FANNIE MAE AND FREDDIE MAC SINGLE-FAMILY GUARANTEE FEES IN 2008 AND 2009

July 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 seller 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 second prepared by FHFA in fulfillment of Section 1601, covers guarantee fees charged by the Enterprises in 2008 and 2009.[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

[1] The first report covered guarantee fees charged by the Enterprises in 2007 and 2008 and can be found at http://www.fhfa.gov/webfiles/14700/GFees72009.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.

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 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, regulatory requirements, 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 that period 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 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 is intended to protect against the heightened credit risk posed by deteriorating housing market conditions. In 2009, 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 were 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 the HARP program 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 much higher than the current market rate and who refinance through HARP typically receive an immediate reduction in their payments. Homeowners who are paying interest at a low introductory rate that will

increase in the future may not see their current payment go down if they refinance to a fixed rate, but will have a more stable, predictable monthly payment and will no longer face the risk of future payment increases due to rising interest rates.

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 seller, 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 89 percent and 96 percent, respectively, of the unpaid principal balance of the single-family mortgages the Enterprises acquired in 2008 and 2009. Unless otherwise noted, the report's findings for 2009 reflect data on non-HARP and HARP mortgages combined. Based on analysis of that 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 than they expect to earn on guarantees of other loans. In 2009 as in 2008, cross-subsidization in single-family guarantee fees charged by each Enterprise was evident across product types, credit score categories, and LTV ratio categories. In each case, 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 substantially lower in 2009, overall there was less cross-subsidization in Enterprise single-family guarantee fee pricing than in the previous year.

2. The average total guarantee fee charged by Fannie Mae and Freddie Mac on single-family mortgages acquired on a flow basis decreased from 25 basis points in 2008 to 22 basis points in 2009. That change reflects declines in both the average ongoing fee and the average upfront fee.

   - The average ongoing fee declined 1 basis point, from 14 basis points to 13 basis points, due to an improvement in the credit quality of acquisitions.

   - The average upfront fee (as measured in estimated annualized revenue) fell 2 basis points, from 11 basis points to 9 basis points. That decline reflected the improved credit quality of acquisitions, with fewer loans being assessed upfront fees for specific risk attributes, and the longer expected lives of loans acquired by the Enterprises.

3. The decline in the total guarantee fees charged by each Enterprise in 2009 resulted from significant improvement in the credit profile of the single-family mortgages they acquired relative to 2008. There were improvements across the product, credit score, and LTV ratio spectrums, as 15-year fixed-rate mortgages grew as a share of total acquisitions, credit scores improved, and fewer loans with low down payments were acquired. The share of mortgages with risk layering—multiple features that increase credit risk—also fell significantly. The improvement in the credit profile of acquisitions more than offset the effect of the pricing increases implemented in 2008 and 2009, resulting in the decline in total guarantee fees charged in 2009.

4. The improvement in the credit profile of Enterprise acquisitions in 2009 also reduced the average expected costs of bearing the credit risk of those loans. The net effect of lower costs and lower guarantee fees charged was an improvement in the estimated fee gaps for the three major product categories: 30-year fixed-rate, 15-year fixed-rate, and adjustable-rate mortgages (ARMs). Further, each Enterprise expected, on average at the time of loan acquisition, to earn its target rate of return on non-HARP mortgages acquired in 2009.

5. Average guarantee fees charged by the Enterprises decreased for every LTV-ratio category in 2009, reflecting improvements in the credit profile of mortgages acquired in each category. Fees decreased the most for loans that had LTV ratios above 80 percent.

6. The improvement in the credit profile of acquisitions tended to reduce model-estimated costs in 2009 and improved the average fee gaps for loans with LTV ratios of 80 percent and below. Loans with LTV ratios above 80 percent continued to have negative fee gaps on average, and those gaps were much wider than in 2008. That widening was due to the Enterprises' acquisition of HARP refinance mortgages. HARP activity began in the second quarter of 2009 and steadily increased over the remainder of 2009. For the Enterprises combined over the full year, HARP activity represented 4 percent of 2009 acquisition volume.

7. Fannie Mae and Freddie Mac supported HARP by limiting the upfront fees they charged on HARP mortgages. As a result, the estimated guarantee fees for those loans were much lower, relative to the fees that Enterprise costing models indicated were required to earn target rates of return, than for non-HARP mortgages. Despite the larger estimated negative fee gaps on HARP mortgages, their acquisition was beneficial to the Enterprises, since the loans refinanced existing mortgages that had higher or less stable monthly payments, thus

reducing the Enterprises' exposure to credit risk, and the guarantee fees charged were generally higher than the fees on the mortgages they refinanced. On average, fees charged for non-HARP loans by each Enterprise were sufficient to cover expected costs, including a reasonable profit.

8. Single-family guarantee fees charged by the Enterprises decreased modestly for the highest and lowest credit score categories in 2009. In the middle credit score tiers, fees increased slightly. The Enterprises did not expect, at the time of loan acquisition, to earn their target rates of return on guarantees of loans in the credit score categories below 720. The estimate negative fee gaps in those categories were wider than in 2008, but the share of mortgages acquired in the categories was much lower.

9. A significant share of the single-family mortgages acquired by each Enterprise comes from a small group of large sellers. Loans acquired from the top ten sellers to the Enterprises combined accounted for 79 percent and 74 percent of their combined business volume in 2008 and 2009, respectively. Average guarantee fees on single-family mortgages decreased modestly in 2009 for each of the three acquisition-volume-based groups of sellers analyzed by FHFA.

10. 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. That occurs for several reasons. First, in determining the guarantee fees they charge, the Enterprises give consideration to the total volume of mortgages delivered by each seller, since larger volumes contribute more to the liquidity that supports the demand for each Enterprise's outstanding MBS. Second, the largest sellers have achieved a degree of influence that can be used to negotiate better terms of business. Third, the administrative costs of doing business with a seller are generally fixed, so the per loan cost of guaranteeing a larger seller's business is lower. Fourth, the Enterprises' acquisition policies and standards expose them to counterparty risk, which tends to be higher for small-volume sellers than for typical larger-volume sellers, many of whom are subject to national bank and thrift regulatory standards and extensive financial disclosure requirements and may have access to varied financing and capital sources. Also, smaller sellers typically choose to sell whole loans, since they tend to lack the volume and capacity to swap loans for MBS. The whole loan programs offer certain benefits to smaller sellers such as faster cash proceeds and reduced hedging costs.

INTRODUCTION

Section 1601 of the Housing and Economic Recovery Act of 2008 (HERA)[3] 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 second prepared by FHFA in fulfillment of Section 1601, covers guarantee fees charged by the Enterprises in 2008 and 2009. 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 swap loans for mortgage-backed securities (MBS) backed by those mortgages or sell whole loans for cash proceeds.[4] When sellers receive MBS in a swap transaction, they may

[3] Public Law 110-289, 122 Stat. 2654 (July 30, 2008) (12 U.S.C. § 4514a).

[4] 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".

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 sellers.

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.[5] 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 2008 and 2009

Each Enterprise's recent financial reports provide information on the financial 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 2008 and 2009. 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, because GAAP permits different reporting methods and the Enterprises account for their guarantee contracts in a different manner, the results are not fully comparable across Enterprises.

Guarantee fee income, reported in Table 1, includes (1) explicit fees earned on MBS (and other mortgage-related securities) guaranteed by each Enterprise and held by investors and (2) implicit guarantee fees earned on whole mortgages held by each Enterprise in its investment portfolio. Upfront fees collected at loan acquisition and other deferred amounts are amortized into guarantee fee income based on the expected prepayment rates of the loans, which are interest-rate dependent. For example, as interest rates decrease, expected prepayment rates on mortgages backing outstanding guaranteed MBS generally increase, resulting in faster accretion of deferred amounts and increasing reported guarantee fee income for the period.

[5] 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".

Table 1
Financial Performance of the Single-Family Guarantee Business, 2008 and 2009
($ in millions)

Fannie Mae	2008	2009	Freddie Mac[1]	2008	2009
Revenue			**Revenue**		
Guarantee Fee Income	$8,390	$8,002	Guarantee Fee Income	$3,729	$3,670
Trust Management Income[2]	256	39	Interest Income[2]	209	123
	8,646	8,041		3,938	3,793
Expenses			**Expenses**		
Credit Related Expenses[3]	29,725	71,320	Credit Related Expenses[3]	17,754	30,560
Administrative Expenses[4]	1,127	1,419	Administrative Expenses	812	867
	30,852	72,739		18,566	31,427
Subtotal	(22,206)	(64,698)	**Subtotal**	(14,628)	(27,634)
Other Performance Data			**Other Performance Data**		
Average Book of Business[5]	$2,715,606	$2,864,759	Average Securitized Portfolio	$1,771,000	$1,799,000
Average Effective Guarantee Fee	30.9 bp	27.9 bps	Average Effective Guarantee Fee	20.7 bp	19.9 bp

(1) As permitted under Generally Accepted Accounting Principles (GAAP), Freddie Mac discloses its single-family segment guarantee fee results, as shown in this table, in a manner that differs from the accounting and reporting in the Enterprise's GAAP income statement. Fannie Mae's segment reporting is consistent with its GAAP income statement presentation. As a result, the Enterprises' respective Guarantee Fee Income amounts include different revenue and expense categories and are not comparable. Notwithstanding the different reporting methods, Freddie Mac generally reports a lower effective guarantee fee rate than Fannie Mae due primarily to three factors: guarantee fee pricing discounts to compensate for differences in the prices of the two Enterprises' mortgage-backed securities (MBS), a higher level of float income earned by Freddie Mac on adjustable-rate mortgages, and differences in the composition of the two Enterprises' mortgages acquired.

(2) Trust Management Income/Interest Income – Float income earned between the date of remittance by servicers and the date of distribution to MBS holders.

(3) Credit Related Expenses – Provision for credit losses and foreclosed property expenses.

(4) Excludes other expenses reported by Fannie Mae for the single-family guarantee business.

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

Source: Federal Housing Finance Agency based on Fannie Mae SEC Form 10-K and Freddie Mac SEC Form 10-K for the year ended December 31, 2009

Each Enterprise's guarantee fee income for the single-family guarantee business fell in 2009 as a result of decreases in its average effective guarantee fee rate (see Table 1). The growth in outstanding guarantees reflects growth in the share of outstanding single-family mortgages guaranteed by each Enterprise, resulting from fully private firms' reduced willingness to accept mortgage credit risk during the current mortgage market crisis. The decrease in the average guarantee fee rate reflects the improved credit quality of 2009 acquisitions. The decline in trust management income and interest income in 2009 reflects a lower rate of interest earned on balances held between the receipt of mortgage payments from servicers and the distribution of payments to MBS investors. (This report refers to those earnings generically as "float income".) The large increase in credit-related expenses in 2009 reflects increases in loan loss provisions related to higher delinquencies and defaults and greater average loss severities for each Enterprise's acquisitions.

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 $1/100^{th}$ 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, an Enterprise weights the estimated annualized fee and cost associated with each loan 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.[6] 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.

The primary components of cost are also model projections. That 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. Each Enterprise uses its own proprietary costing model to estimate the cost components.

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 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., the loan-to-value (LTV) ratio,

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[6] 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.

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 calculate 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.[7]

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 calculate all four components of estimated cost, 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 mortgage insurance (MI), and recoveries from lenders in the case of recourse, indemnification, or other credit enhancements. Future interest rates are the main driver of projected prepayments, whereas future house prices are the key factor affecting projected credit losses. As house price appreciation accelerated rapidly in 2002-2005, the Enterprises' costing models underestimated greatly the credit risk of new mortgage acquisitions,

[7] 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.

principally because of the unrealized optimistic future house price paths used in the models.

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 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 improved credit quality of single-family mortgages acquired by the Enterprises in 2009 reflects 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 loans have a stronger credit profile than purchase mortgages. Included among the refinance loans 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 HARP, under which each Enterprise acquires loans made to refinance mortgages that it owns or that back MBS it has guaranteed. The objective of the HARP program is to provide access to low-cost refinancing for responsible homeowners 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 owned or backs an MBS guaranteed by Fannie Mae or Freddie Mac;
- At application, the homeowner is current on the loan;
- 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.

Fannie Mae and Freddie Mac made major efforts to support HARP and the Home Affordable Modification Program (HAMP) in 2009. Beginning in the second quarter, both Enterprises made pricing concessions to support HARP. For example, through August Freddie Mac limited its upfront fee for HARP refinances to the 25 basis point adverse market fee imposed on all loans. Beginning in September, Freddie Mac capped

total upfront fees on HARP mortgages. From the beginning of the program, Fannie Mae reduced upfront fees for HARP loans with certain combinations of LTV ratios and credit scores and capped total upfront fees on those mortgages. Freddie Mac implemented similar pricing beginning in September. Those pricing concessions caused the guarantee fees that each Enterprise charged for HARP mortgages to be generally lower than the fees that its costing model indicated would be necessary to earn the Enterprise's target rate of return. However, a HARP loan generally improved the borrower's financial position. That improvement and the upfront fee charged on the transaction generally made the Enterprise better off, since these loans were replacing other loans with worse characteristics, so it was beneficial to the Enterprises to purchase the loans despite the relatively high expected costs associated with the guarantee of the new loan.

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 with guarantee fee increases in 2008.

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 sellers with the Enterprises' underwriting and acquisition standards is important to the Enterprises' business models. The financial strength or ability of sellers to meet their contractual obligations is an implicit factor in guarantee fee negotiations.

At the time of pricing, the Enterprises expect most 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 seller's business. They 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 swapping mortgages for either Enterprise's MBS. Freddie Mac has often charged lower guarantee fees to compensate sellers 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 sellers contribute to the liquidity of their MBS when negotiating seller-specific prices.

The Enterprises also consider and make tradeoffs among their strategic objectives when making decisions about guarantee fees. Examples of such objectives include ensuring adequate revenue to cover default losses, which provides a reason to favor 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 sellers; and maintaining a diversified customer base.

National and Seller-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 fell substantially in 2009 to a very small portion of the overall single-family business at both Enterprises. 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 charge on mortgages delivered on a flow basis reflect a combination of prices that each Enterprise sets nationally for all sellers and prices that each negotiates with specific sellers. 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).

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. In 2009 the Enterprises generally maintained the upfront fees implemented in 2008.

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 implemented additional increases in upfront fees previously announced in 2008, but few new changes in upfront fees were implemented during the year.

For sellers 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 sellers will deliver a minimum level of guarantee business at a predetermined guarantee fee rate. Those seller-level prices generally take the form of ongoing guarantee fees. Contracts typically specify ongoing 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' selling guides and other terms specific to an Enterprise's relationship with the lender. The largest sellers typically enter into semi-annual or annual contracts, whereas ongoing guarantee fees established for smaller customers may have shorter terms and allow for more frequent changes of the terms. Many factors influence the ongoing guarantee fees charged specific sellers, 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 seller;
- The Enterprise's costs to transact business with the seller;
- The competitive landscape at the time of negotiation; and
- The expected contribution of the seller's deliveries to the liquidity of the Enterprise's MBS.

ANALYSIS OF GUARANTEE FEES CHARGED IN 2008 AND 2009

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 seller, 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.[8] This section uses data on single-family mortgages delivered in 2008 and 2009

[8] In each quarter, for each seller, 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. Each Enterprise provides the volume of single-family

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 sellers. To put those data in context, information on guarantee fees charged by the Enterprises in 2007 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.

Study Population

FHFA has excluded mortgages acquired through bulk transactions 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 2008 and 2009, the data exclusions, and the UPB and number of loans in the study population for those years.

Table 2
Study Population, 2008 and 2009

	2008				2009			
	Dollars in Millions	Percent	Number of Loans	Percent	Dollars in Millions	Percent	Number of Loans	Percent
Total Single Family Purchases	$938,229	100%	4,559,068	100%	$1,174,183	100%	5,432,263	100%
Excluded All Bulk	$86,523	9%	484,706	11%	$31,147	3%	175,834	3%
Excluded Some Flow	$21,263	2%	139,028	3%	$18,880	2%	114,612	2%
Study Population	$830,443	89%	3,935,334	86%	$1,124,157	96%	5,141,817	95%

Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac
* Components may not add to totals due to rounding

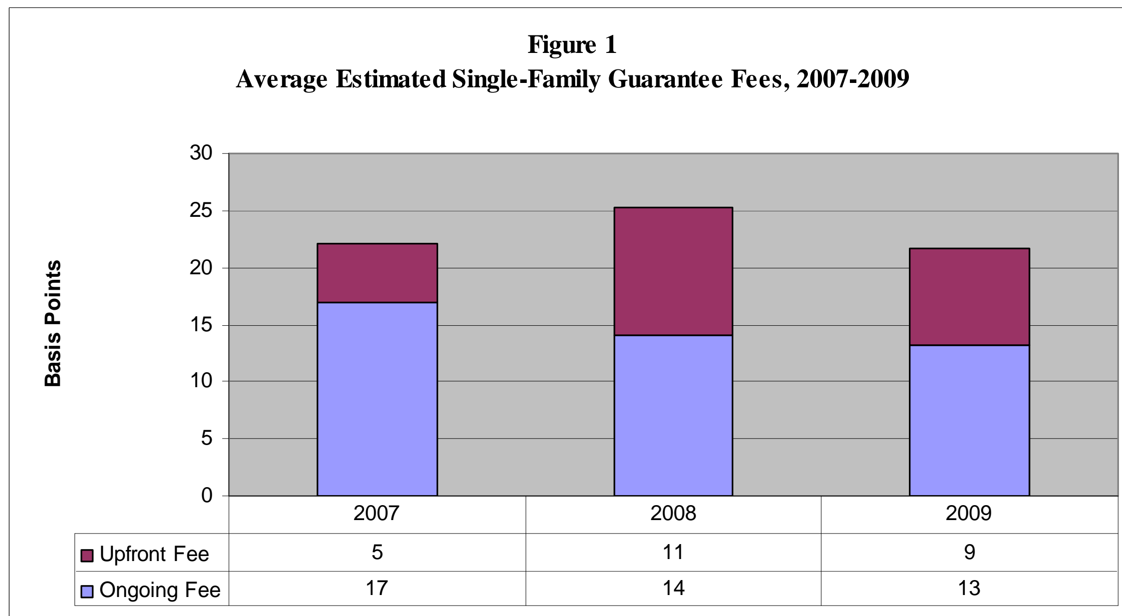
Average Guarantee Fees

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 2009. 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 decreased from 25 basis points in 2008 to 22 basis points in 2009. That reflects the improved credit quality of loans purchased, with smaller shares of loans being assessed upfront fees for specific risk attributes and being charged lower ongoing fees.

mortgages that it acquired from each seller but does not identify sellers by name. FHFA does not collect loan-level information as part of this study.

Additionally, each of the Enterprises estimated a higher average PVM, to reflect slower expected future prepayment speeds, which lessened the annualized value of the upfront fees.

Figure 1
Average Estimated Single-Family Guarantee Fees, 2007-2009



	2007	2008	2009
Upfront Fee	5	11	9
Ongoing Fee	17	14	13

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

The average ongoing fee declined 1 basis point, from 14 basis points to 13 basis points, due to an improvement in the credit quality of acquisitions. The average upfront fee fell 2 basis points, from 11 to 9 basis points. The effect of the national pricing changes implemented in 2008, which increased upfront fees and generally remained in place in 2009, was offset by a better mix of business—proportionally more 15-year fixed-rate mortgages, more loans with low LTV ratios and high credit scores, and fewer loans with "risk layering" (multiple features that increase credit risk). As in the previous year, some loans acquired in 2009 received a 25 basis point fee credit due to superior credit quality, which fully offset the adverse market charge initiated 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, the Enterprises updated their costing models several times in 2009, as they had in 2008, to reflect changes in the market environment. 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 decline in house price 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. Both Enterprises continued to forecast negative house price growth during 2009, but that depreciation was less severe than they had forecast in 2008.

As noted, the impact of the increase in upfront fees initiated in 2008 was offset in 2009 by a significant improvement in the acquisition profile. Tables 3 and 4 show the share of loans acquired in 2007 through 2009 that had key risk characteristics that affect expected default losses. In 2009, there were improvements across the product, credit score, and LTV ratio spectrums, as 15-year fixed-rate mortgages grew as a share of total acquisitions, credit scores improved, and fewer loans with low down payments were acquired (see Table 3). The share of mortgages with risk layering also fell significantly in 2009, continuing a trend begun in 2008 (see Table 4). Interest-only loans and mortgages acquired under targeted Enterprise programs that supported expanded underwriting criteria, such as MyCommunityMortgage and Home Possible, had the largest drops in their shares of total acquisitions. HARP refinance mortgages, which the Enterprises began to acquire in the second quarter of 2009 and accounted for 4 percent of acquisitions for the year, involve risk layering since they have high LTV ratios and carry less MI protection than other loans with comparable LTV ratios.

Table 3
Acquisition Profile, 2007-2009*
(share of total unpaid principal balance)

Product Type	2007	2008	2009	Change from 2008
Fixed-Rate 30-year Mortgages	83	80	80	1
Fixed-Rate 15-year Mortgages	5	10	14	4
Other Fixed-Rate Mortgages	3	3	4	1
Adjustable-Rate Mortgages	8	7	2	(5)
	100	100	100	0
Credit Score				
>=720	55	68	85	17
660-719	28	24	13	(11)
<660	17	8	2	(6)
	100	100	100	0
Loan-to-Value Ratio				
0-70 Percent	31	38	49	11
70.1-80 Percent	45	40	40	(0)
80.1 - 95 Percent	14	18	10	(9)
>95 Percent	10	3	1	(2)
	100	100	100	(0)

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

* Components may not add to totals due to rounding

Table 4
Risk Layering Profile, 2007-2009*
(share of total unpaid principal balance)

	2007	2008	2009	Change from 2008
Risk Layering				
At Least One Type of Layering	68	58	54	(4)
No Risk Layering	32	42	46	4
	100	100	100	0
Type of Risk Layering [1]				
Refinances with Cash-Out	31	30	27	(3)
HARP Refinances	0	0	4	4
Loans with Subordinate Financing	18	12	13	1
Condominiums and Cooperatives	11	10	7	(3)
Investor Loans	**4**	**6**	**2**	**(3)**
Multiple Unit Properties	2	3	1	(1)
Interest-Only Mortgages	13	6	1	(5)
Reduced Documentation Loans	1	1	0	(1)
Affordable Housing Programs [2]	10	3	0	(3)
Jumbo Conforming Loans	0	2	7	4

[1] Some loans have multiple characteristics.
[2] This category includes products acquired by each Enterprise that supported expanded underwriting criteria that were generally targeted at low-income and minority borrowers
Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac
* Components may not add to totals due to rounding

Variation in Fees 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.

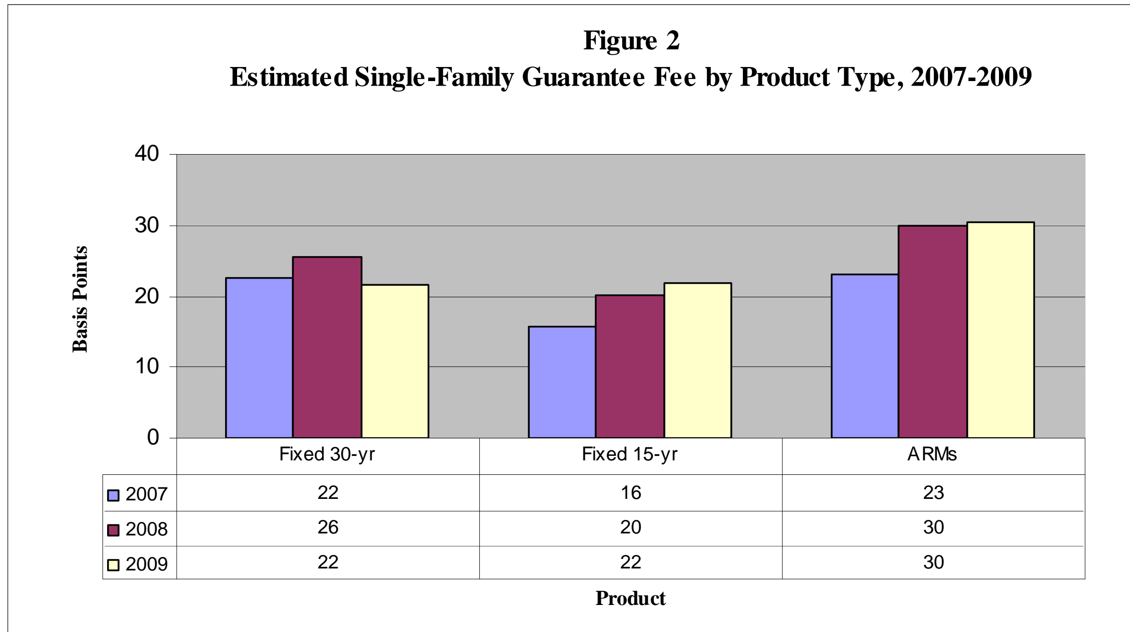
As noted, one of the key assumptions of each Enterprise's costing model is its target rate of return on required capital. Each Enterprise targeted a lower rate of return in 2009 than in 2008, and their target rates of return were closer than in the previous year. Fannie Mae's cost estimates continued to decline in 2009 for every product type and all credit score categories except 660 to 719. Costs increased for both Enterprises for loans with LTV ratios greater than 80 percent, in large part due to HARP loans, for which the Enterprises require lower MI protection than they do for non-HARP loans. Freddie Mac's cost estimates decreased for 15- and 30-year fixed rate mortgages but rose significantly for ARMs as the Enterprise changed its ARM modeling methodology. Just as each Enterprise's target rate of return affects its estimates of cost, those estimates affect its estimated guarantee fee gaps.

Product Type

Most single-family mortgages acquired by the Enterprises are 30-year fixed-rate loans. However, as shown in Table 3, from 2008 to 2009, the share of 15-year fixed-rate loans increased from 10 percent to 14 percent, ARMs declined from 7 to 2 percent, and other fixed-rate loans rose from 3 to 4 percent. Historically, 15-year fixed-rate loans have had the lowest rate of credit losses among those product types. The average guarantee fees charged by the Enterprises increased for 15-year fixed-rate mortgages, decreased for 30-year fixed-rate loans, and remained constant for ARMs (see Figure 2).[9]

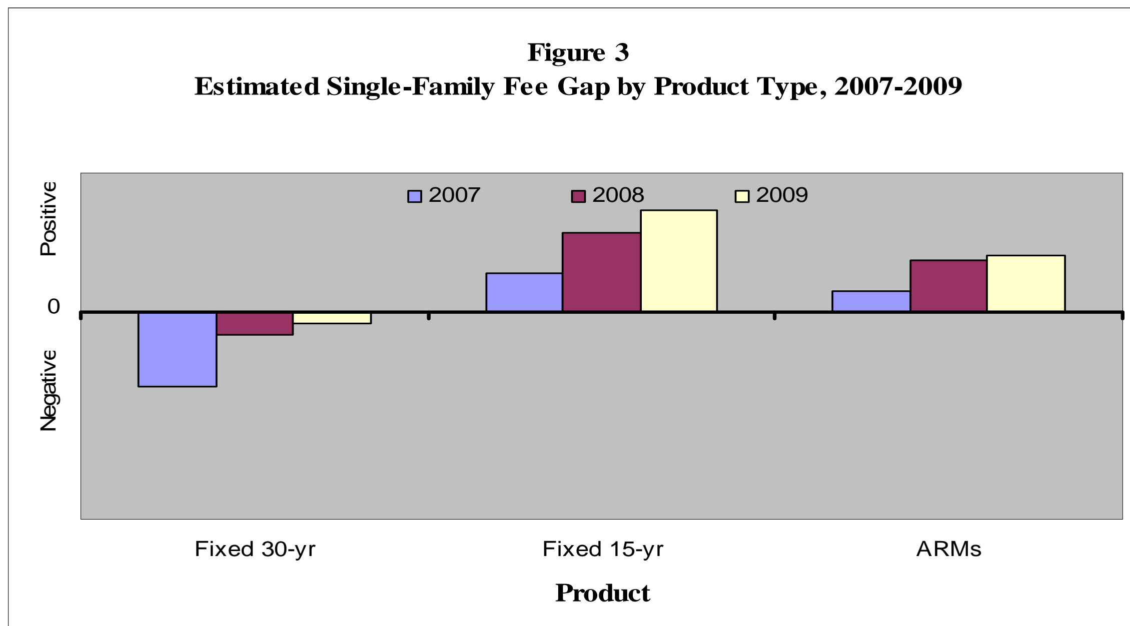
At the same time, the improvement in the credit quality of the acquisition profile tended to reduce average expected costs for all fixed-rate products. The net effect was to improve estimated average fee gaps for all three product categories (see Figure 3). Thirty-year fixed-rate mortgages had a negative gap on average in both 2008 and 2009, although Fannie Mae estimated a positive gap in 2009. Fannie Mae expected to earn more than its target rate of return on 15-year fixed-rate loans and ARMs acquired in 2009. Freddie Mac expected to earn more than its target rate of return on 15-year fixed-rate loans, as in 2008, but its gap for ARMs became negative in 2009, reflecting lower expected float reinvestment earnings and a change in the Enterprise's costing model for adjustable-rate loans.

[9] "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.



	Fixed 30-yr	Fixed 15-yr	ARMs
2007	22	16	23
2008	26	20	30
2009	22	22	30

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



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

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 majority of single-family mortgages have borrower credit scores in the highest score category. As a share of all

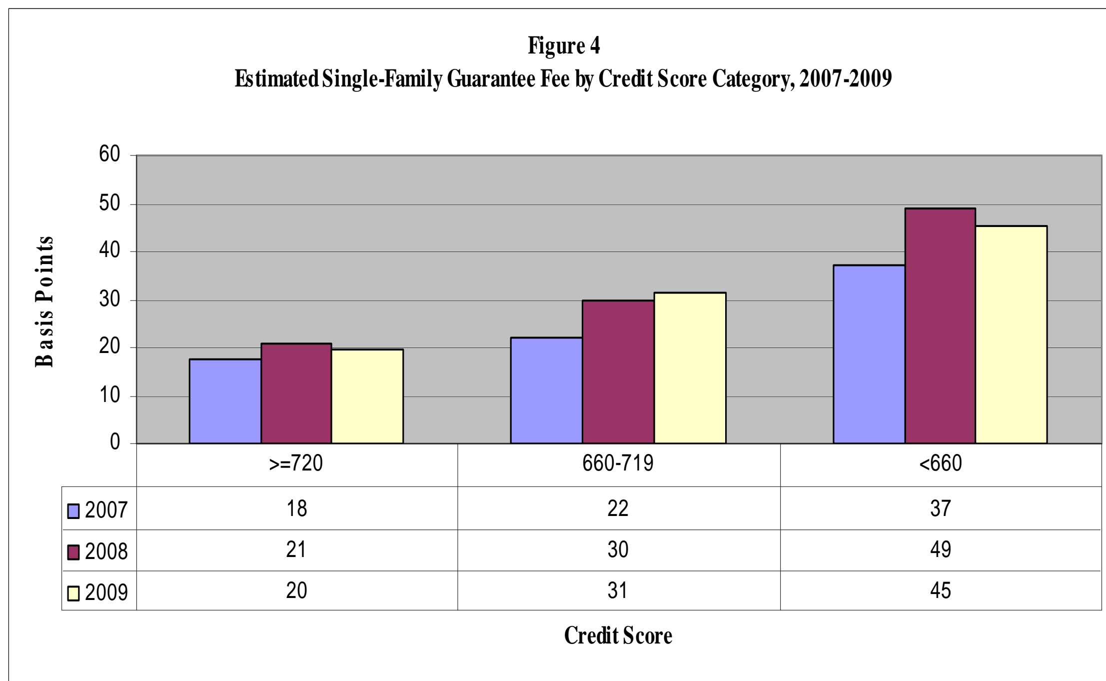
acquisitions, loans whose borrowers had scores in that category grew by 17 percentage points in 2009 (see Table 5). The shares of the lower credit score categories declined, with the steepest drop among loans to borrowers with scores between 660 and 719.

The average single-family guarantee fees charged by the Enterprise decreased modestly from 2008 for mortgages in the highest and lowest credit score categories in 2009. In the middle credit score category, fees increased slightly (see Figure 4). Despite the fee decreases, the Enterprises did not expect, at the time of loan acquisition, to earn their target rates of return on guarantees of loans in the credit score categories below 720 (see Figure 5). The estimated negative fee gaps in those categories were wider than in 2008.

Table 5
Study Population by Credit Score Category, 2007-2009
(share of total unpaid principal balance)

	>=720	660-719	<660
2007	55%	28%	17%
2008	68%	24%	8%
2009	85%	13%	2%
Change from 2008	17%	-11%	-6%

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



	>=720	660-719	<660
2007	18	22	37
2008	21	30	49
2009	20	31	45

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

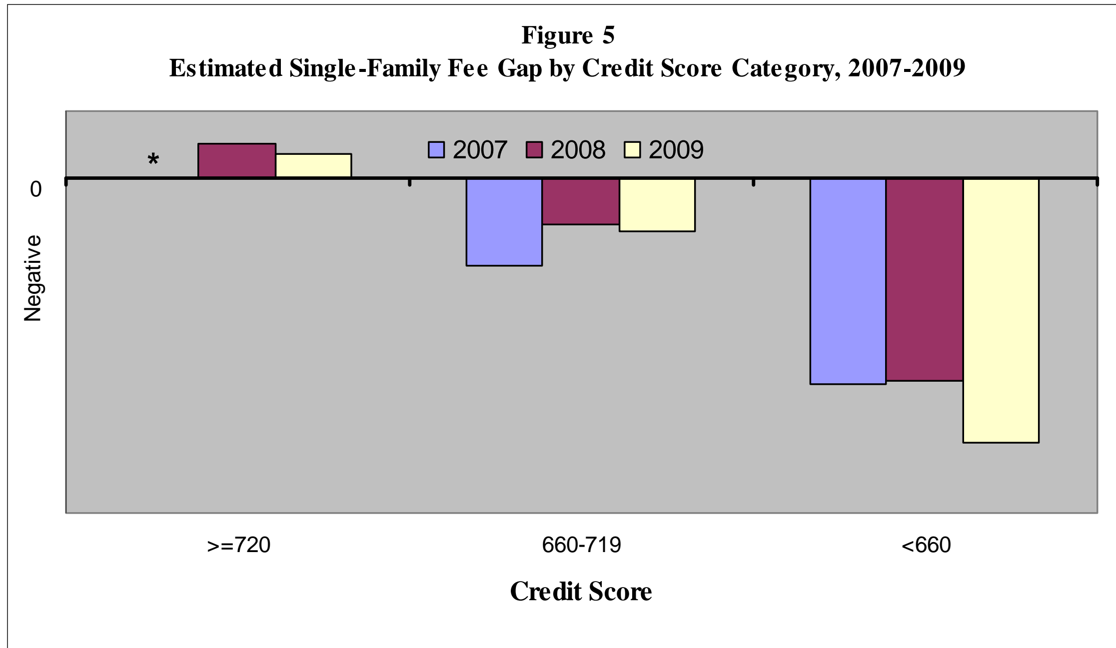


Figure 5
Estimated Single-Family Fee Gap by Credit Score Category, 2007-2009

* 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 2009, as in the previous two 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 2009 as it had in 2008, as the share of mortgages in the lower credit score categories continued to decline. As shown in Table 4, loans with credit scores less than 660 represented only two percent of acquisition volume in 2009.

Loan-to-Value Ratio

The share of single-family mortgages acquired by the Enterprises that had LTV ratios equal to or less than 70 percent increased significantly in 2009 as underwriting standards and credit availability remained tight (see Table 6). Restrictions on cash-out refinances played a role in that shift. Loans with LTV ratios above 95 percent declined as a result of a shift of higher-risk business to FHA, the reduced availability of private MI, and eligibility and underwriting changes. HARP refinance loans accounted for virtually all of the UPB of the loans with LTV ratios above 95 percent and about one-third of the UPB of the loans with LTV ratios between 80 percent and 95 percent. For the first time in years the loan category with LTV ratios of less than 70 percent had the largest share of total acquisitions in 2009, supplanting loans with LTV ratios between 70.1 percent and 80 percent.

Table 6
Study Population by Loan-to-Value Ratio Category, 2007-2009
(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	49%	40%	10%	1%
Change from 2008	11%	0%	-9%	-2%

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 7 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.[10] 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 7.[11]

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.

[10] 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).

[11] 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.

Table 7
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
97*	$97,000	35%	$36,950

Source: Federal Housing Finance Agency based on Fannie Mae Seller Guide and Freddie Mac Seller Guide
* Freddie Mac does not acquire loans with LTV ratios above 95 percent as part of its standard offerings.

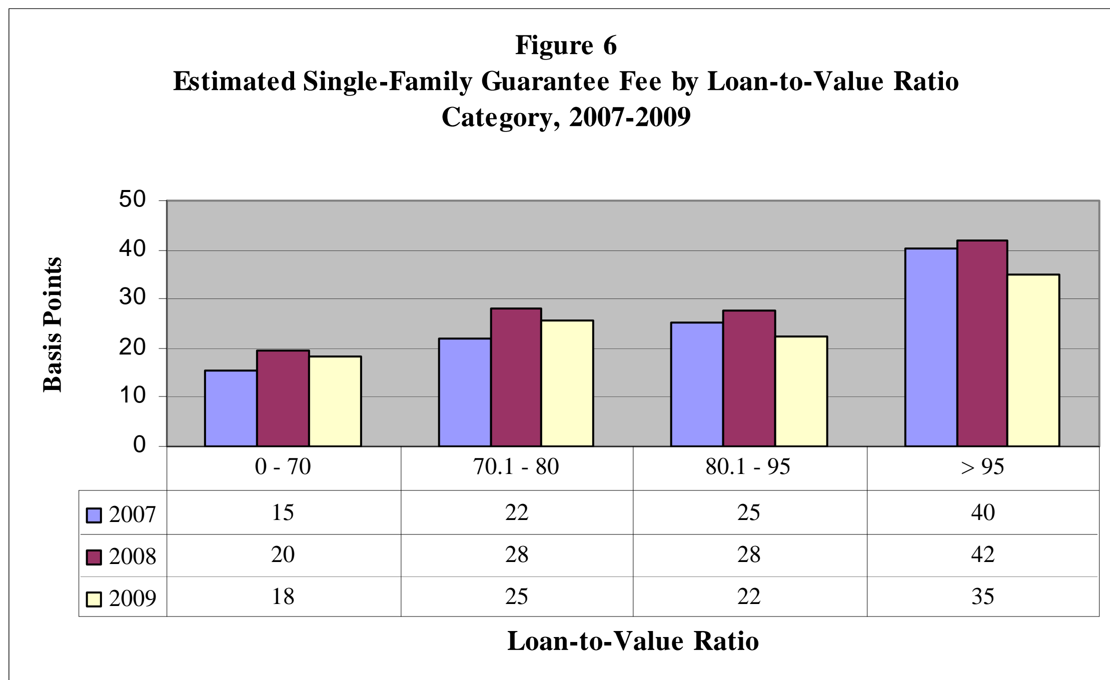
The average guarantee fees charged by the Enterprises decreased for every LTV-ratio category in 2009, reflecting improvements in the credit profile of mortgages acquired in each category (see Figure 6). Fees decreased the most for loans that had LTV ratios above 80.01 percent. Whereas those mortgages 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 2008 and 2009, the Enterprises' greater exposure to the falling house price environment tended to increase estimated costs more for mortgages with lower protection levels.

Mortgages with LTV ratios in excess of 95 percent have a significantly higher likelihood of default and level of expected credit losses. The Enterprises generally charge higher guarantee fees on those loans than on mortgages in lower LTV-ratio categories. Some of the mortgages with LTV ratios above 95 percent go to borrowers meeting specified income limits or geographical requirements that permit the units financed by the loans to count toward regulatory requirements related to affordable housing goals. That practice may be consistent with the requirement in the Enterprises' charters that they shall provide "ongoing assistance to the secondary market for residential mortgages (including activities relating to mortgages on housing for low- and moderate-income families involving a reasonable economic return that may be less than the return earned on other activities) by increasing the liquidity of mortgage investments and improving the distribution of investment capital available for residential mortgage financing …."[12] The foregoing does not imply that the Enterprises should engage in

[12] Section 301 (12 U.S.C. § 1716 (3)) of the Federal National Mortgage Association Charter Act, and Section 301 (12 U.S.C. § 1451(b)(3)) of the Federal Home Loan Mortgage Corporation Act.

unprofitable activities. Excluding HARP loans, neither Enterprise had a negative gap, on average, for its acquisitions in 2009.

Figure 6
Estimated Single-Family Guarantee Fee by Loan-to-Value Ratio Category, 2007-2009



	0 - 70	70.1 - 80	80.1 - 95	> 95
2007	15	22	25	40
2008	20	28	28	42
2009	18	25	22	35

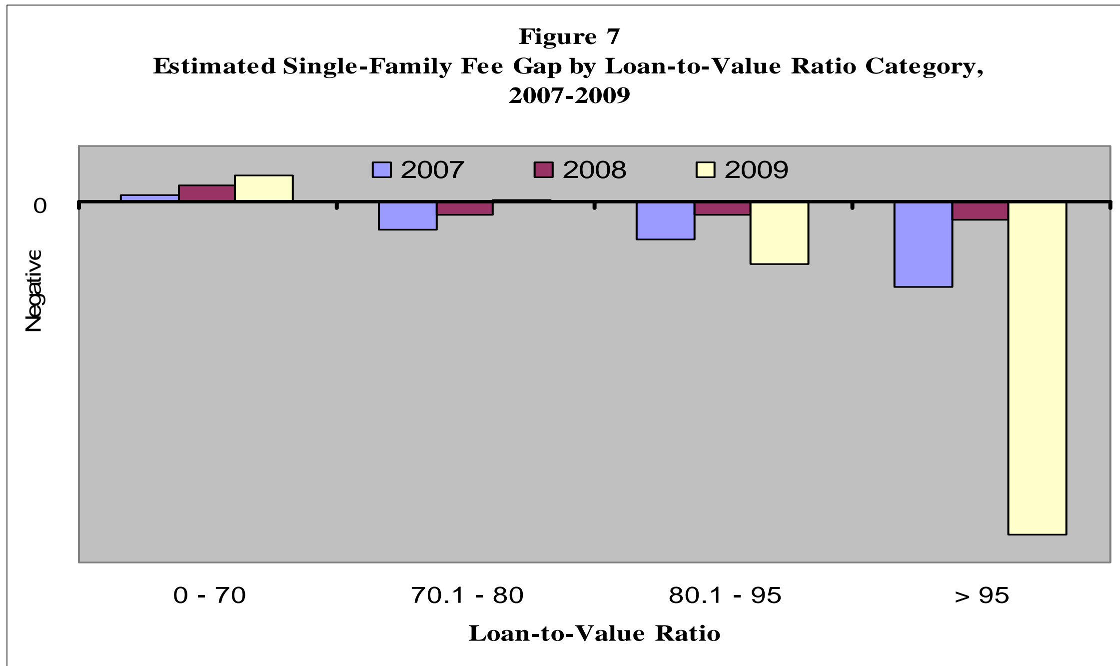
Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

The improvement in the credit profile of acquisitions in 2009 (i.e., better credit scores and less risk layering) tended to reduce model-estimated costs and improved the average fee gaps for loans in each of the two lower LTV-ratio categories (Figure 7). Loans in each of the two higher LTV-ratio categories continued to have average negative fee gaps in 2009, and those gaps were much wider than in 2008. That widening was due to the Enterprises' acquisition of HARP refinance mortgages. HARP activity began in the second quarter of 2009 and steadily increased over the remainder of 2009. For the Enterprises combined over the full year, HARP activity represented 4 percent of 2009 acquisition volume (See Table 8).

Fannie Mae and Freddie Mac supported HARP by limiting the upfront fees they charged for HARP mortgages. As a result, the estimated guarantee fees for those loans were much lower, relative to the fees that Enterprise costing models indicated were required to earn target rates of return, than for non-HARP mortgages. Figure 8 indicates the relative magnitudes of the estimated fee gaps for HARP and non-HARP loans acquired in 2009. Despite the larger estimated negative fee gaps on HARP mortgages, their acquisition was beneficial to the Enterprises, since the loans refinanced existing Enterprise mortgages that had higher or less stable monthly payments, thus reducing the Enterprises' exposure to credit risk, and the guarantee fees charged were generally higher than the fees on the mortgages they refinanced. The estimated fee gaps in Figure 8 do not reflect the overall benefit to the Enterprises of HARP refinances because the estimates for

HARP loans do not factor in the elimination of the loans being replaced, which had more negative estimated fee gaps at the time of replacement.

Figure 7
Estimated Single-Family Fee Gap by Loan-to-Value Ratio Category, 2007-2009

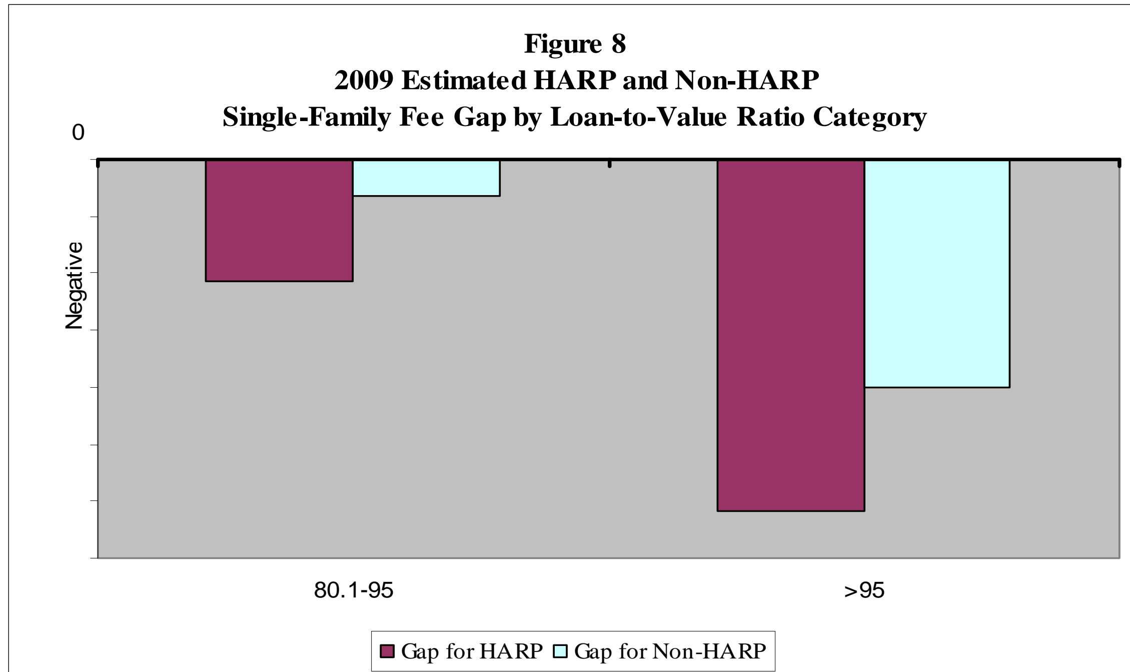


Source: Federal Housing Finance Agency based on Fannie Mae and Freddie Mac data

Table 8
HARP Share of Unpaid Principal Balance of Mortgages Acquired in 2009, by Quarter (Combined Basis)

1Q09	N/A
2Q09	2%
3Q09	7%
4Q09	8%
Full Year	4%

N/A = not applicable
Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac



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

Variation in Fees by Seller Delivery Volume

In recent years, each Enterprise has acquired single-family mortgages from a group of about 1,000 lenders. Table 9 shows the number of sellers that delivered such loans to each Enterprise in 2007, 2008, and 2009.

Table 9
Number of Sellers by Enterprise

	2007	2008	2009
Fannie Mae	986	1,018	1,079
Freddie Mac	923	924	1,057

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

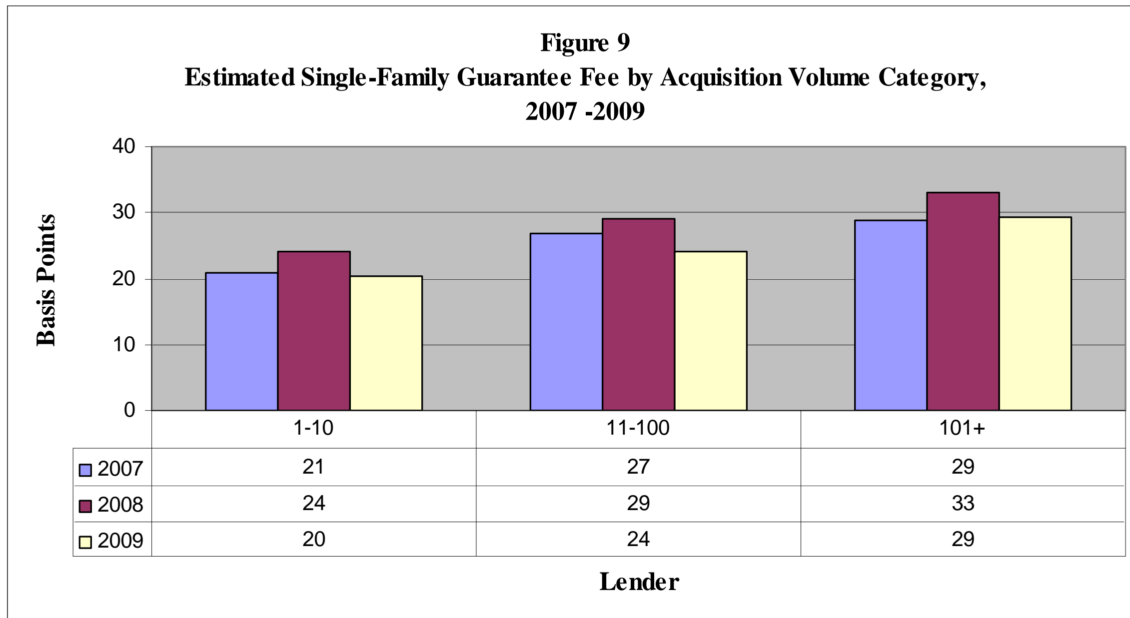
A significant proportion of each Enterprise's single-family acquisitions come from a small group of large sellers. For this study, FHFA ranked sellers by the UPB of the mortgages in the study population that they delivered to each Enterprise in 2008 and 2009 and created three groups for each year: all sellers in each Enterprise's top l0, all sellers in each Enterprise's next 90, and all others. FHFA calculated the average total guarantee fee for each seller group by weighting the amounts for each seller in each group by the UPB for that seller. Mortgages acquired from the top ten sellers at the Enterprises accounted for 74 percent of their combined business volume in 2009, down 6 percentage points from 2008 (see Table 10). Average Enterprise guarantee fees on

single-family mortgages decreased significantly for each seller group in 2009 (see Figure 9).[13]

Table 10
Study Population by Acquisition Volume Category, 2007-2009
(share of total unpaid principal balance)

	1-10	11-100	101+
2007	78%	19%	2%
2008	79%	18%	3%
2009	74%	18%	8%
Change from 2008	-6%	1%	5%

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



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

Smaller sellers primarily choose to sell whole loans, since they typically lack the volume and capacity to swap mortgages for MBS (see Table 11). In contrast, larger sellers primarily swap loans for MBS under seller-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.

[13] 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 sellers by UPB, consistent with Enterprise practice.

Table 11
Whole Loan Business by Acquisition Volume Category, 2007-2009
(share of category unpaid principal balance)

	1-10	11-100	101+
2007	3%	17%	95%
2008	4%	32%	94%
2009	3%	44%	96%
Change from 2008	-1%	13%	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 may also benefit from reduced hedging costs through the avoidance of the interest rate risk inherent in holding MBS. Loans sold for cash are packaged together by the Enterprises with loans from other 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 seller. That factor is relevant because the larger a seller's delivery volume, the more the Enterprise's business with that seller contributes to the liquidity that supports the demand for the Enterprise's outstanding MBS, which benefits all lenders that do business with the Enterprise.

Lenders that deliver smaller volumes of single-family mortgages tend to pay higher guarantee fees on loans of similar credit quality. In addition to MBS liquidity considerations, guarantee fee differences occur for several other reasons. First, the largest sellers have achieved a degree of leverage that can be used to negotiate better terms of business. Second, the administrative costs of doing business with a seller are largely fixed, so the cost per loan of guaranteeing a larger lender's business is lower. The Enterprises' cost models use a fixed allocation of general and administrative expenses across all loans without respect to a seller's volume. Therefore, the models understate the costs of doing business with low-volume sellers.[14] Third, the Enterprises' acquisition policies and standards expose them to counterparty risk, which tends to be higher for small-volume sellers than for typical larger-volume sellers, many of whom are subject to national bank and thrift regulatory standards and extensive financial disclosure requirements and may have access to varied financing and capital sources. Although counterparty risk is considered in seller negotiations, that factor is not captured in the Enterprises' cost models. On average, medium-volume sellers have greater financial strength than small-volume sellers. The financial strength of their counterparties has

[14] The Enterprises use their models to assess expected costs on all mortgages acquired, including whole loans.

become an even more important factor to each Enterprise in the current market environment.

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 both 2008 and 2009, cross-subsidization in single-family guarantee fees charged by the Enterprises was evident across product types, credit score categories, and LTV ratio categories. However, because the share of higher-risk loans acquired was substantially lower in 2009, overall there was less cross-subsidization in Enterprise single-family guarantee fee pricing than in the previous year.

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). The Enterprises maintained their respective pricing adjustments in 2009.

The average estimated cost of guaranteeing single-family mortgages acquired by Fannie Mae and Freddie in 2009, as estimated by internal Enterprise costing models at the time of acquisition, was significantly lower than in 2008, with the decline mainly reflecting the improved acquisition mix and a more favorable house price outlook. Although each Enterprise's costing models assumed declining home prices in 2009, those estimated declines were less significant than had been assumed in 2008.