operation. Jumbo conforming loans increased to 10 percent of acquisitions.[3]

4. Trends in the average total guarantee fees charged by the Enterprises varied for different types of non-HARP mortgages in 2010. Fees increased for 30-year, fixed-rate loans but were nearly unchanged for 15-year, fixed-rate and adjustable-rate mortgages (ARMs).

5. Estimated fee gaps improved for each of the three non-HARP product categories in 2010. That improvement reflects the similar credit profile compared to 2009, higher charged fees, and lower estimated costs, especially for ARMs. The estimated costs for fixed-rate products were little changed. Each Enterprise's estimated cost for ARMs in 2010 was below that for 30-year fixed-rate mortgages. Fifteen-year, fixed-rate loans continued to have the lowest estimated costs.

6. Single-family guarantee fees charged by the Enterprises for non-HARP loans increased modestly for each of three credit score categories in 2010. The estimated fee gaps improved in each category, but the Enterprises still did not expect, at the time of loan acquisition, to earn their target rates of return on guarantees of loans with credit scores below 660. However, the acquisition share for those loans was only 2 percent in both 2009 and 2010.

7. The distribution of volume in the LTV-ratio categories was nearly unchanged for non-HARP mortgages in 2010. Average guarantee fees charged by the Enterprises increased for every LTV-ratio category, with increasingly larger increases in the fees as the categories reflected lower borrower equity. However, since HARP mortgages were excluded from this analysis, the market share volumes were very low in the higher LTV-ratio categories, rounding to zero percent for greater than 95 LTV ratio mortgages.

8. The estimated fee gaps for non-HARP mortgages improved slightly in 2010 for the LTV-ratio categories of 80 percent and below. The estimated fee gap worsened slightly for the LTV category of 80.1 to 95 percent. Mortgages with less than 5 percent equity had a substantially more negative gap despite higher fees. However, those acquisitions consisted primarily of HARP-like loans (e.g., refinances on second homes) that have an economic benefit similar to HARP mortgages and whose acquisition volume was negligible in both 2009 and 2010.

9. HARP mortgages, which comprised 4 percent of acquisitions in 2009 and 11 percent in 2010, have benefitted the Enterprises by increasing guarantee fee revenue and improving their economic position and have given borrowers who

[3] Jumbo conforming loans are mortgages that are eligible for Fannie Mae and Freddie Mac to acquire, but whose balances exceed the baseline U.S. conforming loan limit of $417,000.

are current on their mortgage an opportunity to refinance into a lower interest rate or a more stable loan product.

- Thirty-year, fixed-rate HARP mortgages acquired in 2009 and 2010 had estimated average guarantee fees that were 5 basis points and 11 basis points, respectively, higher than the fees on the loans they replaced. The Enterprises currently expect that the additional fees collected on HARP mortgages, together with the fees collected on the original loans that are refinanced, will on average cover projected credit expenses and administrative costs.

- In each year, HARP borrowers that refinanced from a 30-year fixed-rate mortgage into another loan of the same type reduced their interest rates by about one percent on average. Lower monthly payments and/or a more stable loan product reduce Enterprise credit risk.

10. A significant share of the single-family mortgages acquired by each Enterprise comes from a small group of large lenders. Loans acquired from the top ten lenders combined accounted for 74 percent and 76 percent of the Enterprises' combined business volume in 2009 and 2010, respectively. Average guarantee fees on single-family mortgages increased modestly in 2010 for each of the three acquisition-volume-based groups of lenders analyzed by FHFA.

11. The lenders that sell smaller volumes of single-family mortgages to the Enterprises tend to pay higher guarantee fees on loans of similar credit quality (or to accept cash prices that reflect higher implicit fees). That result has occurred for several reasons:

    - In determining the guarantee fees they charge, the Enterprises give consideration to the total volume of mortgages delivered by each lender, since larger volumes contribute more to the liquidity that supports the demand for each Enterprise's outstanding MBS.

    - The largest lenders have achieved a degree of influence that can be used to negotiate better terms of business.

    - The administrative costs of doing business with a lender are generally fixed, so the per loan cost of guaranteeing a larger lender's business is lower.

    - Smaller lenders typically choose to sell whole loans to the Enterprises for cash, since they tend to lack the volume and capacity to exchange loans for MBS. The whole loan programs offer smaller lenders faster cash proceeds and reduced financing costs. Buying whole loans results in additional costs for the Enterprises.

INTRODUCTION

Section 1601 of the Housing and Economic Recovery Act of 2008 (HERA)[4] requires the Federal Housing Finance Agency (FHFA) to conduct an ongoing study of the guarantee fees charged by Fannie Mae and Freddie Mac ("the Enterprises") and to submit annual reports to Congress, based on aggregated data collected from the Enterprises, regarding the amount of such fees and the criteria used by the Enterprises to determine them. The section requires that each report identify and analyze:

1. The total revenue earned by the Enterprises from guarantee fees;
2. The total costs incurred by the Enterprises for providing guarantees;
3. The factors the Enterprises considered in determining the amount of the guarantee fees charged;
4. The average guarantee fee charged by the Enterprises;
5. An analysis of any increase or decrease in guarantee fees from the preceding year;
6. A breakdown of the revenue and costs associated with providing guarantees, based on product type and risk classifications; and
7. A breakdown of guarantee fees charged based on asset size of the originator and the number of loans sold or transferred to an Enterprise.

This report, the third prepared by FHFA in fulfillment of Section 1601, covers guarantee fees charged by the Enterprises in 2009 and 2010. Consistent with congressional intent, FHFA's ongoing study focuses and reports on fees charged by the Enterprises for guaranteeing conventional single-family mortgages—loans that are not insured or guaranteed by the federal government and that finance properties with four or fewer residential units.

Section 1601 states that the Director of FHFA is not required or authorized to publicly disclose information that is confidential or proprietary. To avoid public disclosure of protected information, and to focus more on broad trends in Enterprise practice and less on the specific behavior of each Enterprise, this report presents Enterprise data on a combined basis and discloses certain information in a more limited manner.

THE SINGLE-FAMILY MORTGAGE GUARANTEE BUSINESS

Fannie Mae and Freddie Mac acquire single-family mortgages from mortgage companies, commercial banks, credit unions, and other financial institutions. Lenders may exchange loans for mortgage-backed securities (MBS) backed by those mortgages or sell whole loans for cash proceeds.[5] When lenders receive MBS in exchange for their loans, they may hold them as an investment or sell them in the capital markets. The Enterprises also issue MBS backed by pools of loans acquired from multiple lenders.

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[4] Housing and Economic Recovery Act of 2008, Public Law 110-289, 122 Stat 2654 (2008).

[5] Fannie Mae refers to the single-class mortgage-related securities that it has guaranteed as "mortgage-backed securities" (MBS), whereas Freddie Mac calls such securities that it has guaranteed "Participation Certificates" (PCs). This report refers to both as "MBS."

Each Enterprise guarantees the payment of principal and interest on its MBS and charges a fee for providing that guarantee. The guarantee fee covers projected credit losses from borrower defaults over the life of the loans, administrative costs, and a return on capital.[6] Lender guarantee fee payments generally take the form of an ongoing monthly payment stream from the interest paid on the loans and frequently also include an upfront payment at the time of Enterprise loan acquisition.

Some lenders sell single-family mortgages outright to the Enterprises for cash. The cash price paid by an Enterprise depends on the required yield of the loan, which includes an implicit guarantee fee. Larger lenders primarily swap loans for MBS. However, smaller lenders choose primarily to sell whole loans for cash, since those lenders typically lack the volume and capacity to utilize the swap program. Whole loans may be held in portfolio by an Enterprise or financed with MBS issued by the Enterprise.

Financial Performance of the Business in 2009 and 2010

Each Enterprise's recent financial reports provide information on the performance of its single-family mortgage guarantee business. That performance reflects income and expenses on mortgages acquired and guaranteed over many years. Table 1 displays the performance of each Enterprise's single-family guarantee business in 2009 and 2010.[7] The information in the table is generally excerpted from the Annual Reports on Form 10-K that the Enterprises file with the Securities and Exchange Commission (SEC). Those reports are prepared in conformance with Generally Accepted Accounting Principles (GAAP). However, GAAP permits different reporting methods and each Enterprise measures the performance of the single-family guarantee business in a manner that is consistent with the way it manages the business. Thus, as is true for the comparison of financial statements of any two companies, individual line items in the financial reports may not be fully comparable across Enterprises. Further, in 2010 each Enterprise prospectively adopted new consolidation accounting standards that involved consolidating the substantial majority of its single-class securitization trusts. As a result of adopting those new standards, an Enterprise's reported financial results for 2010 may not be fully comparable to reported financial results for the prior year.

The primary sources of revenue for the single-family guarantee business are guarantee fee and interest income, whereas the primary expenses are credit-related expenses and administrative expenses. The net loss for each Enterprise declined in 2010, as credit-related expenses fell sharply. The decline in credit-related expenses was driven by much smaller increases in loss reserves, compared to the substantial increases in 2009. In contrast to 2009, there was neither an increase in seriously delinquent loans nor a sharp decline in house prices during 2010.

On the revenue side, Fannie Mae's shift from net interest income in 2009 to net interest expense in 2010 was driven by the increase in interest not recorded on non-performing loans, the number of which increased as a result of the adoption of the new accounting standards. Before

[6] Fannie Mae uses the term "guaranty fee," whereas Freddie Mac uses the term "management and guarantee fee." This report refers to both fees as "guarantee fees."
[7] Totals in tables in this report may not add due to rounding.

Table 1
Financial Performance of the Single-Family Guarantee Business, 2009 and 2010
($ in millions)

Fannie Mae[1]

	2009	2010 [2]
Revenue		
Guarantee Fee Income[3]	$8,002	$7,206
Net Interest Income (Expense)[4]	467	(5,385)
	8,469	1,821
Expenses		
Credit-Related Expenses	71,320	26,420
Administrative and Other Expenses	947	2,081
	72,267	28,501
Net Loss	(63,798)	(26,680)
Other Performance Data		
Average Book of Business[5]	$2,864,759	$2,873,779
Average Effective Guarantee Fee Rate	27.9 bps	25.1 bps

Freddie Mac[1]

	2009	2010 [2]
Revenue		
Guarantee Fee Income[3]	$3,448	$3,635
Interest Income	307	72
	3,755	3,707
Expenses		
Credit-Related Expenses	29,389	19,461
Administrative and Other Expenses	1,509	502
	30,898	19,963
Net Loss	(27,143)	(16,256)
Other Performance Data		
Average Securitized Portfolio	$1,799,000	$1,728,000
Average Effective Guarantee Fee Rate	18.7 bps	19.6 bps

(1) The data source is the respective SEC Form 10-K for the year ended December 31, 2010. For purposes of the above presentation, relevant information has been extracted and in certain cases reclassified to minimize the number of financial statement categories.

(2) On January 1, 2010, both Enterprises prospectively adopted new consolidation accounting standards. As a result, financial results for 2010 are not directly comparable to results from prior years. Freddie Mac restated its 2009 results, which are now comparable to 2010.

(3) Includes explicit fees earned on mortgage securities guaranteed by each Enterprise and implicit guarantee fees earned on whole mortgages held by each Enterprise in its investment portfolio.

(4) In 2010, Fannie Mae began reflecting the reversal of contractual interest due on non-performing loans as a component of net interest income. Freddie Mac charges most of those amounts to credit related expenses.

(5) Includes guarantees on both securitized and non-securitized loans.

2010, Fannie Mae reflected its reversal of interest income on non-performing loans as part of credit-related expenses. In contrast, Freddie Mac elected to continue to charge most of those amounts to credit-related expenses. Although the adoption of the new consolidation standards had a significant effect on both Enterprises, Freddie Mac also restated its 2009 results to reflect the changes it made in 2010, so its data for 2009 and 2010 are more comparable.

Fannie Mae's guarantee fee income declined in 2010, while Freddie Mac's guarantee fee income increased. That reflects a combination of changes in the amortization of upfront fees into guarantee fee income, the effective guarantee fee rate, and the total book. Prior to the new accounting standards, each Enterprise amortized upfront fees based on expected prepayment rates, which are interest-rate dependent with adjustments each year. Beginning in 2010, each Enterprise began to amortize upfront fees into guarantee fee income based on a static yield set at the time of acquisition.

The unpaid principal balance of outstanding loans was relatively flat for each Enterprise. Although the Enterprises continued to have very high market shares, there was an overall decline in U.S. residential mortgage debt outstanding. The Fannie Mae results reflect both securitized and non-securitized loans, whereas the Freddie Mac results reflect securitized loans only. The slight decline in Freddie Mac's securitized portfolio reflects the purchase of seriously delinquent loans out of MBS pools into the non-securitized holdings. Fannie Mae's average book was nearly unchanged as such purchases did not affect the reported results.

The changes in the average guarantee fee rate at each Enterprise shown in Table 1 reflect changes in the profile of its mortgages. Although Fannie Mae's average guarantee fee rate fell on its average book in 2010, its SEC Form 10-K shows an increase in the average guarantee fee for single-family mortgages it acquired in 2010.

Framework for Analyzing Guarantee Fees

This report follows Enterprise practice in using economic concepts and model-based projections, rather than the financial results reported in Table 1 or other figures prepared in conformance with GAAP, to analyze the single-family guarantee fees charged by the Enterprises. To help set the guarantee fees it charges, each Enterprise estimates the cash it expects to collect and expend over the estimated life of the mortgages. Estimated cash inflows and outflows are converted into annualized rates expressed in terms of basis points of outstanding loan principal. One basis point is equal to 1/100th of one percent. The difference or gap between a transaction's estimated fee and estimated cost (including expected outflows and target rate of return on required capital) provides a measure of the expected profitability of the transaction.

Estimated Fee	=	annualized projected cash inflows, in basis points
Estimated Cost	=	annualized projected cash outflows and return on capital, in basis points
Estimated Gap	=	estimated fee minus estimated cost, in basis points

Such analysis may be done at any level of aggregation. When analyzing groups of mortgages, the estimated annualized fee and cost associated with each loan may be weighted by its unpaid principal balance (UPB). Thus, a loan with a higher UPB will affect the weighted average fee or cost of a group of mortgages more than a lower-balance loan.

As noted, guarantee fee payments from lenders generally take the form of ongoing monthly payments, and frequently also include an upfront payment at the time of Enterprise loan acquisition. Enterprise practice, employed in this report, is to combine both types of payments into the estimated guarantee fee. To do so, the upfront payment is annualized into an ongoing fee equivalent, based on projected prepayments, and added to the ongoing fee, where both are expressed in basis points of a mortgage's UPB, to provide an estimated total guarantee fee. FHFA calculated the estimated annualized upfront payments by dividing them by the present value multiples (PVMs) of the mortgages estimated by the Enterprise at the time of acquisition.[8] Thus, if an Enterprise received an upfront payment equal to 1 percent of a mortgage's UPB and estimated the PVM of the loan to be 4, the equivalent annualized fee is 25 basis points. If the ongoing fee on that mortgage is 15 basis points, then the estimated total guarantee fee is 40 basis points. Differences in estimated total guarantee fees for different years are due in part to differences in estimated PVMs.

Each Enterprise uses its own proprietary costing model to estimate the cost components. Cost includes the annualized projected credit losses, projected float income (or expense), the estimated cost of maintaining capital necessary to support the loan, and a constant for general and administrative (G&A) expenses. The G&A expenses and target return on capital are model inputs rather than calculations.

The estimated fee gap is the difference between the estimated total guarantee fee and the estimated cost. The estimated fee gap is zero when an Enterprise expects to earn its target rate of return on capital on average across the forecasted simulations generated by its internal costing model. A negative or positive estimated gap means the Enterprise expects to earn below or above its target rate of return, respectively. Whereas negative gaps that are lower (closer to zero) are still generally expected to be cash-flow positive, larger negative gaps may be indicative of transactions that are expected to generate a loss. *The estimates of total guarantee fees and fee gaps provided in this report reflect Fannie Mae and Freddie Mac estimates based on models in place at the time of loan acquisition and represent Enterprise forward-looking views at that time.*

Factors the Enterprises Consider in Determining Guarantee Fees

Fannie Mae and Freddie Mac consider many factors in determining the guarantee fees they charge, including the estimated cost of guaranteeing specific mortgages, competitive conditions in the market for bearing mortgage credit risk, regulatory requirements, the relative pricing of each Enterprise's MBS, the Enterprises' public mission, and return-on-capital targets. No set formula

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[8] An upfront fee is quoted in price (as a percent of the loan principal), whereas an ongoing fee is quoted in yield (in basis points of the loan principal). Each Enterprise estimates a PVM that is used to convert the upfront, one-time charge to a yield equivalent; that is, it estimates the multiplier necessary to convert a payment received each year over the life of the loan to a payment received just once at the beginning. The PVM of a mortgage increases with its expected life, which is a function of estimated prepayments.

exists for weighing those factors. Instead, each Enterprise weighs them differently and works towards its view of a balanced outcome in line with market conditions and company goals.

<u>Estimated Cost</u>

A key input into each Enterprise's pricing decisions is the "estimated cost" derived from its internal costing models. Those models use cash flow simulations to estimate cost based on loan attributes that affect performance (e.g., LTV ratio, borrower credit score, and loan purpose) and projected market conditions (i.e., house prices and interest rates along a large number of potential paths).

The models utilize four cost components: expected credit losses, a risk premium, G&A expenses, and net float income or expense. The risk premium is essentially the cost of capital, which is determined both by the Enterprise's target rate of return on capital and by the estimated level of capital required to support the mortgage. To estimate required capital, the models simulate the costs of guaranteeing the loan under stressful economic conditions.

Each Enterprise sets its own target rate of return on capital. Once the rate is set, the Enterprise uses that rate to estimate the costs of all acquisitions regardless of the characteristics of specific mortgages. However, the characteristics of a mortgage, which include attributes of the borrower and the property, determine the amount of capital estimated as necessary to support that loan. Mortgages expected to have higher default rates require more capital, to which the uniform target rate is applied to estimate the risk premium component of the total cost of the guarantee.[9]

The capital required for each loan estimated by an Enterprise's internal costing model has not been linked directly to regulatory capital requirements or to equity measured according to GAAP, nor has FHFA approved either Enterprise's model. Rather, required capital is a model-generated amount used as a pricing construct. Each Enterprise's model determines the capital required for each loan, against which a uniform target rate of return is applied.

Assumptions about G&A expenses are inputs to the costing models, and are based primarily on cost allocations and estimates by each Enterprise's management. Float income or expense is derived from the models, and based primarily on contractually specified remittance requirements and expectations of future interest rates and prepayment levels.

To estimate credit losses, float income or expense, and required capital, Enterprise models use simulations of future economic environments, each of which is represented by an interest rate path and a set of mean house price paths for different localities. Along each path, behavioral models of mortgage performance are used to estimate normal loan amortization, prepayments, defaults, losses given default, recoveries from primary mortgage insurance (MI), and recoveries from lenders in the case of recourse, indemnification, or other credit enhancements. Future interest

[9] For example, assume an Enterprise estimates that two mortgages require capital equal to 1 percent and 3 percent of their respective loan balances each year. If the target return on capital is 10 percent, then the total estimated costs of guaranteeing those loans would include risk premia of 10 basis points and 30 basis points, respectively, of the loan balances.

rates are the main driver of projected prepayments, whereas future house prices are the key factor affecting projected credit losses.

The models are built around a few key assumptions that make material differences in the estimated cost of guaranteeing a mortgage. In addition to mean house price appreciation in the short and long term, those assumptions include:

- House price volatility,
- Stress paths, and
- The target rate of return on capital.

The stress paths that each Enterprise's costing models assumes are not as severe as the housing downturn experienced since 2008. More severe models would assume lower housing values or greater house price volatility. The models also target a rate of return on capital that is likely lower than what many private investors would require. If each Enterprise was subject to the capital standards applicable to fully private firms or set a higher target rate of return commensurate with what private investors would likely require, the outputs of its costing model would reflect higher estimated costs on the loans it acquired.

The main characteristics that determine the estimated cost of guaranteeing a single-family mortgage are:

- Borrower credit score,
- LTV ratio and mortgage insurance coverage,
- Loan purpose (e.g. purchase, cash-out refinance),
- Borrower documentation,
- Occupancy status (e.g. owner-occupied, investor-owned),
- Product type (e.g. 30-year fixed-rate mortgage),
- Mortgage interest rate,
- Property type,
- Origination channel, and
- Borrower debt-to-income ratio.

Competitive Environment

Through the single-family credit guarantee business, the Enterprises compete with each other and with other financial institutions and government agencies that assume the credit risk of single-family mortgages. Historically, the Enterprises' most important competitors have been depository institutions that hold some of the loans they originate in their investment portfolios, and to a lesser degree, the Federal Housing Administration (FHA), which focuses on insuring loans with high LTV ratios made to borrowers with high debt-to-income ratios.

During the mortgage credit boom that extended through the first half of 2007, the Enterprises also faced considerable competition from issuers of private-label MBS. Those issuers were often able to charge less than the Enterprises or depositories to bear the credit risk of subprime, Alternative-A (Alt-A), and other nontraditional mortgages, as relatively low levels of credit enhancement were required to obtain investment-grade credit ratings for those securities. The Enterprises were also major investors in tranches of private-label MBS that carried triple-A credit ratings. During the second half of 2007 and 2008, the market for private-label MBS collapsed, lenders and private mortgage insurers tightened their underwriting standards, depositories became less willing to invest in single-family mortgages, and FHA greatly expanded its volume of new insurance written. Factors driving FHA's expansion were an increase in the size of the mortgages eligible for FHA insurance, changes in the Enterprises' and private mortgage insurers' prices and credit terms, and an increased preference of some investors for the full federal backing of MBS guaranteed by the Government National Mortgage Association (Ginnie Mae), the issuance of which provides long-term financing for nearly all FHA-insured loans.

The credit quality of single-family mortgages acquired by the Enterprises improved in 2009, reflecting changes in the eligibility standards of private mortgage insurers and the continued availability of FHA insurance for loans with higher LTV ratios and lower credit scores, both of which reduced Enterprise acquisitions of such loans. The Enterprises also increased their acquisition of refinance mortgages in 2009. Generally, refinance mortgages have a stronger credit profile than purchase mortgages, so long as borrowers do not take cash out. Included among the refinance loans acquired in 2009 were ones taken out to refinance mortgages previously owned or guaranteed by Freddie Mac or Fannie Mae.

During 2009, the Obama Administration introduced a comprehensive Financial Stability Plan to help protect and support the U.S. housing and mortgage markets and stabilize financial markets. As part of that plan, the Administration announced and implemented the Making Home Affordable program, which is intended to provide assistance to homeowners and prevent foreclosures. The Making Home Affordable program includes the Home Affordable Refinance Program (HARP), under which each Enterprise acquires loans made to refinance mortgages that it owns or that back MBS it has guaranteed. The objective of HARP is to provide access to low-cost refinancing for homeowners who are current on their mortgages and whose properties have fallen in value. The expectation is that refinancing their mortgages will put such borrowers in a better position by reducing their monthly payments or moving them from a loan that poses more risk (such as an interest-only or short-term adjustable-rate mortgage (ARM)) to a loan with more stable payments. The program has the following eligibility requirements:

- The mortgage is already owned by the Enterprise or backs one of its guaranteed MBS;
- At application, the homeowner is current on the loan;
- The property is occupied by the owner;
- The amount owed on the first mortgage does not exceed 125 percent of the current market value of the property;
- Any existing mortgage insurance remains in force at the level of coverage on the refinanced loan;
- The borrower has the capacity to pay the new monthly payment;
- The refinance improves the long-term affordability of the loan; and
- The holder of any second mortgage must agree to remain in the junior lien position.

The credit quality of single-family mortgages acquired by the Enterprises remained high in 2010 as Enterprise and private mortgage insurer underwriting requirements and higher Enterprise guarantee fees limited the volume of higher-risk acquisitions. In both 2009 and 2010, the refinance share of acquisitions was high relative to previous years, reflecting the low level of mortgage rates. Excluding HARP activity, the 2010 acquisition profile was very little changed from 2009. Including HARP activity, which accounted for a greater share of acquisitions in 2010 and is subject to unique underwriting and mortgage insurance allowances, the acquisition profile exhibited slightly greater credit risk.

Other Factors

In addition to estimated costs and the competitive environment, the Enterprises consider a number of other factors in determining the single-family guarantee fees they charge. Those factors include the mandates of safety and soundness, regulatory affordable housing goals, and their charter obligations.

Each Enterprise's credit risk evaluations take into account changing historical data, market developments, and its own forecasts. Credit losses were at historic lows when house price appreciation accelerated rapidly in 2002 through 2005. However, it has become clear that the industry as a whole underpriced single-family mortgage credit risk significantly in that period, as well as in 2006 and 2007. The Enterprises' costing models contributed to that underpricing, which the Enterprises began to correct in the fourth quarter of 2007, when they separately announced increases in guarantee fees beginning in March 2008.

The financial strength or ability of lenders to meet their contractual obligations is an implicit factor in guarantee fee negotiations. Lenders provide representations and warranties on loans they deliver to the Enterprises and, in the event of a failure to fulfill those agreements, are required to repurchase loans upon an Enterprise's request. Compliance by lenders with the Enterprises' underwriting and acquisition standards is important to the Enterprises' business models.

At the time of pricing, the Enterprises expect all but a small portion of their guarantee transactions to generate a positive rate of return over the life of the loans. However, the Enterprises may enter into transactions with lower expected returns than is typical in order to achieve regulatory affordable housing goals (as required by law), fulfill their public mission, or to retain a lender's business. The Enterprises also may adjust their guarantee fees to reflect differences between the market prices for Fannie Mae and Freddie Mac MBS, since those differences affect the all-in value to the lender of exchanging mortgages for either Enterprise's MBS. Freddie Mac has often charged lower guarantee fees to compensate lenders for the lower pricing of its MBS, relative to Fannie Mae's, in the capital markets. In addition, the Enterprises consider how the volumes of mortgages sold by larger lenders contribute to the liquidity of their MBS when negotiating lender-specific prices.

The Enterprises also consider and make tradeoffs among their objectives when making decisions about guarantee fees. Examples of such objectives include ensuring adequate revenue to cover default losses, which favors upfront fees over ongoing fees; having a relatively simple fee structure; charging risk-based fees for specific loan, property, and borrower characteristics, which discourages adverse selection by lenders; and maintaining a diversified customer base.

National and Lender-Level Pricing of Mortgages Delivered on a Flow Basis

Fannie Mae and Freddie Mac acquire single-family mortgages, whether financed with MBS or held in the investment portfolio, through either the flow or bulk transaction channels. On loans delivered on a flow basis, the Enterprises enter into contracts that specify guarantee fees for a lender's future delivery of loans with agreed-upon risk profiles over a set time period. In a bulk transaction, a lender offers to sell a defined set of mortgages, and the Enterprise has the opportunity to review those loans for eligibility and pricing prior to delivery. Guarantee fees on bulk acquisitions are negotiated on an individual transaction basis. Bulk acquisitions, which have fallen steadily since 2007, continued to decline in 2010 and represented only a very small portion of the overall single-family business at each Enterprise. For the year, seasoned loans accounted for nearly all of the mortgages acquired through bulk transactions.

The guarantee fees that Fannie Mae and Freddie Mac each charge on mortgages delivered on a flow basis reflect a combination of prices that each Enterprise sets nationally for all lenders and prices that each negotiates with specific lenders. National pricing typically takes the form of upfront fees based on specific features of a loan or property (e.g., cash-out refinance loans, investment properties, or multiple-unit properties).[10]

Prior to 2008, Fannie Mae and Freddie Mac typically used national pricing for a very limited group of risk features such as mortgages with subordinate financing and loans on investor-owned and multiple-unit properties. In the fourth quarter of 2007, each Enterprise announced an expansion of national pricing that it implemented in March 2008. Each Enterprise introduced an upfront adverse market charge of 25 basis points intended to protect against the heightened credit risk posed by deteriorating housing market conditions. Also in March 2008, each Enterprise introduced varied upfront fees based on LTV ratios and credit scores. Later in 2008, the Enterprises updated those upfront fees in response to their respective views of worsening forecasted house price trends and higher forecasted losses for new mortgage acquisitions. The new or changed pricing affected cash-out refinance mortgages, investor-owned properties, multiple-unit properties, loans with subordinate financing, condominiums, and jumbo conforming mortgages, among other categories. After 2008, each Enterprise generally maintained the upfront fees implemented in that year with limited changes for specific risk attributes.

Model-derived estimates of expected default losses are very sensitive to the product type and LTV ratio of the mortgage and the borrower's credit score. As expected credit losses increase, so does the guarantee fee an Enterprise must charge to earn its target rate of return. In 2008, as credit risk was re-priced throughout the mortgage market, the Enterprises sought to align their credit policies and prices more closely with their estimates of cost, which increased as credit conditions deteriorated. Increases in upfront fees were a major part of that effort. In the second half of 2008, each Enterprise announced that it would increase its adverse market charge to 50 basis points, but later cancelled that increase. In 2009, the Enterprises each implemented additional increases in upfront fees previously announced in 2008, but few new changes in upfront fees were implemented

[10] See https://www.efanniemae.com/sf/refmaterials/llpa/pdf/llpamatrix.pdf and http://www.freddiemac.com/singlefamily/pdf/ex19.pdf

during the year. In late 2010, each Enterprise announced fee increases for most loans with LTV ratios greater than 70 percent, but the changes were not effective until early 2011.

For lenders that deliver a significant volume of single-family mortgages each year, each Enterprise generally negotiates a mortgage delivery contract for a specified term to ensure that those lenders will deliver a minimum level of guarantee business at a predetermined guarantee fee rate. Those lender-level prices generally take the form of ongoing guarantee fees. Contracts typically specify ongoing guarantee fees by product type (e.g., 30-year fixed-rate loans, 15-year fixed-rate mortgages, and loans with interest-only features) and can also include custom charges, such as additional ongoing fees for specific risk characteristics. The ongoing fees apply to mortgages delivered during a specified contract term that meet the eligibility terms of the Enterprises' guides and other terms specific to an Enterprise's relationship with the lender. In prior years, the largest lenders typically entered into semi-annual or annual contracts, whereas ongoing guarantee fees established for smaller customers may have had shorter terms and allowed for more frequent changes of the terms. Recent contracts often included shorter pricing terms. Many factors influence the ongoing guarantee fees charged specific lenders, including:

- The term of the commitment contract;
- The expected profile of the mortgages delivered;
- Commitments to deliver certain types and amounts of mortgages;
- The expected volume of loans that finance units that count toward regulatory housing goals;
- The financial strength of the lender;
- The Enterprise's costs to transact business with the lender;
- The competitive landscape at the time of negotiation; and
- The expected contribution of the lender's deliveries to the liquidity of the Enterprise's MBS.

ANALYSIS OF GUARANTEE FEES CHARGED IN 2009 AND 2010

Under data collection procedures established by FHFA in accordance with Section 1601 of HERA, the Enterprises submit loan group data to the agency on a quarterly basis. For each lender, the Enterprises provide guarantee fee data by loan type. For each loan type, the data are segmented into different categories based on LTV ratios and borrower credit scores.[11] This section uses data on single-family mortgages delivered in 2009 and 2010 to analyze the average guarantee fee charged by the Enterprises in those years as well as how the fees they charged varied by loan type, risk classifications, and the volume of mortgages delivered by lenders. To put the data in context, information on guarantee fees charged by the Enterprises in 2007 and 2008 is also presented. The analysis uses the economic concepts summarized above rather than accounting data prepared in conformance with GAAP. To avoid public disclosure of protected information, and to focus more on broad trends in Enterprise practice and less on the specific behavior of each Enterprise, the analysis presents Enterprise data on a combined basis and discloses certain information in a more limited manner.

This section differs from FHFA's two previous reports in that mortgages acquired under HARP are analyzed separately from non-HARP loans. The reasons for that change are the significant growth in the HARP share of acquisitions in 2010 and the availability of two years of HARP data as a basis for comparison. The section begins by providing the study population and acquisition profile on a combined basis and then uses data on non-HARP mortgages to analyze changes in the average guarantee fee charged and the variation in guarantee fees by product type and risk classification. That allows the presentation of comparable data on all loans acquired in 2007 and 2008 and non-HARP loans acquired in 2009 and 2010. A separate analysis examines guarantee fees on HARP mortgages in 2009 and 2010 and provides evidence of how HARP loans have benefitted borrowers and the Enterprises. The section ends with an analysis of the variation of guarantees by lender delivery volume based on data on non-HARP acquisitions for all four years.

[11] In each quarter, for each lender, product type, LTV ratio, and credit score combination, each Enterprise provides FHFA with the unpaid principal balance of the mortgages it acquired in that quarter and the weighted average estimated upfront and ongoing fees it charged on those loans. The Enterprise also provides its costing model's estimate of the guarantee fee it would have had to charge in order to expect to earn its target rate of return on the mortgages.

Study Population

FHFA has excluded mortgages acquired through bulk transactions[12] from its ongoing study of Enterprise single-family guarantee fees, since those loans are not representative of the Enterprises' credit guarantee business as a whole. The agency has also excluded certain non-standard mortgages delivered on a flow basis, such as reverse mortgages, loans secured by manufactured housing, government-insured or -guaranteed mortgages, and second liens. Those exclusions represent a small share of the total single-family guarantee business. Table 2 shows the volume of single-family mortgages acquired by the Enterprises in 2009 and 2010, the data exclusions, and the UPB and number of loans in the study population for those years.

Table 2
Study Population, 2009 and 2010

	2009				2010			
	Dollars in Millions	Percent	Number of Loans	Percent	Dollars in Millions	Percent	Number of Loans	Percent
Total Single Family Purchases	$1,174,030	100%	5,432,265	100%	$985,830	100%	4,598,608	100%
Excluded All Bulk	$31,147	3%	175,834	3%	$11,310	1%	83,171	2%
Excluded Some Flow	$18,726	2%	114,344	2%	$12,419	1%	61,476	1%
Study Population	$1,124,157	96%	5,142,087	95%	$962,101	98%	4,453,961	97%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

Acquisition Profile

Tables 3 and 4 show the key credit risk characteristics of the single-family mortgages acquired by Fannie Mae and Freddie Mac on a flow basis in 2007 through 2010. Thirty-year, fixed-rate mortgages comprised a declining share of acquisitions, whereas 15-year fixed-rate loans comprised an increasing share. The distribution of borrower credit scores was nearly unchanged. The distribution of LTV ratios shifted toward less equity, but that was driven almost solely by the increased share of HARP mortgages, which improve the acquiring Enterprise's economic position by replacing higher-risk loans. The share of acquisitions with risk layering—multiple characteristics that increase the credit risk of a loan—grew slightly, reversing the trend in 2009. That was driven by the increase in HARP mortgages, which grew to 11 percent of the Enterprises' acquisitions in the program's first full year of operation. HARP loans involve risk layering since they have high LTV ratios and carry less MI protection than other loans with comparable LTV ratios. Jumbo conforming loans reached 10 percent of acquisitions as the program entered its third year. Cash-out refinances fell sharply by 7 percentage points to only 20 percent of acquisitions. Mortgages acquired under targeted Enterprise programs that supported expanded underwriting criteria, such as MyCommunityMortgage and Home Possible, comprised less than 0.5 percent of 2010 acquisitions, down substantially from the 10 percent share in 2007.

[12] Bulk transactions are priced after review of specific loan collateral, rather than through long-term contracts. The Enterprises have used the channel to acquire higher-risk loans that do not meet standard eligibility guidelines and seasoned loans.

Table 3
Product Type and Risk Class Profile, 2007-2010
(share of total unpaid principal balance)

Product Type	2007	2008	2009	2010	Change from 2009
Fixed-Rate 30-year Mortgages	83	80	80	66	(14)
Fixed-Rate 15-year Mortgages	5	10	14	22	8
Other Fixed-Rate Mortgages	3	3	4	6	3
Adjustable-Rate Mortgages	8	7	2	6	4
	100	100	100	100	
Credit Score					
>=720	55	68	85	84	(1)
660-719	28	24	13	13	0
<660	17	8	2	2	0
	100	100	100	100	
Loan-to-Value Ratio					
0-70 Percent	31	38	49	46	(4)
70.1-80 Percent	45	40	40	38	(2)
80.1 - 95 Percent	14	18	10	13	3
>95 Percent	10	3	1	4	2
	100	100	100	100	

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

Table 4
Risk Layering Profile, 2007-2010
(share of total unpaid principal balance)

	2007	2008	2009	2010	Change from 2009
Risk Layering					
At Least One Type of Layering	68	58	54	57	3
No Risk Layering	32	42	46	43	(3)
	100	100	100	100	
Type of Risk Layering (1)					
HARP Refinances	0	0	4	11	6
Jumbo Conforming Loans	0	2	7	10	3
Refinances with Cash Out	31	30	27	20	(7)
Loans with Subordinate Financing	18	12	13	15	2
Investor Loans	4	6	2	4	2
Condominiums and Cooperatives	11	10	7	8	0
Multiple Unit Properties	2	3	1	2	0
Interest-Only Mortgages	13	6	1	1	0
Reduced Documentation Loans	1	1	0	0	0
Targeted Programs (2)	10	4	1	0	(0)

(1) Some loans have multiple characteristics.

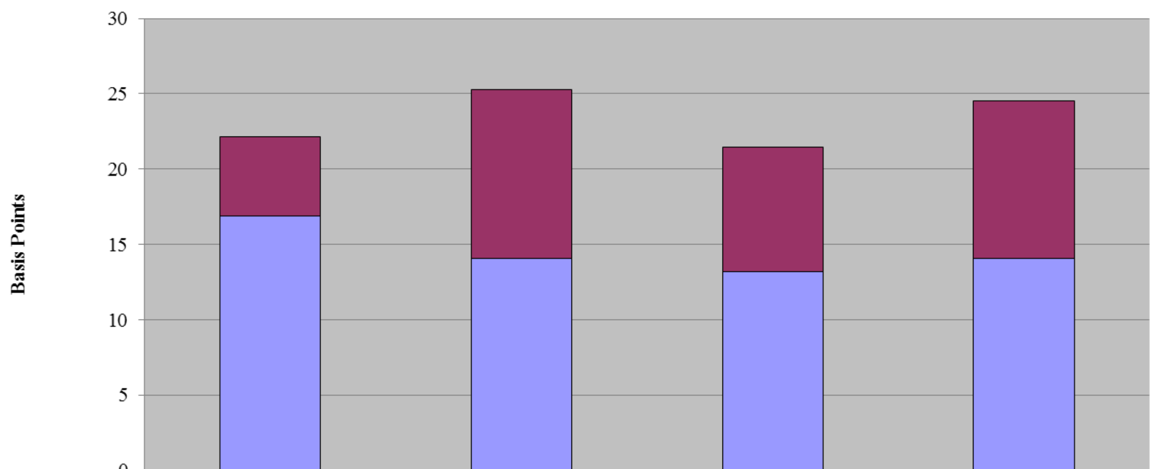
(2) This refers to a collection of products offered by each Enterprise that had less strigent underwriting and were generally targeted at low-income borrowers

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

Average Guarantee Fees on Non-HARP Mortgages

Figure 1 compares the estimated average guarantee fees charged by Fannie Mae and Freddie Mac on single-family mortgages delivered on a flow basis in 2007 through 2010. The estimates for 2009 and 2010 are for mortgages not acquired under HARP; the next section analyzes HARP loans separately. The estimated average upfront fee, annualized in basis points, is shown separately from the average ongoing fee. As indicated in the figure, the average total guarantee fee for non-HARP loans increased from 21 basis points in 2009 to 25 basis points in 2010. If HARP loans had been included in the results for 2009 and 2010, the total fees would have been 22 basis points and 26 basis points, respectively. The increase in charged fees reflects the full-year effect of fee increases initiated in 2009 and, to a lesser extent, changes in the acquisition profile and in pricing during the year. Additionally, each Enterprise estimated a slightly lower average PVM, to reflect faster expected future prepayment speeds, which increased the annualized value of upfront fees charged in 2010.

Figure 1
Average Estimated Single-Family Guarantee Fees, 2007-2010



	2007	2008	2009 non-HARP	2010 non-HARP
Upfront Fee	5	11	8	10
Ongoing Fee	17	14	13	14

Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

The average ongoing fee for non-HARP mortgages increased 1 basis point, from 13 basis points to 14 basis points, reflecting increases in the fees charged some lenders resulting from renegotiation of expiring contracts. The average upfront fee increased 2 basis points, from 8 to 10 basis points. Fee increases, a higher share of 15-year loans, and, to a lesser degree, slight changes in the credit risk profile contributed to the latter increase. The national pricing changes each Enterprise implemented beginning in 2008 have had a cumulative effect over time, as the increases implemented in one year benefit all acquisitions in the next. In 2010, there was a higher share of 15-year fixed-rate mortgages, on which upfront fees are lower on average. However, the downward effect of those loans was partially offset by the effect of more ARMs, which have fees higher than those imposed on 30-year fixed-rate loans. As in the previous year, some loans acquired in 2010 received a 25 basis point fee credit due to superior credit quality, which fully offset the adverse market upfront charge implemented in 2008.

The changes in national guarantee fee pricing initiated by each Enterprise in 2008 were intended to correct for the underpricing of credit risk in prior years and to reflect current risks in an environment of falling house prices. In light of increasing mortgage delinquencies and worsening forecasts for house prices, each Enterprise updated its costing model several times in 2010, as it had in 2008 and 2009, to reflect changes in the market environment and updates to their costing models. The costing models had historically assumed that house prices would continue to rise on average in both the short and long term. In 2008, they were revised to assume a short-term average house price decline followed by a recovery and growth over the long term. The model changes implemented in 2008 generally increased the estimated cost of guaranteeing constant-quality loans. The Enterprises updated their models in 2010 to reflect some signs of stabilizing home prices.

Variation in Fees on Non-HARP Mortgages by Product Type and Risk Classifications

Mortgage guarantee costs depend on the type of mortgage and the characteristics of the loan, the borrower, and the property. Recognizing that sensitivity, Section 1601 of HERA requires FHFA to report on Enterprise revenue and costs associated with providing guarantees by product type and risk classifications. This section of the report does so by grouping mortgages in the study population into three product categories, three credit score categories, and four LTV ratio categories. Those categories indicate how Enterprise guarantee fees varied along three dimensions that greatly influence expected default losses.

Within each category, revenue is measured by the Enterprises' average estimated total guarantee fee. Cost is not shown directly, but information about cost can be inferred from figures showing the gap between the average estimated guarantee fee and the average estimated cost. The estimated gap, rather than the estimated cost, is shown to allow the reader to see the expected relative profitability of guaranteeing mortgages in the different categories. In the figures in this section, the gap is presented with the numerical scale removed, but with the zero line darkened. That approach reveals where mortgages in each category were expected, on a weighted-average basis across all loans acquired by the two Enterprises in that category, to earn more than the acquiring Enterprise's target rate of return (positive gap), or less than that target (negative gap). The numerical scales were removed from the figures that depict gaps to protect confidential and proprietary data, consistent with Section 1601 of HERA.

As noted, one of the key assumptions of each Enterprise's costing model is its target rate of return on required capital. Each Enterprise's target rate of return in 2010 was consistent with its 2009 level. Among non-HARP product type categories, modeled cost fell the most at each Enterprise for ARMs, in part reflecting tighter underwriting standards. Fixed rate 30-year loans had very slightly higher estimated costs at each company, while estimated costs for fixed-rate 15-year loans were slightly lower at Fannie Mae and higher at Freddie Mac. Among the non-HARP credit score categories, modeled costs decreased at each Enterprise for each of the credit tiers. The declines in estimated cost were greater for the lower credit score categories, but the UPB of acquisitions was weighted heavily toward the higher credit score categories. The changes in modeled cost for the non-HARP LTV ratios categories were modest for both Enterprises, except in the over 95 percent tier, where estimated costs increased substantially. That category consisted primarily of HARP-like loans (e.g., refinances on second homes) that provided an economic benefit to the acquiring Enterprise. However, the UPB share for the category was less than one percent, since HARP loans were excluded. The modeled cost estimates for each category are influenced by changes in the acquisition profile within that category, which are not captured by the single dimension analysis. For example, one product type category may have had a higher concentration of loans with lower credit scores. Therefore, smaller changes in estimated cost are less meaningful than larger changes.

<u>Product Type</u>

Most single-family mortgages acquired by the Enterprises are 30-year fixed-rate loans. However, as shown in Table 5, from 2009 to 2010 the share of non-HARP mortgages that were 15-year fixed-rate loans increased from 14 percent to 24 percent, and the share of ARMs increased from 2 percent to 6 percent. Over the four-year study period, 2010 was the first year in which 30-year fixed-rate loans fell below 80 percent of acquisitions, falling to 64 percent. Fixed-rate loans with terms other than 30 or 15 years accounted for only 6 percent of non-HARP acquisitions in 2010. Historically, 15-year fixed-rate loans have had the lowest rate of credit losses among those product types. The average guarantee fee charged by the Enterprises on non-HARP mortgages in 2010 increased for 30-year fixed-rate loans but was nearly unchanged for 15-year fixed-rate loans and ARMs (see Figure 2).[13]

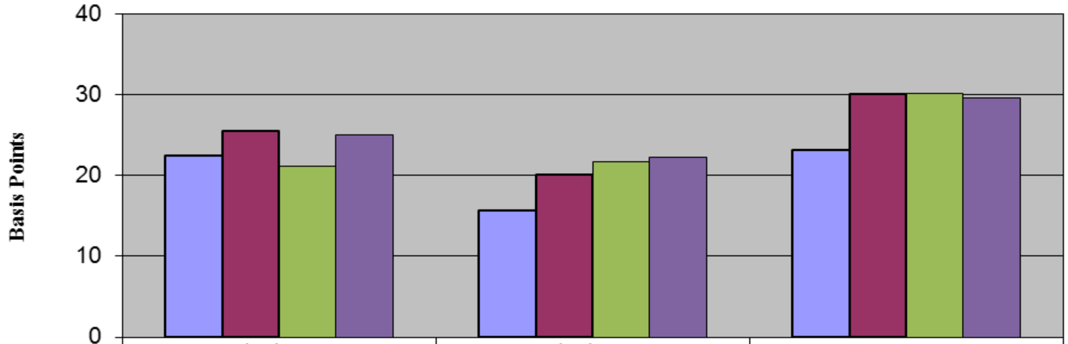
Table 5
Study Population by Product Type
Category, 2007-2010
(share of total unpaid principal balance)

	Fixed-30	Fixed-15	All ARM
2007	83%	5%	8%
2008	80%	10%	7%
2009 non-HARP	80%	14%	2%
2010 non-HARP	64%	24%	6%
Change from 2009	-16%	9%	4%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

[13] "Other Fixed-Rate Mortgages" is omitted from Figures 2 and 3 because that category includes loans with very different terms and the overall purchase volume is small.

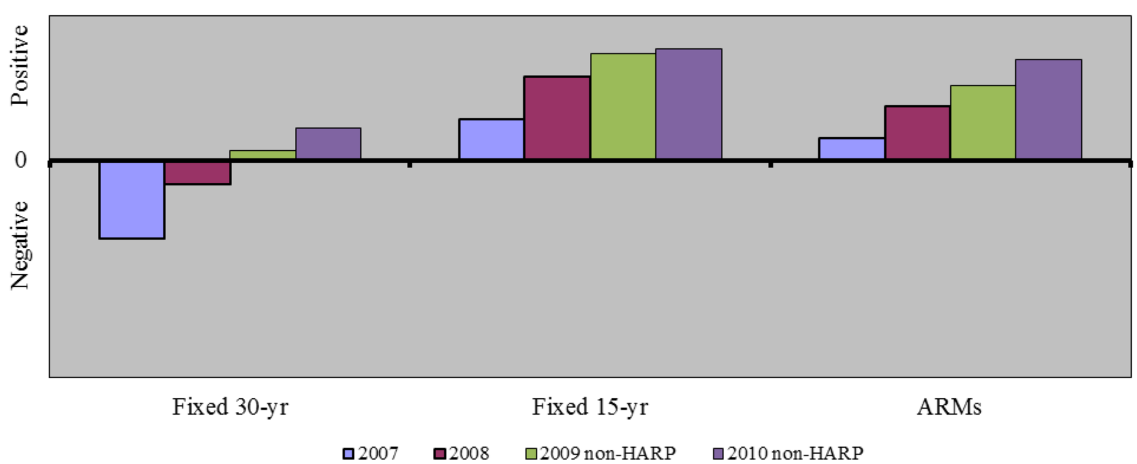
Figure 2
Estimated Single-Family Guarantee Fee by Product Type, 2007-2010



	Fixed 30-yr	Fixed 15-yr	ARMs
2007	22	16	23
2008	26	20	30
2009 non-HARP	21	22	30
2010 non-HARP	25	22	30

Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Figure 3
Estimated Single-Family Fee Gap by Product Type, 2007-2010



Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Estimated costs for non-HARP mortgages fell very slightly overall in 2010, with a noticeable decline for the ARM product type. The underwriting for that product type has improved since the start of the financial crisis. The estimated costs for fixed-rate products were little changed. Each Enterprise's estimated cost for ARMs in 2010 was below that for 30-year fixed-rate mortgages. Fixed-rate 15-year product continued to have the lowest estimated costs. The shorter term and accompanying higher payments on this product type tend to attract borrowers with stronger credit profiles and higher property equity. The net effect of the similar credit profile in 2010 compared to 2009, higher charged fees, and lower estimated costs was to improve the estimated average fee gaps on non-HARP loans for all three product categories (see Figure 3). Thirty-year fixed-rate mortgages had a negative gap on average in both 2007 and 2008, but were gap positive in both 2009 and 2010. Fixed-rate 15-year loans and ARMs were increasingly gap positive over the 2007 to 2010 period. Since each Enterprise was more gap positive on 15-year fixed-rate and ARM products than 30-year fixed-rate loans in 2010, each benefited from the shift in acquisition volume to those products.

Borrower Credit Score

The data FHFA collects from the Enterprises for this study include borrower credit scores calculated using models developed by Fair, Isaac and Company (FICO). The three credit score categories include loans whose borrowers have scores greater than or equal to 720, scores between 660 and 719, and scores below 660. The credit score profile for Enterprise acquisitions of non-HARP mortgages was little changed in 2010. The majority of non-HARP loans continued to have borrower credit scores in the highest score category. As a share of all acquisitions, non-HARP mortgages whose borrowers had scores in that category grew by 17 percentage points in 2009 and increased 1 additional percentage point in 2010 (see Table 6). The shares of the lower credit score categories held steady at only 2 percent in 2010, down nearly 90 percent from the 2007 levels.

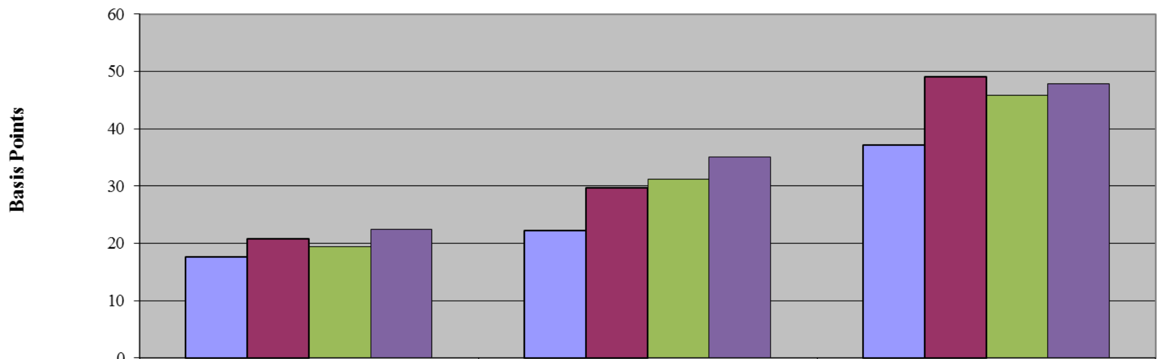
Table 6
Study Population by Credit Score Category, 2007-2010
(share of total unpaid principal balance)

	>=720	660-719	<660
2007	55%	28%	17%
2008	68%	24%	8%
2009 non-HARP	85%	13%	2%
2010 non-HARP	86%	13%	2%
Change from 2009	0%	0%	0%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

The average single-family guarantee fees charged by the Enterprises on non-HARP mortgages increased modestly from 2009 for loans in all three credit score categories (see Figure 4). The modeled cost of non-HARP loans fell at each Enterprise for each tier. The higher charged fees and lower estimated costs on average improved each Enterprise's fee gap for each category. Loans in the 660-719 middle tier became gap positive for both Enterprises in 2010 for the first time in the four-year study period (see Figure 5). However, for the below 660 category, each Enterprise still did not expect, at the time of loan acquisition, to earn its target rate of return. Loan acquisitions in the above 720 credit score group continued to provide expected returns above target rates in 2010.

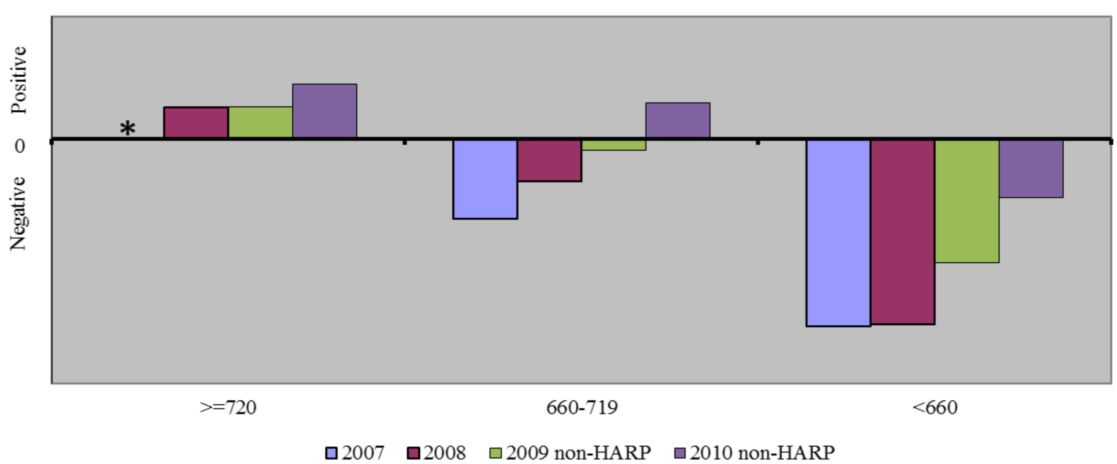
Figure 4
Estimated Single-Family Guarantee Fee by Credit Score Category, 2007-2010



	>=720	660-719	<660
2007	18	22	37
2008	21	30	49
2009 non-HARP	19	31	46
2010 non-HARP	22	35	48

Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Figure 5
Estimated Single-Family Fee Gap by Credit Score Category, 2007-2010



* The estimated fee gap for mortgages with credit scores >=720 was zero in 2007.

Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

In 2010, as in the previous three years, loans with the best credit scores implicitly cross-subsidized mortgages with lower credit scores, as indicated by the differences in the fee gaps for loans in different credit score categories shown in Figure 5. The groups of loans with the lowest scores received the greatest implicit subsidies. Nonetheless, the degree of implicit cross-subsidization fell in 2010 as it had in the two previous years, with improvement in the gaps and low acquisition volume in the lower credit score categories. As was shown in Table 6, loans with credit scores less than 660 represented only two percent of non-HARP acquisition volume in the last two years.

Loan-to-Value Ratio

The share of non-HARP single-family mortgages acquired by Fannie Mae and Freddie Mac that had LTV ratios equal to or less than 70 percent comprised a slight majority of the Enterprises' acquisitions again in 2010 (see Table 7). Non-HARP loans with LTV ratios above 95 percent stayed below 1 percent with the continuation of the shift of lower-down payment loans to FHA, the reduced availability of private MI, and eligibility and underwriting changes. The share of non-HARP loans with an LTV ratio above 80 percent, the level at which credit enhancement such as mortgage insurance is required, remained low at 6 percent. In 2007, nearly a quarter of the acquisitions had been in that category.

Table 7
Study Population by Loan-to-Value Ratio Category,
2007-2010
(share of total unpaid principal balance)

	0 - 70	70.1 - 80	80.1 - 95	> 95
2007	31%	45%	14%	10%
2008	38%	40%	18%	3%
2009 non-HARP	52%	42%	7%	0%
2010 non-HARP	51%	43%	6%	0%
Change from 2009	-1%	1%	-1%	0%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

As the LTV ratio of a mortgage increases, the likelihood of default and the severity of expected default losses rise, resulting in a higher estimated gross cost to the Enterprises. However, the requirement in the Enterprises' charters for loans acquired with LTV ratios above 80 percent to have credit enhancements such as MI protects the Enterprises against some of the losses arising from default. Thus, the risk of mortgages with a specific LTV ratio depends heavily on the level of MI coverage that the Enterprises require for loans with that LTV ratio.

Table 8 shows the standard MI coverage levels applicable in 2009 to most 30-year mortgages and the degree of Enterprise protection against losses, at the time of loan origination, for each coverage amount shown.[14] The standard MI coverage levels required by the Enterprises exceed the charter requirement for 20 percent protection, based on the purchase price or the appraised value of the house. However, any HARP mortgage carries forward the MI coverage, if any, applicable to the previous loan that is refinanced. As a result of house price depreciation, the LTV ratios of HARP loans generally are higher than those of the previous mortgages. As a result, the Enterprises' MI coverage levels for HARP loans are lower than those shown in Table 8.[15]

The guarantee fees charged by the Enterprises reflect the presence of any mortgage insurance. Mortgages without MI are charged higher guarantee fees as LTV ratios increase. Loans that carry MI that have LTV ratios greater than 80 percent are sometimes charged less than mortgages with an LTV ratio of 80 percent, which is the maximum LTV ratio that, for non-HARP loans, does not require MI coverage or other credit enhancement.

Table 8
Mortgage Insurance Coverage Levels
(Non-HARP)
30 Year Loan for $100,000 Home

LTV Ratio	Loan Amount	MI Coverage	Protection at Origination
80	$80,000	0%	$20,000
85	$85,000	12%	$25,200
90	$90,000	25%	$32,500
95	$95,000	30%	$33,500

Source: Federal Housing Finance Agency based on Fannie Mae Seller Guide and Freddie Mac Seller Guide

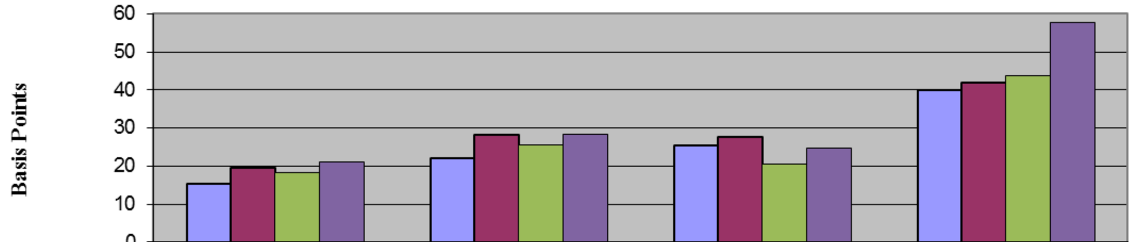
The average guarantee fees charged by each Enterprise on non-HARP mortgages increased for each LTV ratio category in 2010 (see Figure 6). While the figure shows a sharp increase in the average fee charged for the above 95 percent LTV ratio category, the UPB share of acquisitions for that category rounded to zero. In the other categories, estimated charged fees increased by 3 to 4 basis points. The average charged fees for loans in the 70.1-80 percent LTV ratio category were actually higher in 2009 and 2010 than for loans with LTV ratios of between 80.1-95 percent.

[14] The level of Enterprise protection at loan origination is equal to the down payment plus the MI coverage percentage times the loan amount. For example, the protection on a 30-year loan on a house with a purchase price of $100,000 and 10 percent down payment is equal to the down payment of $10,000 plus the MI coverage of 25 percent of the $90,000 loan amount ($10,000 + 25% x $90,000 = $32,500).

[15] In September 2009, Fannie Mae announced alternative MI coverage levels. Specifically, the Enterprise would acquire mortgages with LTV ratios above 80 percent if the MI coverage limited Fannie Mae's exposure to 20 percent of the loan amount, in return for an additional upfront fee. That alternative became available for loans underwritten by Desktop Underwriter 8.0, effective December 12, 2009. Freddie Mac also allows for reduced MI coverage in return for an additional upfront fee, but not down to the 20 percent Charter level.

Whereas those mortgages had a higher probability of default than loans in the lower LTV-ratio categories, most of them had greater loss protection at origination due to the additional protection afforded by MI or other credit enhancement. In a falling house price environment, the Enterprises' greater exposure tended to increase estimated costs more for mortgages with lower protection levels.

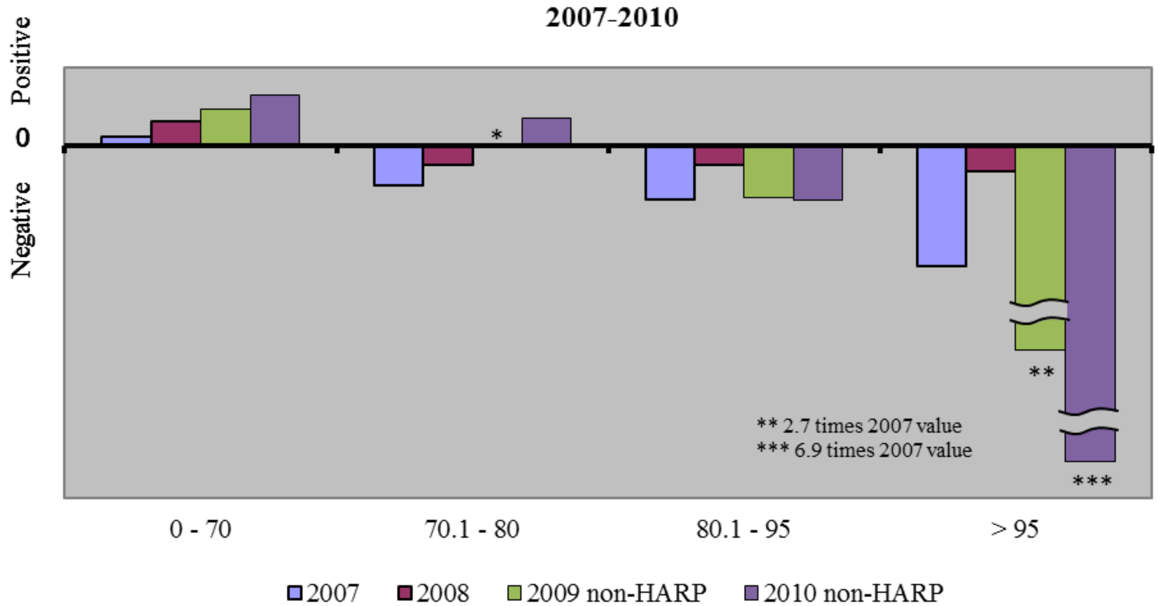
Figure 6
Estimated Single-Family Guarantee Fee by Loan-to-Value Ratio Category, 2007-2010



	0 - 70	70.1 - 80	80.1 - 95	> 95
2007	15	22	25	40
2008	20	28	28	42
2009 non-HARP	18	25	21	44
2010 non-HARP	21	28	25	58

Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Figure 7
Estimated Single-Family Fee Gap by Loan-to-Value Ratio Category, 2007-2010



* The estimated fee gap for mortgages with LTV 70.1-80 was zero in 2009.

Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

For 2010, the limited volume in the greater than 95 percent LTV ratio category consisted primarily of loans that refinanced investor and vacation homes. Those mortgages were not eligible for HARP since they were not owner-occupied primary residences, but were extended HARP-like mortgage insurance flexibilities by the Enterprises. The estimated costs for that highest LTV category increased substantially for each Enterprise. However, as will be discussed in more detail below with regard to HARP loans, since the mortgages refinanced under these flexibilities were already on the Enterprises' books prior to refinancing, the transactions do not add to Enterprise risk exposures while providing the benefits of lowering borrower payments and reducing the risk of default. Even with the exclusion of HARP loans, each Enterprise again had negative fee gaps for the two highest LTV ratio categories in 2010 (see Figure 7). Both Enterprises experienced improvements in the gaps for the two lowest LTV ratio categories, which comprised nearly 95 percent of the acquisitions in 2010.

Average Guarantee Fees on HARP Mortgages

HARP gives owner-occupant borrowers who are current on their mortgages and have current LTV ratios of greater than 80 percent and up to 125 percent the opportunity to refinance and obtain a lower interest rate or a more stable loan product, despite a decline in their property's value that would otherwise make them ineligible under standard Enterprise guidelines without new additional mortgage insurance. Since Fannie Mae or Freddie Mac already holds the credit risk on each loan, they are able to provide expanded eligibility and reduced documentation requirements, which include no minimum credit scores, LTV ratios up to 125 percent, and reduced appraisal requirements. If the original loan had mortgage insurance, the prior insurance is carried over to the new loan, without the need for additional coverage to reflect the decline in the property's value. If the original loan did not have mortgage insurance due to sufficient borrower equity at origination, no mortgage insurance or borrower equity contribution is required for the refinance. Each Enterprise provides a guarantee fee pricing discount by imposing a cap of 2 percent on the upfront fee for each HARP loan.

HARP mortgages increased as a share of Enterprise acquisitions from 4 percent in 2009 to 11 percent in 2010 (see table 9). The first loans were acquired in the second quarter of 2009, and activity grew over the rest of that year, as lenders increased their marketing of the program. The HARP share of acquisitions peaked in the first half of 2010 and fell slightly in the second half. As a refinance program that has now moved beyond its initial eligibility period, the activity levels are more sensitive to prevailing market interest rates. The program will be available to borrowers until June 30, 2012.

Table 9
HARP Share of Unpaid Principal Balance of Mortgages Acquired in 2009-2010, by Quarter

Quarter	2009	2010
1	0%	12%
2	2%	12%
3	7%	9%
4	8%	10%
Full Year	4%	11%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

HARP provides the following benefits to Fannie Mae and Freddie Mac:

- Opportunity to Re-Price Mortgage Credit Risk. The Enterprises currently expect that the additional fees collected on HARP loans, together with the guarantee fees collected on the original loans that are refinanced, will on average cover the projected credit expenses and administrative costs associated with the mortgages. The result is better overall alignment of guarantee fees charged to credit risk than prior to the transactions. However, the additional revenues are less than what would be collected on standard refinances due to the pricing cap, which reduces the upfront fees and because the Enterprises do not charge for the lack or inadequate extent of mortgage insurance.

- Improvement in Economic Position. Because a HARP mortgage is a more stable loan product and/or has a lower mortgage payment than the loan it refinances, and additional fee income is earned through the re-pricing of the credit risk, the overall economic position of each Enterprise is improved by the transaction. Also, by completing the refinance process, borrowers demonstrate a commitment to homeownership, which further reduces the likelihood of default. That benefit is partially offset if borrowers capitalize closing costs, increasing the LTV ratio on the new loan, which increases its credit risk.

- Lower Costs. The costs to the Enterprises of allowing a HARP transaction are lower than the costs of providing a loan modification. The mortgages that are refinanced through HARP are not considered impaired, and Troubled Debt Restructuring (TDR) accounting treatment is not required.

This section used fee gaps, which reflect estimated costs derived from the Enterprise costing models, to compare the guarantee fees Fannie Mae and Freddie Mac charge on non-HARP mortgages to the cost of bearing the credit risk of the loans. Given the special nature of HARP, the analysis now takes a different approach by comparing the interest rates and guarantee fees of HARP mortgages to those of the original loans they replaced. In order to provide a meaningful comparison, the analysis focuses on 30-year fixed-rate mortgages. The analysis provides evidence that HARP has benefitted the Enterprises by increasing guarantee fee revenue and has benefitted borrowers by lowering monthly payments.

Thirty-year, fixed-rate HARP mortgages acquired in 2009 and 2010 had interest rates about one percentage point lower than the interest rates on loans they refinanced (see Table 10), providing a meaningful savings to borrowers. The HARP loans acquired in 2009 had estimated average guarantee fees 5 basis points higher on average than the loans that were refinanced. In 2010, the difference was even greater at 11 basis points. The greater fee increase for the 2010 HARP acquisitions reflected the general increase in fees between the years and a larger share of loans with current LTV ratios between 105 percent and 125 percent than in 2009. As shown in the earlier discussion of the average guarantee fees on non-HARP mortgages, the increase in the average fee for those loans between the years was 4 basis points. The difference for the 30-year fixed rate HARP loans was a little higher at 6 basis points.

Table 10
Comparison of the Interest Rates and Estimated Effective Guarantee Fees of 30-Year Fixed-Rate HARP Mortgages Acquired in 2009-2010 and Those of the Loans They Refinanced

2010 HARP Acquisitions:	**Original Loan**	**HARP Loan**	**Difference**
Interest Rate	6.2%	5.1%	-1.1%
Estimated Charged Fee	21	32	11
2009 HARP Acquisitions:			
Interest Rate	6.1%	5.1%	-1.0%
Estimated Charged Fee	22	26	5

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

Variation in Fees by Lender Delivery Volume

In recent years, each Enterprise has acquired single-family mortgages from a group of about 1,000 lenders. Table 11 shows the number of lenders that delivered such loans to each Enterprise in 2007 through 2010.

Table 11
Number of Lenders by Enterprise

	2007	2008	2009	2010
Fannie Mae	986	1,018	1,079	1,052
Freddie Mac	923	924	1,053	1,044

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

A significant proportion of each Enterprise's single-family acquisitions come from a small group of large lenders. For this study, FHFA ranked lenders by the UPB of the mortgages in the study population that they delivered to each Enterprise in 2007-2010, created three groups for each year: all lenders in each Enterprise's top l0, all lenders in each Enterprise's next 90, and all others. FHFA calculated the average total guarantee fee for each lender group by weighting the amounts for each lender in each group by the UPB for that lender. Mortgages acquired from the top ten lenders at the Enterprises accounted for 76 percent of their combined business volume in 2010, up 3 percentage points from 2009 (see Table 12). Average guarantee fees on non-HARP mortgages increased for each lender group in 2010 (see Figure 8).[16]

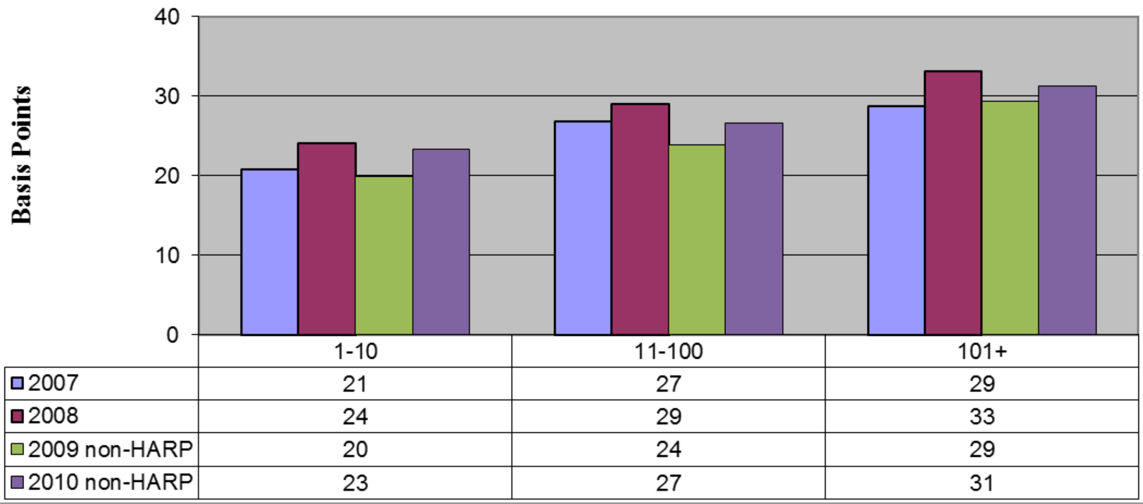
Table 12
Study Population by Lender Acquisition Volume Category, 2007-2010
(share of total unpaid principal balance)

	1-10	11-100	101+
2007	78%	19%	2%
2008	79%	18%	3%
2009	74%	18%	8%
2010	76%	17%	7%
Change from 2009	3%	-1%	-1%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

[16] Section 1601 of HERA specifies a breakdown of guarantee fees charged based on the asset size of the originator and the number of loans sold or transferred to an Enterprise. FHFA has grouped lenders by UPB, consistent with Enterprise practice.

Figure 8
Estimated Single-Family Guarantee Fee by Lender Acquisition Volume Category, 2007-2010



Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Smaller lenders primarily choose to sell whole loans for cash, since they typically lack the volume and capacity to swap mortgages for MBS (see Table 13). In contrast, larger lenders primarily swap loans for MBS under lender-specific guarantee fee contracts negotiated with each Enterprise. When lenders sell whole loans, they receive an established cash price that reflects an embedded guarantee fee. That embedded guarantee fee is not explicitly stated to the lenders, but instead is an input used by the Enterprises in setting cash prices.

Table 13
Whole Loan Share by Lender Acquisition Volume Category, 2007-2010
(share of category unpaid principal balance)

	1-10	11-100	101+
2007	3%	17%	95%
2008	4%	32%	94%
2009	3%	44%	96%
2010	1%	46%	94%
Change from 2009	-2%	2%	-2%

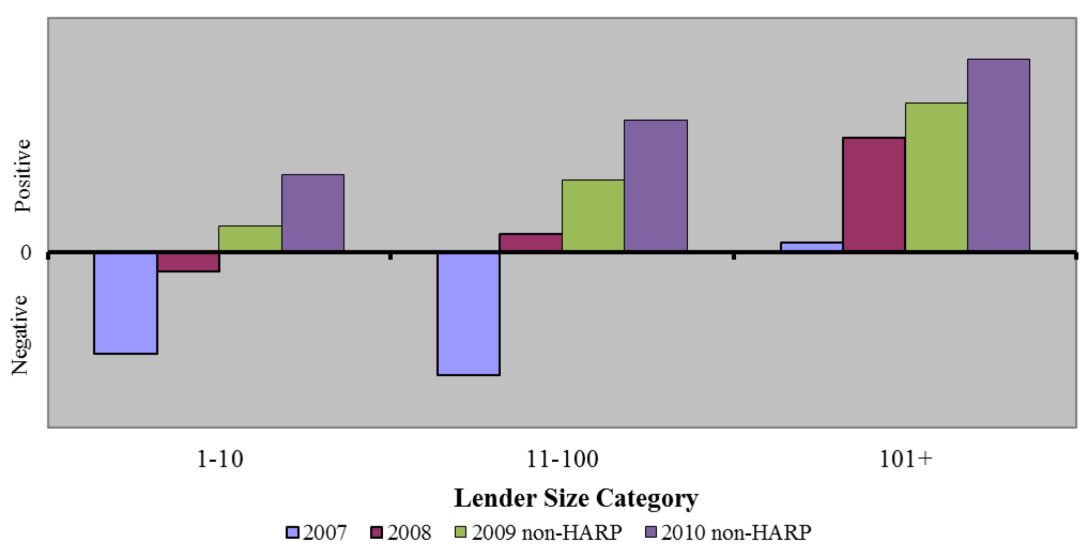
Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

The whole loan programs offer lenders faster cash proceeds and lower financing costs since there is not the intermediate step of swapping loans for MBS and then reselling the MBS to investors. Lenders also benefit from reduced hedging costs through the avoidance of the interest rate risk inherent in holding MBS. Fannie Mae and Freddie Mac finance and hedge the interest rate risk associated with holding the whole loans they acquire. Each Enterprise packages whole loans it has acquired from multiple lenders to create larger securities, which in the capital markets tend to receive better pricing than MBS backed by fewer loans.

In determining the guarantee fees they charge, each Enterprise gives consideration to the total volume of mortgages to be delivered by each lender. They have traditionally taken this approach because the larger a lender's delivery volume, the more that business contributes to the liquidity that supports the demand for the Enterprise's outstanding MBS, which benefits to some extent all lenders that do business with the Enterprise.

In addition to MBS liquidity considerations, guarantee fee differences occur for other reasons. First, the largest lenders have been able to use their significant volumes to negotiate better terms of business such as lower ongoing guarantee fees and sometimes discounts in upfront fees. Second, the administrative costs of doing business with a lender are partly fixed, so the administrative cost per loan of guaranteeing a larger lender's business is lower. The Enterprises' cost models use a fixed allocation of G&A expenses across all loans without respect to a lender's volume. Third, counterparty risk may be less for the larger institutions that are subject to federal regulation and extensive financial disclosure requirements. However, concentrations of counterparty risk and dependence for business on the largest counterparties may more than offset such benefits. For lenders that rely on selling whole loans for cash, the models do not reflect the costs to the Enterprises of financing and hedging the interest rate risk associated with holding whole loans.

Figure 9
Estimated Single-Family Fee Gap by Lender Acquisition Volume Category, 2007-2010



Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Despite those limitations, Figure 9 presents estimated fee gaps for non-HARP mortgages acquired in 2007 through 2010 from lenders in the three acquisition-volume categories. With the exception of medium-volume lenders in 2007, the higher fees paid by the medium- and small-volume lenders and understated model costs result in larger (more positive) estimated fee gaps, on average, for those groups of lenders. In each year, the estimated fee gaps are largest for small-volume lenders.

CONCLUSION

Although Fannie Mae and Freddie Mac consider model-derived estimates of cost in determining the single-family guarantee fees they charge, each Enterprise's pricing often subsidizes its guarantees of some mortgages using higher returns that it expects to earn on guarantees of other loans. In 2007 through 2010, cross-subsidization in single-family guarantee fees charged by the Enterprises was evident across product types, credit score categories, and LTV ratio categories. If there had been no cross subsidization, Enterprise guarantee fees would have been higher on 30-year, fixed-rate mortgages, loans to borrowers with lower credit scores, and mortgages with lower down payments, and lower on loans that were made to borrowers with strong credit scores, had low LTV ratios, and had a 15-year term to maturity. However, because the share of higher-risk loans acquired by the Enterprises was lower in 2009 and 2010 than in 2007 and 2008, overall there was less cross-subsidization in Enterprise single-family guarantee fee pricing in the two later years.

Fannie Mae and Freddie Mac each responded to deteriorating housing market conditions with guarantee fee pricing increases beginning in March 2008. The main changes to pricing were the introduction of a 25 basis point upfront adverse market charge on all single-family mortgages, risk-based pricing based on LTV ratios and borrower credit scores, and various additional fees for combinations of loan attributes that increase credit risk. Those changes helped reduce instances where receipts associated with new acquisitions were expected to be less than costs (including a target rate of return on required capital). Since 2008, each Enterprise has continued to make changes to its guarantee fee pricing, both upfront fees charged for specific risk attributes and ongoing fees. However, in both 2009 and 2010 the changes to pricing were far less extensive than those implemented in the initial year of the financial crisis.

The average estimated cost of guaranteeing non-HARP single-family mortgages acquired by Fannie Mae and Freddie, as estimated by internal Enterprise costing models at the time of acquisition, fell in 2008, 2009, and 2010 as a result of better underwriting, improvements in the credit profile of acquisitions, and improvements in the house price outlook. While the housing market remained stressed and price declines continued in many markets, in 2010 the Enterprises' costing models reflected a more favorable environment than had been assumed in 2009.

As a share of total Enterprise acquisitions of single-family mortgages, HARP loans more than doubled to 11 percent in 2010, as the program entered into its first full year. In 2009 and 2010 HARP borrowers that refinanced from a 30-year fixed rate mortgage into another loan of the same type were able to reduce their interest rates by about one percent on average. Although HARP borrowers were not required to purchase additional or new mortgage insurance on their loans to compensate for low equity positions caused by declining property values, HARP loans still improved each Enterprise's economic position. Borrowers' monthly mortgage payments were reduced on average, and the guarantee fees on HARP loans were higher than those on the loans they replaced, resulting in additional revenue for the Enterprises. Each Enterprise expects that the guarantee fees it will collect on HARP mortgages together with those collected on the loans they replaced will cover on average the expected credit expenses and administrative costs associated with the loans.