FEDERAL HOUSING FINANCE AGENCY
Office of the Director

July 30, 2009

Honorable Christopher Dodd
Chairman
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, DC 20510

Honorable Barney Frank
Chairman
Committee on Financial Services
United States House of Representatives
Washington, DC 20515

Honorable Richard C. Shelby
Ranking Minority Member
Committee on Banking, Housing,
and Urban Affairs
United States Senate
Washington, DC 20510

Honorable Spencer Bachus
Ranking Minority Member
Committee on Financial Services
United States House of Representatives
Washington, DC 20515

Dear Chairmen and Ranking Minority Members:

Pursuant to section 1601 of the Housing and Economic Recovery Act of 2008, I am submitting the enclosed report titled "Fannie Mae and Freddie Mac Single-Family Guarantee Fees in 2007 and 2008."

Sincerely,

James B. Lockhart III
Director, Federal Housing Finance Agency
Chairman, FHF Oversight Board

Attachment

FANNIE MAE AND FREDDIE MAC SINGLE-FAMILY GUARANTEE FEES IN 2007 AND 2008

July 2009

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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 timely 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 first prepared by FHFA in fulfillment of Section 1601, covers guarantee fees charged by the Enterprises in 2007 and 2008. 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 in 2007 and 2008. 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. That measure is very dependent on each Enterprise's proprietary costing model 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 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 those years as well as in 2006 and 2007. The Enterprises started to correct that underpricing with guarantee fee increases that they began to announce in the fourth quarter of 2007 and implement 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 introduced 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. On average, that charge is equivalent to an ongoing guarantee fee of about 6 basis points. Also in March, they each introduced varied upfront fees based on loan-to-value (LTV) ratios and credit scores. Later in 2008, the Enterprises updated those upfront fees in response to their views of worsening forecasted house price trends and higher forecasted credit losses.

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 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 79 percent and 89 percent, respectively, of the unpaid principal balance of the single-family mortgages the Enterprises acquired in 2007 and 2008. 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 they expect to earn on guarantees of other loans. In both 2007 and 2008, cross-subsidization in single-family guarantee fees charged by the Enterprises 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.

2. The average estimated cost of guaranteeing single-family mortgages acquired by Fannie Mae and Freddie in 2007 was significantly higher than the average estimated guarantee fee charged by the Enterprises, reflecting the general market underpricing of mortgage credit risk in that year. The pricing increases implemented by the Enterprises in 2008 helped reduce instances where expected receipts were less than expected costs (including a target rate of return on required capital). The Enterprises were able to increase guarantee fees and gain market share in 2008 as private competitors for single-family mortgage credit risk retreated from the market.

3. 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 2007 to 25 basis points in 2008. That change reflects the net effect of a decline in the average ongoing fee and an increase in the average upfront fee.

   - The average ongoing fee declined 3 basis points, from 17 basis points to 14 basis points, mainly due to a change in the mix of single-family mortgages acquired, rather than a reduction in contract prices.

   - The average upfront fee rose 6 basis points, from 5 to 11 basis points, driven mainly by national pricing changes implemented in 2008 to address deteriorating housing market conditions, including the adverse market charge of 25 basis points implemented by both Enterprises in March 2008.

4. The effect on the total guarantee fees charged by the Enterprises of the increases in upfront fees they implemented in 2008 was partially offset by a significant improvement in the acquisition profile relative to 2007. 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.

5. The pricing changes implemented by Fannie Mae and Freddie Mac in 2008 increased their average guarantee fees for 30-year and 15-year fixed-rate loans and for adjustable-rate mortgages (ARMs) considered as a group. At the same time, the changes in the acquisition profile tended to reduce average expected costs. The net effect was to improve the estimated fee gaps for all three product categories.

- At the time of loan acquisition, the Enterprises did not expect, on average, to earn their target rates of return on guarantees of 30-year mortgages in either 2007 or 2008, although Fannie Mae almost closed its negative fee gap in 2008. Fannie Mae expected to earn more than its target rate of return on 15-year fixed-rate loans in both years and on ARMs in 2008. Freddie Mac expected to earn more than its target rate of return on 15-year fixed-rate loans and ARMs in both years, but its expected above-target returns on ARMs declined in 2008.

- The markets for 15-year fixed-rate mortgages and ARMs are smaller and less competitive than the market for 30-year fixed-rate mortgages. In addition, the lower interest rates on 15-year and adjustable-rate loans may make higher fees (relative to model-estimated costs) less noticeable.

6. Single-family guarantee fees charged by the Enterprises increased across the credit score spectrum in 2008. Changes in the Enterprises' proprietary costing models implemented during the year resulted in much larger differences in the estimated costs of guaranteeing low-credit score mortgages relative to high-score loans, reflecting the greater mispricing of credit risk for low-score mortgages in 2007. Changes in upfront fees implemented during the year reflected those model changes. As a result, the Enterprises' guarantee fees increased more on an absolute basis for loans with lower credit scores. Despite the fee increases, in 2008, as in 2007, 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 analyzed by FHFA.

7. Average guarantee fees increased for every LTV ratio category in 2008, reflecting changes in the acquisition profile and the Enterprises' pricing changes beginning in March. Fees increased the most for mortgages that had LTV ratios between 70.1 percent and 80 percent. Those loans do not have the additional loss protection afforded by mortgage insurance or other credit enhancement. Despite the increased fees and tighter underwriting in 2008, the Enterprises, on average, expected to earn less than their target rates of return on loans in LTV ratio categories above 70 percent in both years. The Enterprises also expected loans in the 0 to 70 percent LTV ratio category to provide above-target returns in both years.

8. A significant proportion of the single-family mortgages acquired by each Enterprise come from a small group of large sellers. Loans acquired from the top ten sellers at both Enterprises accounted for 78 percent of their combined business volume in 2007 and 2008.

9. 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 medium-volume sellers and to be highest for the largest-volume sellers. 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)[1] 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 first prepared by FHFA in fulfillment of Section 1601, covers guarantee fees charged by the Enterprises in 2007 and 2008. 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.[2] When sellers receive MBS in a swap transaction, they may

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

[2] 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 timely 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.[3] Lender guarantee 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 2007 and 2008

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 2007 and 2008. 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.

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[3] 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, 2007 and 2008
($ in millions)

Fannie Mae	**2007**	**2008**	**Freddie Mac[1]**	**2007**	**2008**
Revenue			**Revenue**		
Guarantee Fee Income	$5,816	$8,390	Guarantee Fee Income	$2,889	$3,729
Trust Management Income[2]	553	256	Interest Income[2]	703	209
	6,369	8,646		3,592	3,938
Expenses			**Expenses**		
Credit Related Expenses[3]	5,003	29,725	Credit Related Expenses[3]	3,219	17,754
Administrative Expenses[4]	1,478	1,127	Administrative Expenses	806	812
	6,481	30,852		4,025	18,566
Subtotal	(112)	(22,206)	**Subtotal**	(433)	(14,628)
Other Performance Data			**Other Performance Data**		
Average Book of Business[5]	$2,406,422	$2,715,606	Average Securitized Portfolio	$1,584,000	$1,771,000
Average Effective Guarantee Fee	24.2 bp	30.9 bp	Average Effective Guarantee Fee	18.0 bp	20.7 bp

[1] As permitted under 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' MBS, a higher level of float income earned by Freddie Mac on ARMs, 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 for year ended December 31, 2008 and Freddie Mac SEC Form 10-K for year ended December 31, 2008

Each Enterprise's guarantee fee income for the single-family guarantee business rose in 2008 as a result of increases in its average outstanding guarantees and 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 increase in the average guarantee fee rate reflects pricing changes implemented in 2008 and accelerated recognition of deferred amounts as interest rates fell significantly during that year. The decline in trust management income (Fannie Mae) or interest income (Freddie Mac) 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 2008 reflects increases in loan loss provisions related to higher delinquencies and defaults and greater average loss severities.

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, 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 expected 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 (PVM) of the mortgages estimated by the Enterprise at the time of acquisition.[4] 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.

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 Enterprise estimates based on the models in place at the time of loan acquisition and represent the Enterprises' 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.

Estimated Cost

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 ratio, borrower

[4] An upfront fee is quoted in price, whereas an ongoing fee is quoted in yield. The Enterprises estimate a PVM that is used to convert the dollar price to a yield equivalent. For example, if the PVM for a mortgage is 4, then an upfront fee of one percent of the loan amount is equivalent to 25 basis points in yield. The PVM of a mortgage increases with its expected life, which is a function of estimated prepayments.

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 estimated revenue and costs of guaranteeing the loan under stressful economic conditions.

Each Enterprise sets its own target rate of return on capital based in part on a spread over a risk-free rate. 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.[5]

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 cost 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,

[5] 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 6 percent, then the total estimated costs of guaranteeing those loans would include risk premia of 6 basis points and 18 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;
- Origination channel; and
- Borrower debt-to-income ratio.

Competitive Environment

Through the single-family credit guarantee business, the Enterprises compete directly with each other as well as directly and indirectly 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.

<u>Other Factors</u>

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.

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 single-family mortgage credit risk significantly in those years, 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, fulfill their public mission, or to retain a seller’s business. They also 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 mortgages 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 loans, and the Enterprise has the opportunity to review this defined set of loans for eligibility and pricing prior to delivery. Guarantee fees on bulk acquisitions are negotiated on an individual transaction basis. The bulk channel was typically used for riskier products in 2007 and 2008, such as Alt-A and negative amortization loans.

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) or specific mortgage products (i.e., Fannie Mae's MyCommunityMortgage or Freddie Mac's Home Possible programs, which support lending that finances affordable housing).

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, both Enterprises announced an expansion of national pricing that they 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. Assuming a typical PVM of 4, that charge is equivalent to an ongoing fee of about 6 basis points. Also in March, 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 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.

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.

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 2007 AND 2008

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. This section uses data on single-family mortgages delivered in 2007 and 2008 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. 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 2007 and 2008, the data exclusions, and the UPB and number of loans in the study population for those years.

Table 2
Study Population, 2007 and 2008

	2007				**2008**			
	Dollars in Millions	**Percent**	**Number of Loans**	**Percent**	**Dollars in Millions**	**Percent**	**Number of Loans**	**Percent**
Total Single Family Purchases	$1,117,513	100%	5,809,855	100%	$938,230	100%	4,559,068	100%
Excluded All Bulk	$210,659	19%	1,134,050	20%	$86,524	9%	484,706	11%
Excluded Some Flow	$19,135	2%	121,859	2%	$21,298	2%	139,062	3%
Study Population	$887,719	79%	4,553,946	78%	$830,408	89%	3,935,300	86%

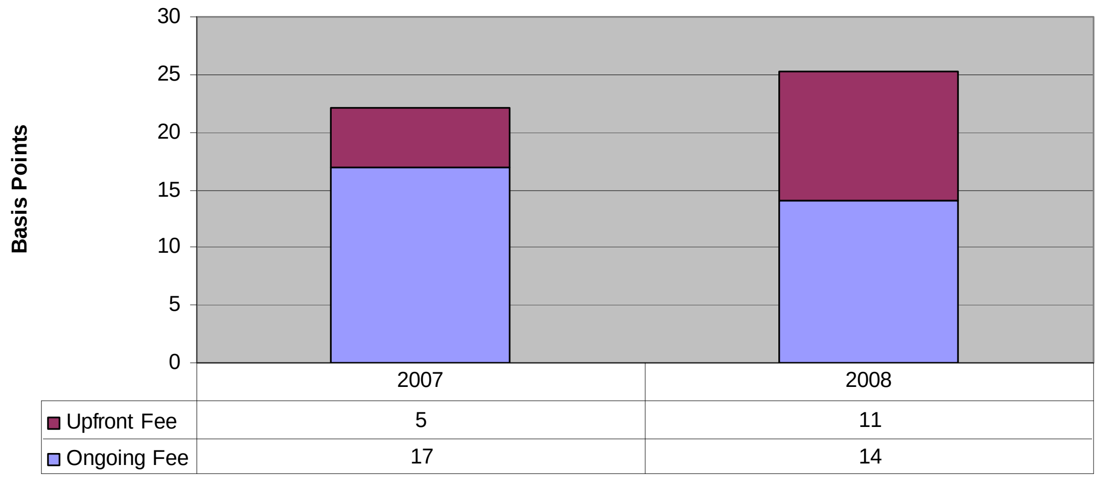
Source: Federal Housing Finance Agency based on data from Fannie Mae and Freddie Mac

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 and 2008. 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 increased from 22 basis points in 2007 to 25 basis points in 2008. That reflects the net effect of a decline in the average ongoing fee and an increase in the average upfront fee.

The average ongoing fee declined 3 basis points, from 17 basis points to 14 basis points, mainly due to a change in the acquisition mix, rather than a reduction in contract prices. The average upfront fee rose 6 basis points, from 5 to 11 basis points, driven mainly by national pricing changes implemented in 2008 to address current housing market conditions, including the adverse market charge of 25 basis points implemented by both Enterprises in March 2008. Other new upfront fees and increases in existing upfront fees contributed to the higher average upfront fee as well. Those other national price changes were concentrated in loan types with high-risk features such as cash-out refinances, high LTV ratios, low credit scores and combinations of those or other features. However, the effect of those changes was partially 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). Some loans acquired in 2008 received a 25 basis point fee credit due to superior credit quality, which fully offset the adverse market charge.

Figure 1
Average Estimated Single-Family Guarantee Fees, 2007 and 2008



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

The changes in national guarantee fee pricing 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 2008 to reflect heightened credit risk. Among other changes, those updates revised the model assumptions about house price appreciation. 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 prices 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.

As noted, the impact of the increase in estimated upfront fees in 2008 was partially offset by a significant improvement in the acquisition profile relative to 2007. Table 3 shows the share of each year's acquisitions with key risk characteristics that affect expected default losses. In 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 also fell significantly in 2008. Interest-only loans, mortgages acquired under Enterprise affordable housing programs, such as MyCommunityMortgage and Home Possible, and loans with subordinate financing had the largest drops in their shares of total acquisitions. Further, in 2008 the Enterprises began acquiring jumbo conforming loans, which entail above-average credit risk.

Table 3
Acquisition Profile of Study Population, 2007 and 2008
(share of total unpaid principal balance)

	2007	2008	Change
Product Type			
Fixed-Rate 30-year Mortgages	83%	80%	-4%
Fixed-Rate 15-year Mortgages	5	10	5
Other Fixed-Rate Mortgages	3	3	0
Adjustable-Rate Mortgages	8	7	-1
	100	100	
Credit Score			
>=720	55	68	13
660-719	28	24	-4
<660	17	8	-8
	100	100	
Loan-to-Value Ratio			
0 - 70	31	38	7
70.1 - 80	45	40	-5
80.1 - 95	14	18	4
> 95	10	3	-6
	100	100	
Risk Layering			
At Least One Type of Layering	68	58	-10
No Risk Layering	32	42	10
	100	100	
Type of Risk Layering [(1)]			
Interest-Only Mortgages	13	6	-7
Affordable Housing Programs	10	3	-7
Loans with Subordinate Financing	18	12	-6
Refinances with Cash-Out	31	30	-1
Reduced Documentation Loans	1	1	0
Condominiums and Cooperatives	11	11	0
Multiple Unit Properties	2	3	1
Investor Loans	4	6	1
Jumbo Conforming Loans	0	2	2

[(1)] Some loans have multiple forms of risk layering.

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

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 in those years 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 measured indirectly by 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. 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.

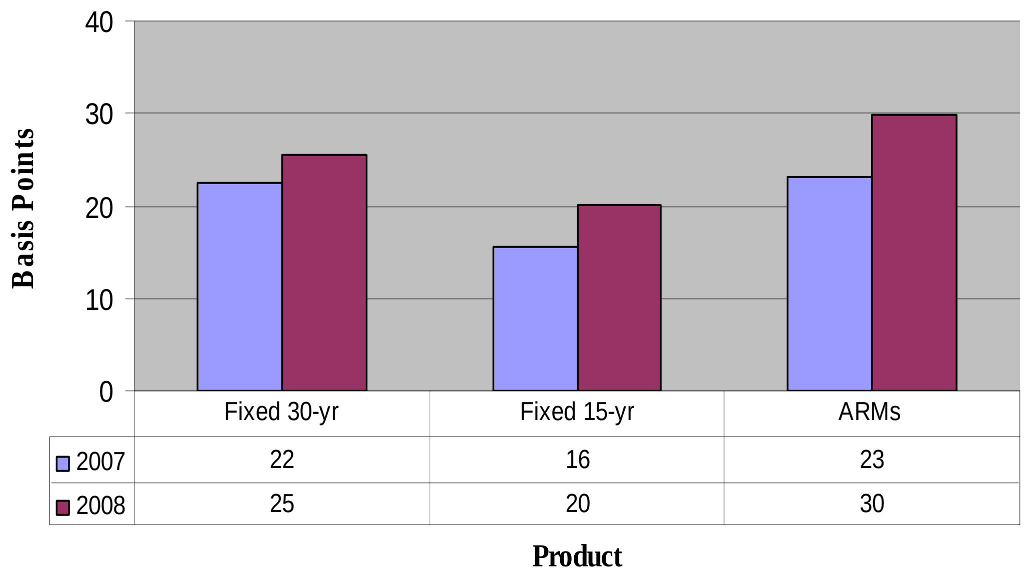
As noted, one of the key assumptions of each Enterprise's costing model is its target rate of return on required capital. Fannie Mae lowered its target rate of return in 2008, whereas Freddie Mac increased its target rate. Although the Enterprises' target rates of return differed greatly in 2007, the changes in 2008 made them more similar. The reduction in Fannie Mae's target rate in 2008 tended to reduce its estimates of the cost of mortgage guarantees, whereas the increase in Freddie Mac's target rate tended to increase its cost estimates. Fannie Mae's cost estimates decreased for every product type, credit score, and LTV ratio category, except for loans with credit scores less than 660, where its estimated cost increased. In contrast, Freddie Mac's cost estimates increased for every product type, credit score, and LTV ratio category. 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 2007 to 2008, 15-year fixed-rate loans doubled as a share of total acquisitions from 5 percent to 10 percent, 30-year fixed-rate mortgages and adjustable-rate mortgages (ARMs) declined, and other fixed-rate loans remained the same. Historically, 15-year fixed-rate loans have had the lowest rate of credit losses among those product types.

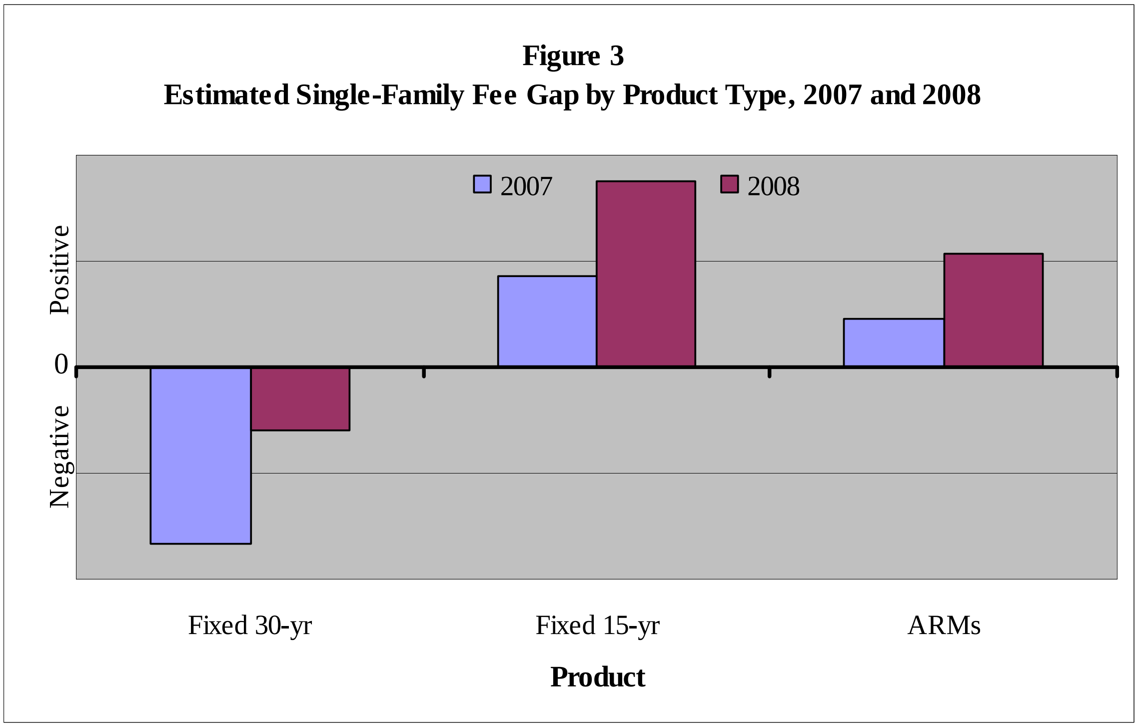
The pricing changes implemented by the Enterprises in 2008 increased average guarantee fees for all three product types (see Figure 2).[6] At the same time, the changes in the acquisition profile tended to reduce average expected costs. The net effect was to improve estimated average fee gaps for all three product categories (see Figure 3). Thirty-year mortgages had a negative gap on average in both years, although Fannie Mae nearly closed its negative gap in 2008. Fannie Mae expected to earn more than its target rate of return on 15-year fixed-rate loans in both years and on ARMs in 2008. Freddie Mac expected to earn more than its target rate of return on 15-year fixed-rate loans and ARMs in both years, but its expected above-target returns on ARMs declined in 2008. The markets for those products are smaller and less competitive than the market for 30-year fixed-rate loans. In addition, the lower interest rates on 15-year mortgages and ARMs may make the higher fees (relative to model-estimated costs) less noticeable.

Figure 2
Estimated Single-Family Guarantee Fee by Product Type, 2007 and 2008



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

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



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 13 percent in 2008 (see Table 4). The shares of the lower credit score categories declined, with the steepest drop among loans to borrowers with scores below 660, reflecting the tightening of underwriting standards in the mortgage market.

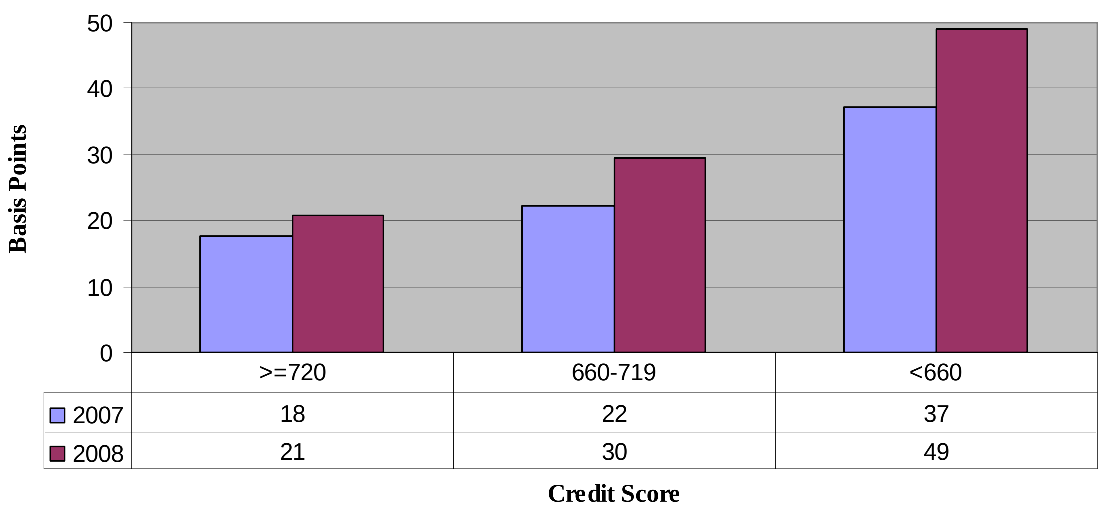
Table 4
Study Population by Credit Score Category, 2007 and 2008
(share of total unpaid principal balance)

	>=720	**660-719**	**<660**
2007	55%	28%	17%
2008	68%	24%	8%
Change	13%	-4%	-8%

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

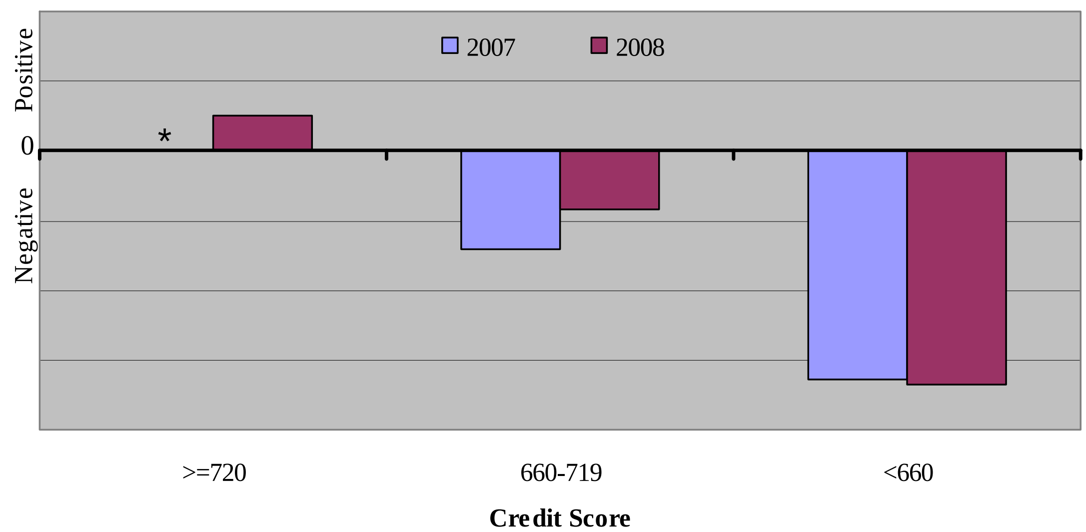
Single-family guarantee fees charged by Fannie Mae and Freddie Mac increased across the credit score spectrum in 2008. As a borrower's credit score decreases, the cost of guaranteeing a single-family mortgage increases. The Enterprises' views of cost became more sensitive to that risk dimension in 2008. Model changes implemented during the year resulted in much larger differences in the estimated costs of guaranteeing low-credit score mortgages relative to high-score loans, reflecting the greater mispricing of credit risk for the former in 2007. Changes in upfront fees implemented during the year reflected those model changes. As a result, the Enterprises' total guarantee fees increased more on an absolute basis for loans with lower credit scores (see Figure 4). Despite the fee increases, in 2008 estimated costs continued to exceed total guarantee fees on average for loans in the credit score categories below 720 (see Figure 5).

Figure 4
Estimated Single-Family Guarantee Fee by Credit Score Category, 2007 and 2008



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 and 2008



* 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 both 2007 and 2008, 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, but had the lowest acquisition volumes in each year, as shown in Table 4.

<u>Loan-to-Value Ratio</u>

The share of single-family mortgages acquired by the Enterprises that had LTV ratios equal to or less than 70 percent increased in 2008 as underwriting standards and credit availability tightened (see Table 5). Restrictions on cash-out refinances played a role in that shift. Loans with LTV ratios above 95 percent declined as a result of eligibility and underwriting changes, increased competition from FHA, and the reduced availability of private mortgage insurance (MI). Loans with an LTV ratio of 80 percent were constrained by a lack of subordinate financing—closed-end second mortgages and home equity lines of credit (HELOCs). More borrowers had used subordinate financing in 2007 to supplement down payments of less than 20 percent in order to avoid the need to purchase MI. The charters require MI on loans the Enterprise acquire with LTV ratios of more than 80 percent if the lender does not use another acceptable form of credit enhancement. FHA insured a larger share of single-family originations with LTV ratios above 80 percent in 2008. The loan category with LTV ratios from 70.1 percent to 80 percent continued to have the largest share of total acquisitions, followed closely by the less than 70 percent category.

Table 5
Study Population by Loan-to-Value Ratio Category, 2007 and 2008

(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%
Change	7%	-5%	4%	-6%

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 6 shows the standard MI coverage amounts applicable to most 30-year mortgages and the degree of Enterprise protection against losses, at the time of loan origination, for each coverage amount shown.[7] 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, in contrast to the levels shown in Table 6, the Enterprises have lower MI coverage requirements for mortgages acquired under programs that support lending for affordable housing, and those lower requirements bring the protection closer to 20 percent of the house's value. A high portion of the loans in the greater than 95 percent LTV ratio category are made under such programs.

[7] 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).

Table 6
Mortgage Insurance Coverage Levels

30-Year Loan for $100,000 Home

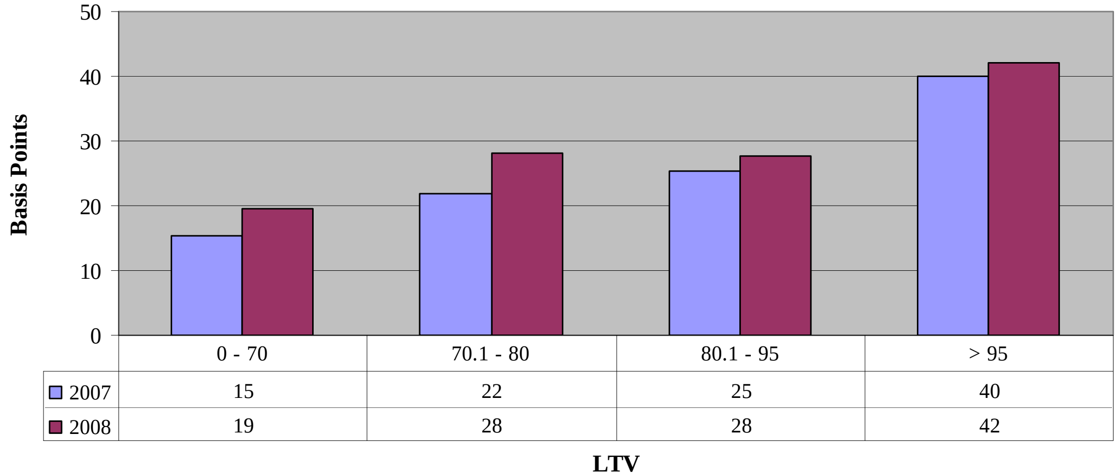
LTV Ratio	Loan Amount	MI Coverage	Protection at Origination
80%	$80,000	0%	$20,000
85%	$85,000	12%	$25,200
90%	$90,000	25%	$32,500
95%	$95,000	30%	$33,500
97%	$97,000	35%	$36,950

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

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 does not require MI coverage or other credit enhancement.

Average guarantee fees increased for every LTV ratio category in 2008, reflecting changes in the acquisition profile of mortgages in each category and the Enterprises' pricing changes beginning in March (see Figure 6). Fees increased the most for mortgages that had LTV ratios between 70.1 percent and 80 percent. Whereas those loans had a lower probability of default than mortgages in the two higher LTV-ratio categories, some of the loans in those categories had greater loss protection at origination due to the additional protection afforded by MI or other credit enhancement. The Enterprises' greater exposure to the falling house price environment in 2008 tended to increase cost more on mortgages with lower protection levels. The improvement in the acquisition profile (i.e., better credit scores and less risk layering) tended to reduce model-estimated costs. However, despite the increased fees and tighter underwriting, loans in each of the LTV ratio categories above 70 percent continued to have average negative fee gaps (see Figure 7).

Figure 6
Estimated Single-Family Guarantee Fee by Loan-to-Value Ratio Category, 2007 and 2008



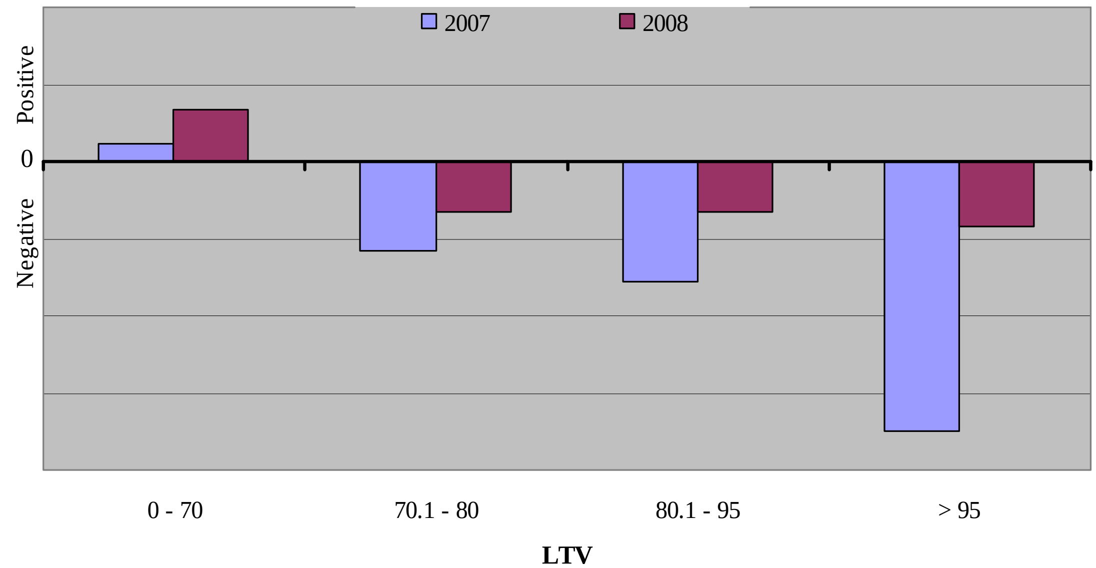
	0 - 70	70.1 - 80	80.1 - 95	> 95
2007	15	22	25	40
2008	19	28	28	42

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

Mortgages with LTV ratios in excess of 95 percent have a significantly higher likelihood of default and level of expected credit losses. As shown in Figure 6, the Enterprises charge higher guarantee fees on those loans. At times, as in 2007, they have charged guarantee fees significantly below expected cost for many of those loans (see Figure 7). Some of these mortgages went to borrowers meeting specified income limits or geographical requirements, and, thus, the units counted toward regulatory housing goal requirements. 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 …."[8] The foregoing does not imply that the Enterprises should engage in unprofitable activities. Pricing and eligibility changes implemented in 2008 improved the average estimated fee gap for those loans, as well as for mortgages in all the other LTV ratio categories.

[8] 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.

Figure 7
Estimated Single-Family Fee Gap by Loan-to-Value Ratio Category, 2007 and 2008



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 7 shows the number of sellers that delivered such loans to each Enterprise in 2007 and 2008.

Table 7
Number of Sellers by Enterprise

	2007	2008
Fannie Mae	986	1,018
Freddie Mac	923	930

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

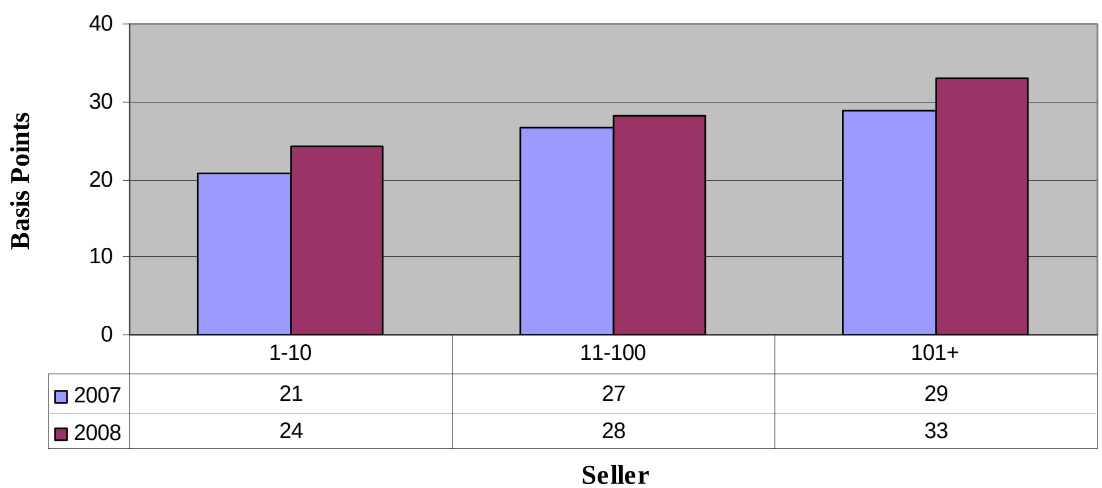
A significant proportion of each Enterprise's single-family acquisitions come from a small group of large sellers. For this study, FHFA ranked sellers by the UPB of the mortgages in the study population that they delivered to each Enterprise in 2007 and 2008 and created three groups for each year: all 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 both Enterprises accounted for 78 percent of their combined business volume in both years (see Table 8). Average Enterprise guarantee fees on single-family mortgages increased modestly for each seller group in 2008 (see Figure 8).[9]

Table 8
Study Population by Seller Size Category, 2007 and 2008
(share of total unpaid principal balance)

	1-10	11-100	101+
2007	78%	19%	2%
2008	78%	19%	3%
Change	-1%	0%	1%

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

Figure 8
Estimated Single-Family Guarantee Fee by Seller Size Category, 2007 and 2008



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 9). In contrast, larger sellers primarily swap loans for MBS under negotiated seller guarantee fee contracts. 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.

9 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 9
Whole Loan Business by Seller Size Category, 2007 and 2008
(share of category unpaid principal balance)

	1-10	11-100	101+
2007	3%	17%	95%
2008	4%	29%	94%

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, the Enterprises give 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 per loan cost 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.[10] Third, the Enterprises' acquisition policies and standards expose them to counterparty risk, which tends to be higher for small-volume sellers than for medium-volume sellers and to be highest for the largest-volume sellers. 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 become an even more important factor to the Enterprises in the current market environment.

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

CONCLUSION

Although Fannie Mae and Freddie Mac consider model-derived estimates of cost in determining the single-family guarantee fees they charge, their pricing often subsidizes their guarantees on some mortgages using higher returns they expect to earn on guarantees of other loans. In both 2007 and 2008, cross-subsidization in single-family guarantee fees charged by the Enterprises 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.

Fannie Mae and Freddie Mac 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 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 average estimated cost of guaranteeing single-family mortgages acquired by Fannie Mae and Freddie in 2007, as estimated by internal Enterprise costing models at the time of acquisition, was significantly higher than the average estimated guarantee fee charged by the Enterprises, reflecting the general market underpricing of mortgage credit risk in that year. The Enterprises were able to increase guarantee fees and gain market share in 2008 as private competitors for single-family mortgage credit risk retreated from the market.