

**Finance and Economics Discussion Series
Divisions of Research & Statistics and Monetary Affairs
Federal Reserve Board, Washington, D.C.**

The Incentives of Mortgage Servicers: Myths and Realities

**Larry Cordell, Karen Dynan, Andreas Lehnert, Nellie Liang, and
Eileen Mauskopf**

2008-46

NOTE: Staff working papers in the Finance and Economics Discussion Series (FEDS) are preliminary materials circulated to stimulate discussion and critical comment. The analysis and conclusions set forth are those of the authors and do not indicate concurrence by other members of the research staff or the Board of Governors. References in publications to the Finance and Economics Discussion Series (other than acknowledgement) should be cleared with the author(s) to protect the tentative character of these papers.

The Incentives of Mortgage Servicers: Myths and Realities

by

Larry Cordell, Karen Dynan, Andreas Lehnert,
Nellie Liang, and Eileen Mauskopf

September 8, 2008

Cordell is from the Federal Reserve Bank of Philadelphia. Dynan, Lehnert, Liang, and Mauskopf are from the Board of Governors of the Federal Reserve System. We thank David Buchholz, Richard Buttner, Philip Comeau, Amy Crews Cutts, Kieran Fallon, Jack Guttentag, Madeline Henry, Paul Mondor, Michael Palumbo, Karen Pence, Edward Prescott, Peter Sack, David Wilcox, staff at Neighborworks America, and many market participants from servicers, investors, Freddie Mac, mortgage insurance companies, rating agencies, and legal and tax counsel for helpful discussions and comments. We are also grateful to Erik Hembre and Christina Pinkston for excellent research assistance. The views expressed in this paper are those of the authors and do not necessarily represent the views of the Federal Reserve Board, the Federal Reserve Bank of Philadelphia, or their staffs. Contact author: Nellie Liang at JNellie.Liang@frb.gov.

Abstract

As foreclosure initiations have soared over the past couple of years, many have questioned whether mortgage servicers have the right incentives to work out troubled subprime mortgages so that borrowers can avoid foreclosure and remain in their homes. Some critics claim that because servicers, unlike investors, do not bear the losses associated with foreclosure, they have little incentive to modify troubled loans by reducing interest rates or principal, or by extending the term. Our analysis suggests that while servicers have substantially improved borrower outreach and increased loss mitigation efforts, some foreclosures still occur where both borrower and investor would benefit if such an outcome were avoided. We discuss servicers' incentives and the obstacles to working out delinquent mortgages. We find that loss mitigation is costly for servicers, in large part because servicers currently lack adequate staff and technology; unfortunately, servicers have few financial incentives to expand capacity. Two additional factors appear to be damping workouts of nonprime loans, the group that has seen the largest increase in delinquencies. First, affordable solutions are more difficult to achieve for borrowers with these loans than for those with prime mortgages. Second, these loans are generally funded by private-label mortgage backed securities, for which investors provide little or no guidance to servicers about what modifications are appropriate. More generally, investors are wary that modifications might turn out to be unsuccessful, thus delaying and increasing ultimate losses. Given the significant deadweight losses incorporated in recent quarters' loss rates of 50 percent or more, we present options for further improving servicer performance. We discuss supporting further industry efforts to expand borrower outreach and establish servicing guidelines, educating investors, paying servicers fees for appropriate loan workouts, and improving measures of servicer performance.

The Incentives of Mortgage Servicing: Myths and Realities

Summary

1. Foreclosures, loss mitigation activity, and losses from foreclosure

Servicers have been increasing the number of workouts of delinquent or probable delinquent mortgages, but delinquencies and foreclosure starts have continued to rise rapidly. Servicers are responding to pressures from the Congress, regulators, and consumer groups and, as a result, have improved outreach and loss mitigation practices. They have increased modifications, which involve permanent changes to the mortgage contract, and have relied relatively less on repayment plans, which allow borrowers to make up missed payments in installments. Still, borrowers and housing counselors report dissatisfaction with response times and the relief offered. The available evidence suggests that some avoidable foreclosures are being initiated because of inadequate loss-mitigation servicing capacity and various practices of servicers. Given loss rates to investors from foreclosed subprime mortgages of 50 percent or more, both investors and borrowers could be better off with more effective loss mitigation.

2. Mortgage servicer revenues and costs

Consolidation in the servicing industry has created substantial economies of scale in processing payments and managing collections for performing loans. But such economies of scale are not present in loss mitigation, which generally requires more labor-intensive processes, such as assessing whether a financial setback is temporary or permanent and, in turn, determining the appropriate loss-mitigation option. Servicers of loans in private-label mortgage-backed securities (MBS) do not have strong financial incentives to invest in additional staff or technology for loss mitigation because investor guidance is limited, the prospect for future subprime servicing volume is dim, and expected recidivism rates on home retention workouts are high. Moreover, the costs of loss mitigation will be *in addition to* expenses incurred in any parts of a foreclosure procedure executed, because trusts generally require that foreclosure options be pursued even if loss mitigation efforts have been initiated.

3. Servicers' duties and obligations to investors

Rules are in place to protect investors' interests when a loan becomes delinquent. Servicers' duties and obligations to the investors in private-label MBS are governed by Pooling and Servicing Agreements (PSAs). These PSAs vary widely, but they generally state that the servicer is obligated to maximize the interests of the investors or certificate holders, often implemented by comparing the net present value (NPV) of a loss mitigation option to the NPV of foreclosure. However, servicers' incentives are not always aligned completely with those of the investors, and they have considerable discretion in interpreting PSA language. The housing government-sponsored enterprises (GSEs) recognize the conflict and provide explicit guidance for how servicers should deal with delinquent loans in GSE pools. The PSAs for private-label MBS do not provide much specific guidance, leaving servicers to determine what loss mitigation steps are most appropriate. In addition, some investors fear that modifications will not be

successful and will ultimately cost them more by delaying a timely resolution of losses at a time when house prices continue to fall. Indeed, the investors with whom we spoke did not widely convey concern that servicers are relying too heavily on foreclosures relative to loan modifications.

4. Loss mitigation of loans in GSE pools

Fannie Mae and Freddie Mac (F/F) guarantee the timely payment of principal and interest on mortgages in their pools. Each serves as the Master Servicer for its securities and thus has the authority to represent the interest of the pools to servicers as well as maintain significant influence over the actions taken by individual servicers in working out delinquent loans. F/F oversee the entire default management process, from identification to resolution of delinquent mortgages. They provide automated tools to their servicers to aid in loan workouts, have rules for delegating authority to servicers, and generally offer a single point of contact for approving exceptions. They offer reputational and financial incentives to servicers in order to encourage more efficient resolution of delinquent loans. Their guidelines are published in their Seller/Servicer Guides that are referenced in their securities. They believe that their actions to encourage appropriate modifications have helped to keep recidivism rates relatively low.

5. Loss mitigation of loans in private-label MBS pools

Several aspects of private pools hinder successful loss mitigation. In addition to the vague PSA workout guidelines noted earlier, investors do not offer monetary incentives, and servicers see little reputational gain from performing well to attract future business because the prospects for servicing a significant volume of subprime mortgages in the future are dim. Large firms that service both GSE and private-label MBS pools may respond to the greater clarity and incentives from F/F by devoting their scarce resources to the loans in GSE pools at the expense of loans in private-label pools. Servicers also worry about legal liability from dissatisfied investors, especially in cases where a modification benefits some MBS tranches at the expense of others. However, tax and accounting issues surrounding workouts of loans in these pools have been clarified over the past year and no longer present a major hurdle. (For loans held in portfolio, regulatory accounting for troubled debt restructurings remain a potential problem).

6. Problems when there are other stakeholders—junior liens and mortgage insurers

A major impediment to refinancing and loss mitigation is the presence of junior liens, which appear to be more common among subprime than among prime mortgages. Senior lien holders generally require the holders of junior liens to affirmatively agree to substantive changes to mortgage terms. But junior lien holders are slow or reluctant to agree to changes before extracting the largest monetary concession they can because the value of their lien is often worthless in a foreclosure in today's depressed housing market. Private mortgage insurers do not appear to be an impediment for modifications, but could be for executing short sales.

7. Policy options to improve servicer performance

Loss severity rates on subprime mortgage foreclosures are steep: all told, 50 percent or more of the outstanding mortgage balance has been lost in recent foreclosures. The

foreclosure process itself involves significant liquidation expenses, and foreclosed properties are typically sold at a substantial discount. These costs constitute a deadweight loss that does not benefit the borrower or the investor, but instead suggests that both could be better off with loss mitigation. Some servicers do a much better job at minimizing loss rates given default than others—Moody’s (2001) reports that the difference in realized loss levels at good versus bad servicers can be as high as 20 percent. Options to improve servicer performance include supporting industry efforts to continue to improve borrower outreach and develop servicing guidelines, educating investors about loss mitigation, paying fees to servicers for completion of appropriate loss mitigation alternatives, and encouraging the development and use of an effective set of quantitative metrics of servicer performance. Servicers can be evaluated on preventing default, maximizing recoveries, and preventing re-defaults on home retention workouts. Legislative proposals to extend a safe harbor or impose blanket foreclosure moratoriums have some disadvantages.

1. Foreclosures, loss mitigation activity, and losses from foreclosure

Servicers have been increasing the number of workouts of delinquent or probable delinquent mortgages, but delinquencies and foreclosure starts have continued to rise rapidly. Servicers are responding to pressures from the Congress, regulators, and consumer groups and, as a result, have improved outreach and loss mitigation practices. They have increased modifications, which involve permanent changes to the mortgage contract, and have relied relatively less on repayment plans, which allow borrowers to make up missed payments over time. Still, borrowers and housing counselors report dissatisfaction with response times and the relief offered. The available evidence suggests that some avoidable foreclosures are being initiated because of inadequate loss-mitigation servicing capacity and various practices of servicers. Given loss rates to investors from foreclosed subprime mortgages of 50 percent or more, both investors and borrowers could be better off with more effective loss mitigation.

Foreclosures

The number of foreclosure starts rose sharply in 2006 and 2007 and continued to rise in the first half of 2008 (Table 1).

- Subprime mortgages accounted for well more than half of foreclosure starts, despite representing only 14 percent of all first-lien mortgages.
- Foreclosures in inventory reached 1.52 million in the first quarter of this year, more than double the levels from 2004 to 2006.

Foreclosure starts are on pace to rise by 1 million to 2.5 million this year. We expect that foreclosure starts will fall a bit next year, but remain above 2 million.

- To a large extent, this pattern is driven by foreclosures expected to be initiated on subprime mortgages, which are likely to peak at 1.3 million this year as the mortgages originated in 2006—with especially lax underwriting—work their way through.

It appears that foreclosure starts have led to homeowners losing their homes about half of the time in the past. Many homeowners were able to avoid eviction by arranging a repayment plan with the servicer or lender or otherwise curing their delinquency on their own.

- Cutts and Green (2005) find that for conventional, conforming prime mortgages originated before 2004, 61 percent that entered 120 plus days late status were cured, suggesting that up to 39 percent could have ended in the loss of home. But this figure likely understates the overall share, as cure rates for nonprime loans are presumably lower.
- Moreover, in the current episode, the weak housing market and large numbers of foreclosure starts make it likely that a higher overall share of homeowners will lose their homes unless loss mitigation efforts are increased.

Table 1. Foreclosures Started and in Inventory, for Subprime and Prime Mortgages
(Thousands of loans)

Date	Foreclosures started during period			Foreclosure inventory at end of period		
	Subprime	Prime	Total	Subprime	Prime	Total
2004	362	307	928	254	197	620
2005	402	293	883	243	173	539
2006	540	317	1016	342	211	654
2007	852	553	1558	603	411	1119
2007:Q1	175	110	323	374	229	701
2007:Q2	188	105	323	424	248	767
2007:Q3	232	154	429	500	337	930
2007:Q4	259	184	483	603	411	1119
2008:Q1	275	236	555	724	524	1358
2008:Q2	288	262	598	798	611	1523

Notes. Data are calculated based on foreclosure rates from the Mortgage Bankers Association National Delinquency Survey and staff estimates of the number of loans serviced. Not seasonally adjusted. Total includes FHA, VA, and loans not elsewhere classified.

Loss mitigation activity

Loss mitigation may or may not result in home retention. The term “workouts” often refers to options that help the borrower stay in their home, such as temporary forbearance, repayment plans, and loan modifications, where modifications involve a permanent change to the mortgage contract. Loss mitigation techniques that do not involve home retention include “short sales” (a sale that the lender agrees to for less than the full amount of the unpaid principal) and “deeds in lieu” of foreclosure (the voluntary transfer of the property title from the homeowner to the lender).

The number of subprime and prime mortgage home retention workouts (defined as the sum of temporary forbearance cases, repayment plans, and modifications) totaled 1.5 million in 2007 according to surveys from the Hope Now Alliance, of which nearly 1 million were for subprime mortgages.¹

- Workouts of subprime mortgages rose notably through the end of last year, but have hovered around 300,000 per quarter since then (Table 2). Modifications have continued to rise, and now slightly exceed the number of repayment plans.
- Prime mortgage workouts stepped up to just below 200,000 per quarter in the first half of 2008—close to twice the year-earlier pace.

¹ The Hope Now Alliance is a private-sector group of lenders, servicers, mortgage counselors, and investors that were brought together by the government to address problems of servicing mortgages and helping homeowners. President Bush asked HUD and Treasury to launch a new foreclosure avoidance initiative in August 2007, and Treasury Secretary Paulsen announced the creation of Hope Now on October 10, 2007.

Table 2. Estimated Subprime and Prime Mortgage Workouts from Hope Now
(Thousands of loans during the period)

Date	Subprime		Total workouts	Prime Total workouts	Total subprime and prime workouts
	Repayment plans	Modifications			
2007	717	214	947	590	1537
2007:Q1	155	29	184	110	294
2007:Q2	167	35	202	105	307
2007:Q3	204	45	248	150	398
2007:Q4	197	103	300	174	474
2008:Q1	166	123	287	195	483
2008:Q2	161	164	325	197	522

Notes. Repayment plans are counted at initiation, modifications at successful completion (i.e. when the borrower and servicer agree to the modification). Data are from surveys of servicers in the Hope Now Alliance. Components may not sum to totals because of rounding.

There is no consensus on the relevant metric by which to judge the effort put into, and success with, loss mitigation.

- The Mortgage Bankers Association (MBA) evaluates workouts and short sales relative to a measure of avoidable foreclosures, equal to total foreclosures less those in which the borrower was an investor, re-defaulting on an existing workout program, or unable to be contacted. They estimate that 63 percent of overall foreclosures and 70 percent of subprime ARM foreclosures initiated in 2007:Q3 were unavoidable by this definition.² For subprime ARMs:
 - Loans on non-owner-occupied properties accounted for 18 percent of foreclosure starts;
 - Borrowers defaulting on an existing modification or repayment plan accounted for 40 percent of foreclosure starts;
 - Cases where the borrower could not be contacted (which could include non-owner-occupied properties) accounted for 21 percent of foreclosure starts.
- The Conference of State Bank Supervisors (CSBS) compares workouts to total foreclosures or delinquent loans (yielding measures that they interpret as implying the industry is “too slow” in their pace of modifications).
 - A CSBS report notes that modifications are rising, but at best in line with increases in delinquency rates.³
 - Based on their sample of servicers, 1.03 million loans were seriously delinquent in January, but only about 350,000 loan modifications were in process or completed in the quarter. (This is the origin of the CSBS headline that 70 percent of borrowers are not being helped.)

² Brinkmann (2008).

³ Conference of State Bank Supervisors (2008).

- Moody's reports that 10 servicers that account for about 50 percent of the subprime ARM market saw modifications jump from a quarterly rate of 3,300 in the first three quarters of 2007 to 20,000 in the fourth quarter and 31,000 in the first quarter of 2008.⁴ The underlying sample consisted of about 410,000 active subprime ARM loans with an interest rate reset date between Jan. 1, 2007 and Mar. 31, 2008.
 - To measure the extent of loss mitigation activity, Moody's compares loans that were modified or in a workout plan to loans that are 60 days or more past due. This ratio rose from 24 percent in their December 2007 survey to 35 percent in their March 2008 survey.
- The theoretically-appropriate benchmark for loss mitigation efforts is the number of borrowers who, *but for* the appropriate help, would have defaulted on their loans. Ideally, such modifications would occur before the borrower fell into serious delinquency, and thus would not necessarily be related to delinquency or foreclosure rates. In practice, measuring the size of this group is obviously quite difficult.

What is the evidence that at least some servicers are not modifying loans quickly enough?

- Many servicers do not initiate loss mitigation until the loan becomes seriously delinquent, sometimes 90 days delinquent or more. Investor rules in some cases require this, in part because some borrowers are able to return to current status on their own. But, successful loss mitigation becomes more difficult as overdue payments build.
- Community groups report that borrowers continue to face difficulty in contacting servicers. Others told us that the large number of borrowers calling the Hope Now hotline indicates significant frustration with the lack of response from mortgage servicers.
- Staff at NeighborWorks America told us that the waiting time between submitting a proposal to a servicer for a loan workout and getting a response—either approval or disapproval—has been lengthening, rather than getting shorter.
- Notwithstanding the claim of some servicers that they had “worked through their backlog,” an investor who closely monitors the performance of servicers said foreclosure timelines are increasing, suggesting that servicers are overwhelmed.
- Anecdotes of borrowers being mistreated by the system—from newspapers and other sources—abound.
 - Servicers most often put loans on a “dual track” so that both foreclosure and loss-mitigation efforts proceed simultaneously. According to NeighborWorks, so much time can elapse between a counselor's submission of a loan modification or workout proposal and the servicer's attention to the proposal that the foreclosure process is too far advanced to stop. We have been told of cases in which a house is repossessed within days of a feasible modification plan being offered because the foreclosure track moved faster than the loss-mitigation track.

⁴ Moody's Investors Service (2008b).

- While servicers are reportedly now more likely to return phone calls and emails, housing counselors report dissatisfaction with their experience with servicers. Counselors report that some servicers are unwilling to accept proposed modifications outside of a relatively short menu of options. (It is obviously hard to verify these claims.)

Servicers have substantially improved outreach efforts, but continue to report difficulties making contact with borrowers. They say some distressed borrowers may not respond to servicers' attempts to reach them because they feel nothing can help them or they expect direct contact with their servicer might accelerate the loss of their home.

- Servicers report that outreach efforts by groups such as Hope Now and NeighborWorks America have made contacting borrowers easier. For example, servicers have noted that they are finding it worthwhile to participate in forums in major cities that bring together delinquent borrowers with housing counselors and servicers.
- However, servicers for loans in private-label MBS generally have not employed “door knocker” firms, like those used to contact borrowers with loans in GSE pools, reportedly because they have not been assured that the costs would be reimbursed by the investors. Such firms report contact rates in excess of 90 percent.

Servicers are responding to continued pressure from the Congress, regulators, and consumer groups and recently have taken steps to improve communication with borrowers and establish servicing guidelines. These efforts have been largely facilitated by the Hope Now Alliance.

- The Hope Now Alliance issued new Mortgage Servicing Guidelines in June 2008. Servicers in the alliance are expected to support the activities and principles in the guidelines and to have implemented practices within 60 days.⁵
- The guidelines specify that servicers should transmit acknowledgement of a loss mitigation request from a borrower or housing counselor within 5 business days of receipt. The servicer should also provide to the borrower information about the key elements of the evaluation process and advise them within 45 days of an approval or denial of most requests.
 - Note, however, that the 45-day response time is after *all* documents have been received from the borrower. In states with rapid foreclosure timelines, this 45-day response period and the time required to put in place the workout plan may exceed the time needed to initiate and complete a foreclosure.
- The guidelines also list loss mitigation options that are accepted servicing practices, including a streamlined modification to freeze interest rates on adjustable-rate mortgages, and consideration of delaying foreclosure proceedings if a loss mitigation option may work.

⁵ Hope Now Alliance (2008).

Losses from foreclosures

Loss severity rates on foreclosed subprime mortgages are high and involve substantial deadweight losses, suggesting that both borrowers and investors could be better off avoiding some foreclosures.

- The direct costs of foreclosure include those that vary with the value of the property and those that do not.
 - Tax and insurance payments, commissions paid to real estate agents, utility payments, and repair/maintenance costs are higher for more valuable properties.
 - Expenses such as legal/court fees and title charges are fixed (i.e. they do not depend on the value of the property).
 - The presence of a fixed component implies that total direct foreclosure costs as a fraction of the unpaid mortgage balance decline with the balance. For example, UBS estimates that this fraction is 50 percent for a \$50,000 loan and 15 to 20 percent for loans above \$200,000.⁶
- Losses on a foreclosed-upon property are the sum of the direct costs of foreclosure, mortgage payments missed prior to sale of the property, and the amount by which the sales price falls short of the unpaid loan balance. The loss severity *rate* is typically expressed as the loss relative to the unpaid loan balance.
 - Although servicers typically advance principal and interest payments to investors as the foreclosure proceeds, these advances must be paid back to the servicer after REO disposition of the property. Thus, investors effectively lose the payments. The losses associated with the missed payments increase with the interest rate on the loan and the time it takes to complete the foreclosure and liquidate the property.
 - All else equal, the gap between the sales price and the unpaid loan balance will be larger for loans with a higher initial LTV. It will also, of course, be larger for homes that have experienced a greater house price decline. Thus, these losses will tend to be larger the longer the liquidation timeline—both because house prices are currently declining in most parts of the country and because homes deteriorate over time. Table 3 presents some simple mechanical calculations, based on a framework used by UBS, to illustrate how losses to first-lien holders vary as house prices decline. Losses for subprime mortgages will tend to be toward the right and down in the table given their often-low downpayments and their concentration in communities where house price declines are expected to be particularly large.

⁶ UBS Investment Research (2008).

Table 3. Losses on Unpaid First-Lien balances and House Price Declines
(As a percent of unpaid first-lien balances)

House Price Decline (Percent)	Initial First-Lien LTV (Percent)			
	80	85	90	95
0	25	18	11	5
10	13	6	0	-5
20	0	-6	-11	-16
40	-25	-29	-33	-37
60	-50	-53	-56	-58

Notes. Calculations assume no appraisal bias and that negligible amounts of principal have been repaid at time of sale.

- Data from a specialty servicer for subprime loans indicate that average losses on more than 900 subprime mortgage foreclosures in the fourth quarter of 2007 were more than 50 percent of the average principal balance of \$190,000.
 - Legal fees, sales commissions, and maintenance expenses associated with the liquidation of the property averaged 11 percent of the principal balance.
 - Missed mortgage payments were 10 percent.
 - Unrecovered property value represented 22 percent of principal. Some of this loss stemmed from the decline in the market value of the house and some stemmed from a “foreclosure discount” (the effect on the value when a house is in foreclosure). The servicer did not separately estimate the contributions of these two factors.
 - “Other” factors accounted for the remainder of the loss.
- Similarly, Credit Suisse reports a loss severity rate of about 55 percent on securitized subprime mortgages in the six months ending in May 2008, with a slight upward trend in rates in recent months.⁷ In Michigan, Ohio, and Indiana, loss severities averaged more than 80 percent.
 - The report’s estimates of the “foreclosure discount” range from about 5 percent to 15 percent, based on the lost value of a foreclosed property above that which can be explained by changes in house prices in the local area for non-foreclosed homes.
 - Credit Suisse estimates a loss severity rate on short sales to be 40 percent in recent months. Short sales avoid most of the liquidation expenses and the foreclosure discount. They can reduce lost interest expenses and value if they are completed in a shorter timeframe than needed to execute a foreclosure and resell the property in an environment of falling house prices.
- Loss severities on prime mortgages are smaller than for subprime, but substantial nevertheless. Some studies suggest that foreclosure losses account for between 20

⁷ Credit Suisse (2008b).

to 40 percent of the loan balance (Mason, 2007; Capone, 1996).⁸ Assuming that foreclosure losses equal 30 percent of the loan balance and applying the Cutts and Merrill (2008) breakdown of expenses for foreclosed conforming mortgages held by Freddie Mac implies liquidation expenses as large as 10 percent of the principal, missed payments equal to 7 percent, lost property values equal to 6 percent, and other factors accounting for another 7 percent. Losses from property value declines for prime mortgages of 6 percent contrast sharply with the 22 percent average in lost property values for foreclosed subprime mortgages; the 6 percent, however, is based on an historical sample, and value losses on prime mortgages may turn out to be higher for more recent foreclosures.

2. Mortgage servicer revenues and costs

Consolidation in the servicing industry has created substantial economies of scale in processing payments and managing collections for performing loans. But such economies of scale are not present in loss mitigation, which generally requires more labor-intensive processes, such as assessing whether a financial setback is temporary or permanent and, in turn, determining the appropriate loss-mitigation option. Servicers of loans in private-label MBS do not have strong financial incentives to invest in additional staff or technology for loss mitigation because investor guidance is limited, the prospect for future subprime servicing volume is dim, and expected recidivism rates on home retention workouts are high. Moreover, the costs of loss mitigation will be *in addition to* expenses incurred in any parts of a foreclosure procedure executed, because trusts generally require that foreclosure options be pursued even if loss-mitigation efforts have been initiated.

Industry structure

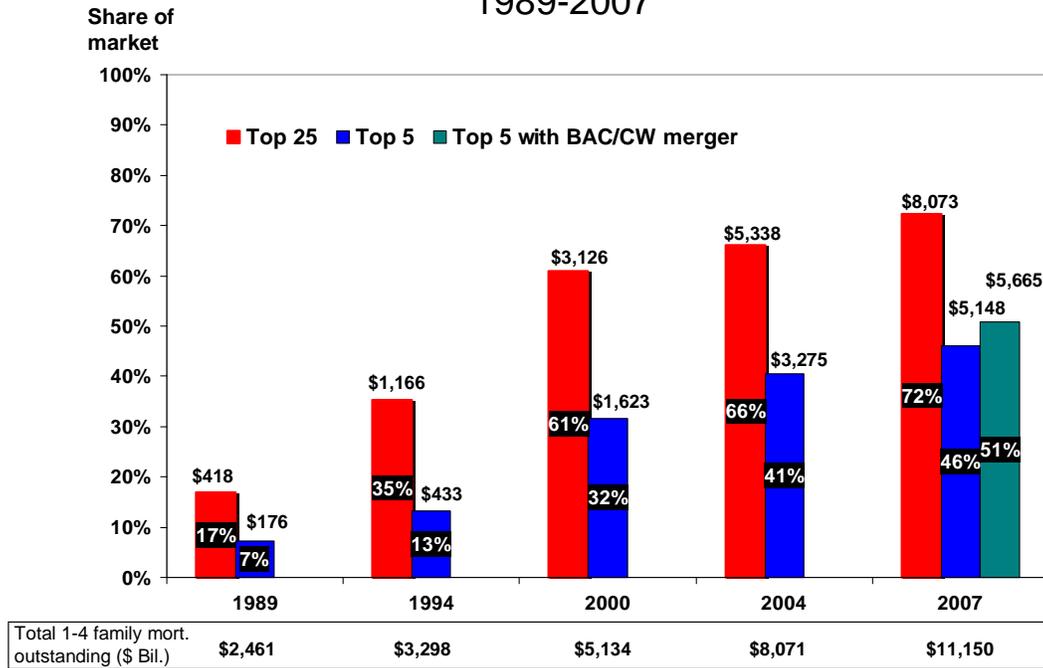
The mortgage servicing industry has consolidated substantially over the past 20 years.

- The largest five firms accounted for 46 percent of the residential mortgage market in 2007, up from 7 percent in 1989 (see figure)⁹. These firms are owned by depository institutions and generally service loans across the full spectrum of mortgage products (GSEs, private-label subprime, alt-A, option ARMs, and FHA/VA-insured securities).
- Sixteen firms service 88 percent of the subprime market, and eleven firms service 81 percent of the alt-A market (Table 4).
- Smaller, more specialized firms service mainly non-agency securitized products. Most of these are now owned by investment banks. Two large alt-A servicers, Aurora and IndyMac (before failing in July 2008), expanded into GSE products.

⁸ Mason reports that the cost of a typical foreclosure has been estimated to be about \$60,000, about 20 to 25 percent of the loan balance. Capone estimates a loss severity rate of 30 percent for an eight-month period between the date of last payment and property disposition.

⁹ Based on 2007 servicing volumes, the merger of Bank of America and Countrywide completed in July 2008 should have pushed the top-five share to above 50 percent.

Consolidation of Mortgage Servicing 1989-2007



Source: Inside Mortgage Finance

**Table 4. Large Servicer Holdings of High-Risk Mortgages
(Holdings at Year-End 2007)**

Rank	Servicer	Parent	Primary Product Types	Total Asset Holdings			Total Non-GSE Securities Holdings		
				All Loans	Subprime	Alt A	Option ARM	FHA/VA	
			Volume	Mkt. Share	Mkt. Share	Mkt. Share	Mkt. Share	Mkt. Share	
1	Bank of America/Countrywide	Comm. Bk	All Products	\$1,993	18%	12%	18%	22%	14%
2	Wells Fargo & Company, IA	Comm. Bk	All Products	\$1,473	13%	5%	7%	0%	30%
3	CitiMortgage Inc., MO	Comm. Bk	All Products	\$838	8%	7%	1%	0%	10%
4	Chase Home Finance, NJ	Comm. Bk	All Products	\$776	7%	8%	2%	0%	10%
5	Washington Mutual, WA	Thrift	All Products	\$623	6%	5%	8%	21%	0%
6	Residential Capital LLC, NY (GMAC)	Nonbank	All Products	\$410	4%	4%	9%	10%	5%
7	IndyMac, CA	Thrift	Alt A/GSE	\$198	2%	1%	12%	12%	0%
8	HSBC North America, IL	Comm. Bk	Subpr/Prime	\$161	1%	9%	0%	0%	0%
9	Aurora Loan Services, CO (Lehman Bros.)	Inv. Bk.	Alt A/GSE	\$113	1%	0%	9%	0%	0%
10	EMC Mortgage Corp, TX (Bear Stearns)	Inv. Bk.	Alt A/Subpr	\$89	1%	2%	8%	10%	0%
11	Merrill Lynch B&T FSB, NY	Inv. Bk.	Subprime	\$65	1%	7%	0%	0%	0%
12	Ocwen Financial Corporation, FL	Nonbank	Subprime	\$53	0%	6%	0%	0%	0%
13	Option One Mortgage, CA (WL Ross & Co.)	Pr. Equity	Subprime	\$48	0%	6%	0%	0%	0%
14	HomEq Servicing Corporation, CA (Barclay's)	Inv. Bk.	Subprime	\$47	0%	5%	0%	0%	0%
15	Litton Loan Servicing, TX (Goldman Sachs)	Inv. Bk.	Subprime	\$46	0%	4%	0%	0%	0%
16	Saxon Mortgage (Morgan Stanley)	Inv. Bk.	Subprime	\$37	0%	5%	0%	0%	0%
17	American Home Mortgage Corp. (WL Ross & Co.)	Pr. Equity	Alt A	\$30	0%	0%	6%	14%	0%
18	Select Portfolio Servicing, UT (CSFB)	Inv. Bk.	Alt A/Subpr	\$29	0%	2%	2%	0%	0%
Totals/Shares by Product Type				\$7,000	63%	88%	81%	89%	69%

Notes:
 Total, Subprime and FHA/VA figures are from Inside Mortgage Finance, except for IndyMac Subprime, which came from financial statements.
 Alt A and Option ARM security volumes are from Loan Performance. Only non-missing values were included in calculations.
 Figures are year-end 2007. Bank of America and Countrywide figures were combined.

Servicer revenues and costs

The main revenue source for servicers is a fixed fee, expressed as a percent of the outstanding balance of the loan, and is paid out of monthly principal and interest (P&I) payments collected by the servicer.

- Typical annual servicing fees are 25 basis points for prime fixed-rate loans, 37.5 basis points for prime ARMs, 44 basis points for FHA loans, and 50 basis points for subprime loans. For example, a servicer of a subprime mortgage with remaining expected lifetime of 2 years and an average balance of \$200,000 over these 2 years would expect to receive a total of \$2,000 in servicing fees for this loan ($0.005 * \$200,000 * 2 \text{ years} = \$2,000$). A servicer for a prime loan of the same balance would earn half this amount over the same period.
- The higher fees for subprime mortgages reflect the greater frequency of contact between the servicer and the borrower often required for these loans and the lower average mortgage balance, which makes it more difficult to cover fixed costs.
- The fees for FHA loans are set by law and are higher compared to prime loans both because of the greater amount of required paperwork and the lower average loan balance on an FHA loan.
- As a result of the consolidation in the industry, servicers have realized large economies of scale in payment processing and collections, so that the costs of servicing have trended down over time. In good times, the servicing business has been profitable.
- Servicing fees are at the top of the payment structure in any security, i.e., the servicer always gets paid for all active loans on its books.

Loan defaults raise servicing costs and reduce revenues

Loan loss mitigation is labor intensive and thus raises servicing costs, which in turn make it more likely that a servicer would forego loss mitigation and pursue foreclosure even if the investor would be better off if foreclosure were avoided.

- Servicers have long-established procedures for foreclosures and loss collection, but are less likely to have standardized procedures for loss mitigation. Loss mitigation involves working with borrowers, many with unique situations, and thus does not enjoy the same economies of scale as processing or collections activities.
- Loss mitigation costs are an *added* expense to servicers since a loan served a notice of default will continue through the normal foreclosure process even as loss mitigation is pursued.
- Loss mitigation requires substantial time to, for example, contact borrowers, collect and verify data, obtain home value estimates, determine whether the borrower has suffered a temporary or permanent setback, coordinate actions with second-lien holders, and calculate net present value estimates of loss mitigation alternatives. In contrast, other parts of the default management process, including

- initiating foreclosure, are much more automated and, importantly, do not require borrower contact.¹⁰
- Loss mitigation costs vary across servicers according to (1) the staff and technology employed, (2) the processes put in place for addressing non-performing loans, and (3) the PSAs governing the pools serviced and, likewise, the investor requirements surrounding loss mitigation
 - Loss mitigation requires some specialized skills. Servicers report having to pay higher wages to loss mitigation specialists relative to other staff. Many servicers appear to have inadequate staff with loss mitigation experience and some servicers lack automation from dedicated software programs designed to evaluate workout options. Large staffs and efficient loss mitigation technologies are only needed during periods of severe housing downturns, and the low frequency of these events has apparently not been sufficient to lead most servicers to ramp up such capacity.
 - Small specialty servicers are more likely than the large full-product servicers to have invested in staff and automation needed for loss mitigation because the former have traditionally concentrated in servicing nonprime loans that have significantly higher default rates.
 - But large full-product servicers service a large share of nonprime mortgages: 41 percent of subprime, 44 percent of securitized nonagency alt-A, and 54 percent of nonagency option ARMs. (Large full-product servicers also service 69 percent of loans in GNMA securities.)
 - Servicers tell us that currently it is difficult to staff their loss mitigation departments because of a shortage of qualified candidates.
 - Servicers may be reluctant to invest in staff and technology in order to conduct more modifications.
 - The parents of some servicers may be financially constrained.
 - For loans serviced for investors other than the GSEs (i.e. “non-GSE” loans), the incentives to invest are weaker. Non-GSE loans have higher expected recidivism rates, which makes it likely that the servicer might have to incur loss mitigation expenses again. In addition, prospects for future non-GSE loan volumes are meager, at least in the near-term, which holds down the return from such investments.
 - Another servicing cost associated with delinquent mortgages is the funding cost of advancing payments on delinquent loans to investors on these mortgages. In the case of loans in GSE pools, servicers historically made advances only through the fourth month of delinquency, at which point F/F purchased the loans out of the pool; both Freddie and Fannie reduced such purchases at the end of last year, however. In the case of loans in private-label pools, funding costs are incurred generally all the way through REO disposition of the property.
 - The cost of funding payments advanced for one year for a typical subprime loan of \$200,000, assuming an interest rate of 5 percent, is about \$400.

¹⁰ Cutts and Merrill (2008) note that in Freddie Mac’s portfolio only around half of the borrowers who lost their home through a foreclosure sale had a contact with the servicer.

- Out-of-pocket expenses can generally be charged to investors, whereas overhead and labor costs generally cannot be. For example, title searches, required for both loss mitigation and foreclosures, are chargeable to investors. But the extent to which servicers can pass costs to investors varies across options: servicers appear to be able to pass on more foreclosure-related costs, such as legal services and property disposition expenses, than loss mitigation costs, such as labor expenses associated with re-underwriting the loan.
- Loss mitigation servicing costs per delinquent loan are likely higher than in the past. More delinquent loans are now in private-label subprime MBS than in the past, requiring servicers to operate under many different PSAs, with different guidelines and investor preferences for loss mitigation, which are less uniform than protocol defined by the GSEs. In addition, the individual loans in the pool were more likely to have been poorly underwritten and associated with borrowers with lower credit quality and fewer financial assets, making it more difficult to find viable solutions for home retention workouts.
- Loan defaults ultimately lead to a stoppage in servicing revenues, which are restarted only if the loan is successfully worked out. Thus, servicers claim they have full incentive to pursue home retention workouts to regain lost revenue. Regained revenues add to the net benefits from a successful workout. In addition:
 - The GSEs pay fees for all approved and properly executed workouts, which offset some lost revenues and loss mitigation costs, but investors in private-label MBS do not.
 - If the servicer is part of a financial institution, the institution as a whole could earn revenues performing and billing for some of the services involved in the modification or foreclosure process. However, we have heard that it is more common to gain revenues for foreclosure-related services because these services (legal, property management, REO disposition) are easier to do through fee-for-service businesses than services associated with loss mitigation.

3. Servicers' duties and obligations to investors—the net present value calculation for determining whether to engage in loss mitigation

Rules are in place to protect investors' interests when a loan becomes delinquent. Servicers' duties and obligations to the investors of private-label MBS are governed by Pooling and Servicing Agreements (PSAs). These PSAs vary widely but generally state that the servicer is obligated to maximize the interests of the investors or certificate holders, often implemented by comparing the net present value (NPV) of a loss mitigation option to the NPV of foreclosure. However, servicers' incentives are not always aligned completely with those of the investors, and they have considerable discretion in interpreting PSA language. The GSEs recognize the conflict and provide explicit guidance for how servicers should deal with delinquent loans in GSE pools. The PSAs for private-label MBS do not provide much specific guidance, leaving servicers to determine what loss mitigation steps are most appropriate. Indeed, some investors fear that modifications will not

be successful and will ultimately cost them more by delaying a timely resolution of losses at a time when house prices continue to fall. That said, the investors with whom we spoke did not widely convey concern that servicers are relying too heavily on foreclosures relative to loan modifications.

Servicers typically are required by the PSAs to pursue loss mitigation on a delinquent loan if the net present value (NPV) to the investors is higher than that realized under foreclosure. The operating procedure is for the servicer to calculate the NPV of a proposed loss mitigation option relative to foreclosure, and implement the option if it has a higher NPV to the investor.

- In practice, servicers determine the possible loss mitigation options they will offer to a borrower, and will consider the options in sequence, from least costly to investors to most costly. Some servicers may not be guided by a “waterfall” of possible loss mitigation options, and evaluate the NPV of an option that is proposed to them relative to the option of foreclosure. The recent guidelines agreed to by servicers in the Hope Now alliance lists possible loss mitigation options, including temporary forbearance, repayment plans, modifications, partial claims, short sales, and deeds in lieu of foreclosure.

While PSAs generally obligate servicers to follow customary and usual standards of prudent mortgage servicing, it does not appear that investors generally question servicers of private-label MBS about the practices they follow. Thus, in practice, servicers can exercise discretion in their choice of parameters when calculating the NPV of different options. This is less true in the case of GSE pools, because the GSEs prescribe specific actions for servicers to take at different points in delinquency, provide software to servicers that compute the NPV of different options, and monitor servicer practices quite closely.

Incentives of servicers are not completely aligned with those of investors. Servicers often are not part of the same organization that originated the loan and they often do not have any ownership stake. Primarily, servicers will favor alternatives that are less labor intensive, and hence less costly, or for which out-of-pocket expenses will be reimbursed or payments from the GSEs will be greatest.

Servicer discretion may be exercised in various ways, including the choice of various parameters important to the NPV calculation: (1) the house price likely to be obtained in a foreclosure, (2) the discount rate used to discount payments streams under workout options, and (3) the expected recidivism probability. A higher sales price, discount rate, or recidivism rate would increase the NPV of a foreclosure relative to a modification. These parameters, especially in the current environment of high delinquencies and falling house prices, are highly uncertain and thus a sizable amount of subjectivity may be introduced into these calculations.

- It is not clear that all servicers even want the right to exercise their discretion. Indeed, some have expressed a preference for less ambiguous guidelines from investors regarding parameter inputs and permissible modifications. Some servicers have cited the much more specific guidelines for modifications and

other workouts offered by the GSEs as one reason for the greater tendency of the servicers to modify delinquent loans insured by the GSEs. Guidelines from Hope Now on more standardized procedures are also viewed favorably. In addition to appealing to a “rules-based” nature of servicing, more specificity in procedures and guidelines could reduce the perceived threat of lawsuits by investors that some servicers cite.

While investors seem somewhat concerned about servicer capacity, they do not convey widespread concern that servicers are relying overmuch on foreclosures relative to modifications. Investors may be more comfortable with foreclosures because that process is more transparent. Investors also may fear modifications will be unsuccessful and, in an environment of declining house prices, would rather take losses sooner than later (the reasoning behind the maxim “the first loss is the best loss”).

- Investors with whom we spoke were not enthusiastic about an idea to reimburse servicers for expenses of loss mitigation. In their view, such payments could lead to more modifications than warranted by the NPV calculations. They also felt that the PSA adequately specified that modifications that maximized NPV should be undertaken. A typical response from an investor was, “Why should I pay servicers for doing something that I already paid them to do?”

4. Loss mitigation for loans in agency pools

Fannie Mae and Freddie Mac (F/F) guarantee the timely payment of principal and interest on mortgages in their pools. Each serves as the Master Servicer for its securities and thus has the authority to represent the interest of pools to servicers and significant influence over the actions taken by individual servicers in working out delinquent loans. They oversee the entire default management process, from identification to resolution, of delinquent mortgages. They provide automated tools to their servicers to aid in loan workouts, have rules for delegating authority to servicers, and generally offer a single point of contact for approving exceptions. They offer reputational and financial incentives to servicers in order to encourage more efficient resolution of delinquent loans. Their guidelines are published in their Seller/Servicer Guides that are referenced in their securities. They believe that their actions to encourage appropriate modifications have helped to keep recidivism rates relatively low.

F/F empower servicers with sophisticated automated tools.

- Freddie Mac developed and still maintains Early Indicator[®] behavior scores to help servicers manage delinquent accounts. Fannie Mae developed a similar product, Risk Profiler[®].
- Freddie Mac developed Early Resolution[®], a loss mitigation scripting software to aid workout specialists; the product has since been sold to a different firm and any interested servicer can now pay to use it. Freddie provides Workout Prospector[®] to help servicers with NPV calculations and underwrite borrowers for workout solutions.

F/F use reputational and financial incentives to improve servicer performance. For example, Freddie uses quantitative metrics, with the best performing servicers earning recognition as Tier One Servicers and financial rewards. Some servicers have said that such recognition is important, largely because it enhances their prospects for future business with F/F.

F/F explicitly pay fees to servicers for approved and properly executed workouts and short sales.

- In recent years through July 2008, Freddie paid fees of \$250 for a repayment plan, \$400 for a modification, \$275 for a deed in lieu of foreclosure, and \$1,100 for a short sale. No fees were paid for refinancings.
- F/F delegate authority to servicers to pay second-lien holders \$1,000 to \$3,000; higher payments would require servicers to call in for approval. In the current environment with large second-lien balances, these payments may not be sufficient to induce the holder to re-subordinate the lien as part of a loan modification or to surrender the lien and take the loss as part of a short sale.
- Fannie introduced a program in April 2008, available to all Fannie-approved servicers, to be used as an alternative loss-mitigation strategy. An unsecured personal loan for up to the lesser of \$15,000 or 15 percent of the unpaid principal balance is available for borrowers who have fallen behind on their mortgage but are able to resume payments once their loan is brought current by the advance. Fannie pays servicers \$600 for using this program.
 - This program was largely developed to avoid the implications of an FAS 140 accounting rule that would require a much larger writedown if F/F pulled the loans out of the securities pools and brought them on balance sheet.
- In the summer of 2008, F/F announced that they would roughly double the fees paid for certain workouts and short sales.¹¹
 - Freddie announced in July that it will pay \$500 for a repayment plan, \$800 for a loan modification, and \$2,200 for a short sale. Fannie announced similar increases in August.
 - Freddie also announced that it will increase the amount of time for servicers to seek alternatives to foreclosure. In some non-judicial states, where the foreclosure process can be relatively quick, it will allow servicers as many as 300 days from the due date of the last payment.
- F/F also reimburse servicers for explicit out-of-pocket costs incurred in executing loan modifications, such as the cost of a title search, credit reports and appraisals.
- HUD pays similar fees for modifying FHA loans and also recognizes servicers for good performance.

Servicers report that they find it “far easier” to work with loans in F/F pools. Each pool has a single set of guidelines that make it easier to apply rules and approve exceptions.

¹¹ See Freddie Mac (2008) and Hagerty (2008).

F/F pools are created subject to REMIC and FAS140 rules, just as the private-label MBS pools are, so the parties to the pool are required to act in a “brain dead” manner. But, because F/F have (up to now) removed most loans from the pool before they are modified, their actions appear to be less constrained by the “passive” notion of the pool. Taking the loan out of the pool results in F/F having to take an immediate fair value writedown and hold the loan on its books until it terminates; this speeds up the recognition of losses.

- Accounting rules (FAS 140 and SOP 03-3) are affecting the way loan modifications are conducted in F/F pools.
- Freddie and Fannie (under SOP 03-3) are required to mark-to-market loans that they pull out of pools for modification. Recent marks have been about 78 percent of par value for modifications and between 60 and 65 percent of par value for loans 120 or more days delinquent. Although in many cases these losses (or even greater losses) would need to be recognized eventually, speeding up the recognition could potentially damp modifications in an environment where the GSEs are capital-constrained.
- That said, the new Fannie Mae program (described above) that advances up to \$15,000 to delinquent borrowers enables loan modifications without pulling the loan from the pool. The loan is kept in the pool and a promissory note covering the arrears goes on its balance sheet and gets written off. The writedown is much smaller than if Fannie had pulled the loan out of the pool.

5. Loss mitigation for loans in private-label MBS pools

Several aspects of private pools hinder successful loss mitigation. In addition to the vague PSA guidelines discussed earlier, investors do not offer monetary incentives, and servicers see little reputational gain from performing well to attract future business because the prospects for servicing a significant volume of subprime mortgages in the future are dim. Large firms that service both GSE and private-label pools may respond to the greater clarity and incentives by devoting their scarce resources to the loans in GSE pools at the expense of loans in private-label MBS pools. Servicers also worry about legal liability from dissatisfied investors, especially in cases where a modification benefits some MBS tranches at the expense of others. However, tax and accounting issues surrounding workouts of loans in these pools have been clarified over the past year and no longer present a major hurdle. (For loans held in portfolio, regulatory accounting for troubled debt restructurings remain a potential problem.)

Several key features of private-label MBS pools distinguish them from GSE pools and bear importantly on what workouts are feasible and optimal:

- PSAs are not standard and provide little guidance to implement workouts. Most give servicers discretion in working with borrowers but some impose caps or outright restrictions on types of workouts.
- A study by Credit Suisse of 31 PSAs indicated that only two did not permit modifications when the loan was in default or default is “reasonably foreseeable.” About 12 of the 29 PSAs that allowed modifications had some type of restriction, such as a limit on the percent of mortgages that could be modified or on the

minimum mortgage rate that could be charged in a modification that reduced the borrower's rate.¹²

- A nonagency servicer told us that they operated under guidelines of 500 different subprime and alt-A PSAs, with most allowing loan modifications. Of these 500, (a) 48 percent have no restrictions on servicer behavior, apart from expecting the servicer to maximize the investors' profits according to an NPV calculation, (b) 26 percent require the prior approval of the trustee of the trust to modify loans, (c) 18 percent allow workouts except for those that extend the maturity of the loan beyond that of the pool's maturity, (d) 4.5 percent prohibit any workout, and (e) around 3 percent prohibit modifications other than some sort of re-amortizing into a balloon payment.
- We were told that while some trusts required approval of modifications by the trustee, the trustees generally are not servicers and thus are not in a position to evaluate the proposed workout. Thus, trustees tended to send the servicer back to the PSA language to determine whether the workout would be appropriate.
- Investors in private-label MBS pools may number in the hundreds, tend to be dispersed, and may be uninformed about how servicing works, the specifics of the PSA, and about the discretion left to servicers. For the most part, investors do not seem to be actively monitoring servicer performance. While the number of investors in a given GSE pool may also be large, the GSEs actively monitor servicers because GSEs insure the credit risk.
- Unlike agency pools, a private-label MBS pool may be carved up into multiple tranches from AAA down through B and residual (or equity) classes, where the benefits of a particular course of action for a delinquent loan differ markedly for the different tranches. "Tranche warfare," a term describing conflicting interests among different tranche holders, could deter modifications by increasing the amount of time a servicer spends in soliciting investor approval for a modification. While a servicer's obligation under a PSA is to maximize the returns to investors as a whole, and not just returns to a single class, some modifications may benefit various tranches at the expense of others. Servicers may thus fear being sued by some tranches if they pursue modifications (Eggert, 2007). For example, an investor holding the residual tranche stands to benefit from a loan modification that prevents default, while higher-rated tranches might be better off with a foreclosure where losses are realized at the expense of the residual tranche. This preference by higher-rated holders for foreclosure increases with higher recidivism rates.
- Unlike F/F, investors in private-label MBS trusts do not generally pay fees to servicers for loan workouts and short sales. From the investors' perspective, loss mitigation expenses are considered to be covered under the standard servicing fees that they are paid. This could affect how a servicer deals with a delinquent loan, particularly when the servicer is looking at very high costs of one type of resolution versus another.
 - As noted earlier, the economics of loss mitigation versus foreclosure depends on more than reimbursements. A servicer may pursue workouts

¹² Credit Suisse (2007).

because the servicer earns regular servicing fees only if a workout is arranged that keeps the mortgage on its books. Moreover, servicers may wish to avoid the costs associated with foreclosures, particularly the funding costs for advancing P&I payments to investors until the REO property proceeds are realized to the trust, and this period can be lengthy. However, the high labor costs associated with workouts, particularly when the servicer is unaccustomed to extensive loss mitigation, may overwhelm any benefits to the servicer of completing workouts relative to foreclosure.

- Some servicers say the fear of being sued by some of the investors dampens their enthusiasm for workouts. Without guidance from investors, some servicers are concerned that investors may second guess their decisions to modify rather than foreclose. The widespread feeling is that foreclosure is a known and accepted procedure in the case of a delinquent loan so that the servicer is less likely to be questioned by the investors. That said, servicers admitted that investors have rarely questioned a workout, or asked to see NPV spreadsheets, or threatened a lawsuit in the past.
- The execution of short sales also appears to be hindered by lack of guidance. Short sales will involve an immediate loss of principal balance, and many servicers were slow to develop criteria for acceptable losses, in part from uncertainty about what investors would deem appropriate.

Many other factors appear to represent important impediments to servicer modifications of loans in private-label MBS pools:

- Among these is a lack of adequate and experienced staff, difficulty finding more staff, and not implementing software and automated systems that facilitate the loan modification process. One industry contact asserted that industry capacity is not only inadequate but diminishing over time, citing a lack of buyer interest in portfolios being shopped by servicers who are scaling back because of financial troubles.
- High recidivism rates may make loan modifications the least attractive option for investors in the pool despite the sizable losses incurred in a foreclosure.
 - While the historical re-default rate on modified conforming Freddie Mac mortgages is about 20 percent (Cutts and Merrill, 2008), a much higher rate of re-default on loans currently being modified should be expected because many are nonprime and house prices are falling sharply. Indeed, one underwriter reported that 18 percent of subprime loans that underwent a traditional modification in early 2008 were already delinquent just a few months later. Another told us that 50 percent of subprime loans that were modified under the Hope Now “Fast Track” plan for current subprime loans with upcoming rate resets were delinquent within a few months; these modifications froze the payments at the initial amounts, but did not reduce payments. Another alt-A servicer reportedly targets its modification efforts for an average 30 percent recidivism rate.
 - A high recidivism rate directly impinges on the profitability of a potential loan modification. In servicer calculations of the net present value of

various options for delinquent loans, a higher probability of recidivism lowers the NPV of a modification.

- A high recidivism rate increases the odds that the servicer will incur labor costs of modification again, increasing the servicers' incentive to foreclose.
- Some loans were underwritten with very lax standards—high combined LTVs and inadequate documentation of income—and the underlying borrowers may not be able to sustain a reasonable monthly payment even after modification.
- Looking beyond loans held in private-label pools, modifications of loans held by depositories are reportedly being damped because modification requires these loans to be re-classified as troubled debt restructurings (TDRs) if the modification occurs before the loan becomes seriously delinquent. TDRs increase the amount of capital that a depository must hold. Once a loan is classified as such, it remains in that status for some unspecified period of time.
- Tax and accounting considerations were thought to be important impediments to servicers modifying loans in private-label MBS pools, but clarifications by the IRS and SEC have largely removed these impediments.
 - REMIC status has been identified as a factor significantly impeding modifications in the past, but no longer. Many securitizations (both private and agency) are done through REMICs (pass-through entities that avoid double-taxation and allow tranching a loan pool), which are required to have a “static” loan pool. Previously, this requirement was interpreted as implying that modifications were in violation of a “static” loan pool. (In GSE pools, it has traditionally been the practice to pull the loans from the pool before modifying them,¹³ something the private pools were limited from doing because of dispersed ownership rights and capital requirements.) However, on May 16 of this year, the IRS issued Revenue Procedure 2008-28 clarifying the conditions under which a modification would not lead to a challenge of the REMIC status. Among other conditions, the real property securing the mortgage loan has to be owner-occupied and the servicer has to reasonably believe that there is a “significant risk of foreclosure,” the determination of which may be based on either guidelines developed as part of a foreclosure prevention program or any other credible systematic determination.
 - Likewise, one accounting issue that was thought to hinder modifications has been clarified. FASB created specific accounting standards FAS140 for any special-purpose entity that held securitized pools. If the rules are satisfied, the “transferors” of these assets may count the assets as off-balance sheet, so that no capital need be held against these loans and, in addition, the investors are assured of protection from any creditors of the underwriter/sponsor of the pool. To satisfy the requirements, the pools must consist of assets that are “passive in nature” such that “holding the asset or instrument does not involve its holder in making decisions other

¹³ The exception is Fannie Mae's new Homesaver Advanced modification program described above that makes all changes to the loan part of a separate promissory note Fannie puts on its own portfolio.

than the decisions inherent in servicing.” Although it was previously feared that modifications on loans before they were delinquent would disqualify a pool under FAS140 rules, the SEC issued a statement that modification of loans ‘in imminent default’ were permissible.

6. Problems when there are other stakeholders

A major impediment to refinancing and loss mitigation is the presence of junior liens, which appear to be more common among subprime than among prime mortgages. Senior lien holders generally require the holders of junior liens to affirmatively agree to substantive changes to mortgage terms. But junior lien holders are slow or reluctant to agree to changes before extracting the largest monetary concession they can because the value of their lien is often worthless in a foreclosure in today’s depressed housing market. Private mortgage insurers do not appear to be an impediment for modifications, but could be for executing short sales.

Junior liens

In contrast with past housing downturns, delinquent borrowers today often have at least one junior lien.

- It was not unusual to split up mortgages into a senior lien for 80 percent of a property’s value and a junior lien for the remainder.
- Among securitized subprime loans, the average LTV on loans originated without an associated junior lien was 80 percent, while the average LTV on loans originated with an associated junior lien was 99 percent (i.e. most loans with junior liens had an 80 percent first lien and about a 20 percent second lien).
- Many borrowers also obtained home equity lines of credit (HELOCs) after originating the first mortgage as a way to tap accumulated home equity.
- The share of subprime 2/28s originated simultaneously with an associated junior lien reached 30 percent and 35 percent in 2005 and 2006, respectively, up sharply from earlier years (see Table 5). The shares of subprime fixed-rate mortgages originated simultaneously with a junior lien are lower, 10 percent in 2005 and 14 percent in 2006. (Note that these figures do not reflect HELOCs or junior liens originated after the first lien and so understate the extent of junior liens.)

Table 5. Subprime Mortgages Originated with an Associated Junior Lien
(Percent)

Type of subprime mortgage	Origination year					
	2002	2003	2004	2005	2006	2007
2/28	2.3	10.0	18.6	30.5	35.4	19.9
Fixed-rate	1.0	3.1	6.0	10.4	13.6	5.4

Notes. Data from First American LoanPerformance ABS data and reflect subprime 2/28 loans only. A “2/28” is a mortgage with a fixed initial interest rate for two years which then converts to an adjustable-rate mortgage.

- Based on subprime mortgages outstanding as of May 2008, we estimate that 22 percent of properties with subprime loans had a junior lien at origination (Table 6). Of those seriously delinquent, the share of subprime loans with a junior lien is 31 percent. Again, the actual percent of such properties that currently have junior liens is likely much higher because borrowers can get a second mortgage from another lender at a later date.
- Credit bureau data, which would include information on other liens subsequently obtained, suggest that roughly 30 percent of all mortgages (prime and subprime) currently have an associated junior lien. The share of delinquent borrowers with a junior lien is certainly much higher.

Table 6. Delinquency Status and Presence of Junior Lien at Origination, May 2008

Delinquency status	Has a second lien			Percent with a second lien
	No	Yes	All	
Current / 30 or 60 days delinquent	2,105,787	507,742	2,613,529	19
Seriously delinquent	459,593	201,544	661,137	31
All	2,565,380	709,286	3,274,666	22
Memo:				
Serious delinquency rate	18%	28%	20%	

Notes. Data are from First American LoanPerformance ABS and reflect subprime loans only. Junior liens are only recorded if originated at the same time as the associated senior lien. Data do not contain open-ended liens such as HELOCs.

Significant changes to the senior lien may result in the revised lien being treated as a new lien; that is, modified loans can be treated like a refinancing. In such cases, in principle, unless the junior lien holder agrees to *re-subordinate* its lien, it becomes the senior lien holder. The actual extent to which senior lien holders are treated as subordinate when they modify loans without the junior lien holders' consent is unknown, but seems fairly rare. Indeed, the practice of subordinating modified senior liens appears related to state legal traditions and the applicable local case law. It may be the case that senior lien holders are overestimating the risk that courts will consider them as subordinate following a modification.

Nonetheless, given the legal uncertainties surrounding modifications, senior lien holders generally require the junior lien holder to affirmatively agree to subordinate their claim to the modified senior lien before agreeing to the modification.

- Newer liens usually have lower priority than older liens.
- Based on case law, courts may treat modified senior loans as newer than, and hence subordinate to, an existing junior lien. The extent of this practice depends on state legal traditions and previous findings by local courts. We have not found

- any instances in the current foreclosure episode of junior lien holders successfully promoting their claim over a senior lien holder, although many lawsuits have yet to work their way through the courts.
- Given the legal uncertainty regarding the seniority of their claim following a modification, senior lien holders are reluctant to undertake a major modification of a loan and then become junior to another lien-holder. In practice, senior lien holders generally require the junior lien holder to affirmatively agree to the modification by agreeing to re-subordinate.
 - Conversations with servicers indicate that the GSEs routinely paid junior lien holders to agree to re-subordinate. These payments ranged from \$1,000 to \$2,000 to as much as \$5,000 in some circumstances.

Junior lien holders have been slow and reluctant to agree to re-subordinate in this episode and have held up refinancings, modifications, and short sales.

- Servicers may not have the operational controls or experience to get second-lien lenders to agree to re-subordinate quickly.
- In today's depressed housing market, when a mortgage is being modified it is likely that the junior lien holder has essentially no equity; thus, a big part of the value of the lien is the ability to extract a payment from the senior lien holder in a workout.
- Sources at the GSEs indicate that junior lien holders have started demanding larger payments in order to agree to re-subordinate. This may be because junior liens are no longer always the traditional piggyback, but may be HELOCs with balances of \$50,000 or more.
- Traders indicated to us that, in the past year, prices for pools of delinquent closed-end subprime second liens were around 1 to 3 cents on the dollar, and prices for lower-rated tranches of securitized subprime second liens were in the same low range, between 0 and 5 cents.
- In the case of short sales, junior lien holders must agree to release their liens and take a loss. Servicers have reported instances where delays in resolving disputes between junior and senior lien holders results in prospective buyers of the property going elsewhere, forcing the loan into foreclosure.

The Hope Now servicer guidelines issued in June 2008 include an automatic re-subordination of second liens “when the second lien holder’s position is not worsened as a result of a refinance or loan modification.”

- “Not worsened” is understood to include: (a) a refinancing that does not increase the principal amount of the first lien by more than reasonable closing costs and arrearages, and no cash is extracted by the homeowner; or (b) a loan modification that lowers or maintains the monthly payment and no cash is extracted.
- However, PSAs for junior liens may have additional constraints that prevent servicers from following these guidelines in some circumstances.

Private mortgage insurance

Loan-level mortgage insurance may be used for GSE loans as a credit enhancement when there is less than a 20 percent down payment. It is less commonly found on non-agency subprime loans.

- In recent years, mortgage insurers began to provide insurance for selected portions of subprime pools, as opposed to individual borrowers, but this line of business appears to be small in size.

Mortgage insurers (MIs) pay claims to lenders if a loan defaults and the recovery value falls short of the unpaid loan balance.

- Insurance is typically written as a percent of the outstanding loan balance—a policy that insured 25 percent of a loan would cap their payout on a \$100,000 mortgage at \$25,000 plus allowed expenses. Insurance is only paid in cases where a claim is filed.
- Lenders submit claims on defaulted loans at the time they take title to the property.

Mortgage insurers do not appear to have an incentive to stand in the way of modifications, but may have an incentive to block short sales.

- In a loan modification where a lender forgives interest or principal and the borrower stays current, MIs benefit because such action delays or eliminates the time when MIs would have to pay off. If the borrower defaults later, the claim is based on *at most* the original loan balance (i.e., they would not pay claims on arrears that were added to principal in a modification above the original loan amount but might base claims on a written-down balance if debt were forgiven).
- In a short sale, MIs have guidelines and may not accept a proposal if the loss from the sale exceeds some specified amount, or they may demand proof of the borrower's inability to pay the difference between the sales value and the unpaid principal. They say they are managing moral hazard. Such situations are likely behind reports from community groups and others that MIs are blocking short sales.

MIs and junior lien holders seem to have similar incentives, but incentives actually differ.

- Both have subordinate claims on the underlying collateral, have the power to quash any proposed loan modification, and to lose from a foreclosure.
- However, the MI benefits from a first-lien modification that prevents, or even just delays, default. By contrast, the junior lien holder will likely have to re-subordinate in a loan modification, giving up his bargaining position.

7. How can servicer performance be improved?

Loss severity rates on subprime mortgage foreclosures are steep: all told, 50 percent or more of the outstanding mortgage balance has been lost in recent foreclosures. The foreclosure process itself involves significant liquidation expenses and foreclosed properties are typically sold at a substantial discount. These costs

constitute a deadweight loss that does not benefit the borrower or the investor, but instead suggests that both could be better off with loss mitigation. Some servicers do a much better job at minimizing loss rates given default than others—Moody’s (2001) reports that the difference in realized loss levels at good versus bad servicers can be as high as 20 percent. Options to improve servicer performance include supporting industry efforts to continue to improve borrower outreach and develop servicing guidelines, educating investors about loss mitigation, paying fees to servicers for completion of appropriate loss mitigation alternatives, and encouraging the development and use of an effective set of quantitative metrics of servicer performance. Servicers can be evaluated on preventing default, maximizing recoveries, and preventing re-defaults on home retention workouts. Legislative proposals to extend a safe harbor or impose blanket foreclosure moratoriums have some disadvantages.

Two goals of better servicer performance are to:

- Increase alternatives to foreclosure in cases when the borrower wants to and can afford to stay in his home under a loss mitigation scheme that simultaneously ensures that the lender is better off than he would be by foreclosing on the property. The high loss severity rates on properties that are sold in foreclosure benefit neither borrowers nor investors, suggesting mutually beneficial arrangements can be reached.
- Reduce the time that properties stand vacant when borrowers do not want to, or cannot afford to, stay in their home. Shorter time in vacancy will preserve home values and reduce current losses to investors as well as lower expected future losses in the market.

Policy options to promote better servicer performance are:

1. Continue to work with the servicing industry to develop best practices, including more expansive borrower outreach and standardization, to streamline the workout process, to lower the costs of workouts.
2. Educate more investors about loss mitigation.
3. Pay servicers for completion of appropriate loss mitigation alternatives.
4. Encourage investors to develop and use an effective set of quantitative metrics of servicer performance.
5. Legislation to provide a safe harbor or impose foreclosure moratoriums.

1. Continue to work with the servicing industry to develop industry best practices so servicers can effectively and efficiently provide workouts

- Most industry participants believe that pressure by the Congress, Administration, and regulators on servicers to establish industry guidelines and templates for loss mitigation alternatives has been helpful. The industry guidelines released by the Hope Now alliance in June 2008 address practices to improve communication with borrowers, promote possible loss mitigation options, and provide guidance on re-subordination of junior liens. The guidelines also serve to raise performance expectations and hopefully raise the quality of servicing of the poorer performers.

- More work needs to be done. Servicers need to continue to promote outreach efforts that improve contact between borrowers and servicers. Servicers need to continue to evaluate proposals to remove impediments and scale up some types of modifications, including working with F/F on pilot programs that can be expanded to loans in private-label pools. In doing so, they are balancing efficiency against case-by-case re-underwriting, a method they believe yields better outcomes because it is more personalized.
- In addition, the servicers need broader “buy-in” from investors, a very diverse group.
- They may also need the IRS, SEC and FASB to provide clarification and guidance about the permissibility of certain practices, such as whether a trust could write down a mortgage and create a new first lien with a soft second, and what legal documents would be required.

2. Educate investors about loss mitigation

- Servicers have indicated that apart from financial institutions and a few large investors, most investors are uninformed about loss mitigation.
- Investors are concerned that modifications may reduce their rates of return.
 - As noted earlier, they show little interest in paying fees to servicers for successful modifications, as is done by the GSEs. Some investors believe that the fees would encourage more modifications than would be justified based on the NPV test.
 - Even so, the American Securitization Forum is recommending that PSAs for future securitized pools allow for fees to compensate servicers for loss mitigation.
- Investors may not be aware of the substantial oversight of servicers by the GSEs, which could cause servicers to divert their scarce resources to do a good job for loans in GSE pools at the expense of loans in private-label pools.

3. Pay servicers for completion of appropriate loss mitigation alternatives

- Despite little interest from investors, fees to servicers on the order of \$500 to \$1000, about what is currently paid by F/F and FHA, should make a meaningful difference to servicers to offset loss mitigation overhead costs. The recent doubling of fees by F/F for modifications and short sales suggest that they believe it is important to provide meaningful financial incentives to encourage effective loss mitigation.
 - To address investors’ concerns that such payments would encourage too many modifications that simply delay rather than avoid foreclosures, servicers might need to present clearer evidence that the proposed workout option passes the NPV hurdle.
- We should note, however, that servicers generally were not enthusiastic about receiving fees. It is possible that the amounts being suggested would not be sufficient to induce more investment particularly when there are large fixed costs involved with additional staff or technology. Alternatively, enthusiasm for the proposal might be tantamount to agreeing that they, the servicers, were not doing their job. It also could be that some of the loss mitigation expenses are covered

by the late fees assessed to borrowers. Some servicers may also be resisting compensation because it may raise expectations for increased future workout volumes.

- Servicers did say that if fees were offered, they would much prefer them to be reportable as expense reimbursements rather than as compensation because of differences in the tax treatment of the two.
- Who would pay the fee?
 - Investors feel they already pay a higher fee to service subprime loans and likely would not be eager to pay more. This attitude might change were investors to come to the realization that there were too many foreclosures. Similarly, investors might be more likely to endorse fees if they thought that servicers diverted their scarce resources to loans in GSE pools because of payments and more active oversight.
 - Alternatively, parents of the servicer companies could pay. Most of the largest servicers are subsidiaries of depository institutions or investment banks, and the parents could manage the risk to their reputations by encouraging more modifications.

4. Encourage investors to develop and use an effective set of quantitative metrics of servicer performance

- Quantitative metrics of servicer performance may help to establish benchmarks and raise performance standards at all servicers. However, monitoring servicer performance is difficult because there are many dimensions and most investors do not have access to the information required to measure a servicer's performance.
- The Hope Now Alliance has been collecting survey data from the 27 participating servicers. The OCC and OTS have started requiring regulated banks and thrifts to report loan-level data on workout activities. These groups have reported on aggregate workout activity, but none provide information to evaluate performance across servicers.
- Data alone may not be sufficient to evaluate servicer performance because investors need to be able to separate performance from the credit quality of the loans being serviced. To do so, investors need to compare actual to expected performance, conditional on characteristics of the loans, state laws, and other factors. Quantitative models and/or more refined benchmarks to forecast expected mortgage performance should be developed.
- Moody's rates servicers on a number of dimensions, among them the effectiveness of a servicer at preventing default and at maximizing recoveries. Moody's also considers the financial stability of the servicer, including the ability to adapt to changing conditions. While financial stability is important for providing a rating for MBS securities, it may be less important for evaluating the efficiency of loss mitigation of existing mortgages, and so we will not discuss financial stability here.

Measures of success at preventing default:

- The rates at which loans move from one stage of delinquency to another (known as *cure rates* for loans that become current, or, more generally, *roll rates*)

- quantify whether a loan becomes current or proceeds to foreclosure. These rates are indicators of the servicers' involvement with borrowers and ability to help them become current.
- Credit Suisse, a private-label MBS arranger (and investor) has used LoanPerformance data on securitized subprime mortgages to compare the performance of subprime servicers. They report cure rates for loans 60 days past due that varied across servicers, from between about 5 and 10 percent in the 3 months ending May 2008.¹⁴
 - The share of seriously delinquent loans where the borrower has made at least two payments in the past three months is also an indicator of servicers' involvement with borrowers and ability to collect payments.
 - Credit Suisse (2008a) reports the percent of loans 90 days plus past due (excluding foreclosure and REO) with at least two payments in the past 3 months varied widely, from 5 percent to 30 percent across 24 servicers.
 - Freddie Mac uses a model, Early Indicator[®], to compare actual defaults to expected defaults on conforming loans that are 90 or more days past due to evaluate servicers.

Measures of success at maximizing recoveries:

- The length of the entire foreclosure process, from initiation to the disposition of REO properties, is an important determinant of recoveries. Less time spent in the foreclosure process reduces servicer costs and lost mortgage payments, and yields higher investor returns. However, investor returns may not increase with speed if speed is gained only by reducing sales prices. Faster speed also leaves less excess spread for investors in lower-rated and residual tranches.
- Moody's (2008a) argues that better servicers will put delinquent loans on a dual track for loss mitigation and foreclosure, so that delays in the foreclosure process can be minimized if loss mitigation is not successful.
- Foreclosure timelines can be split into two parts: the time from foreclosure start to REO and REO to liquidation. Because of differing state foreclosure laws, timelines should be compared by state. The first part will be shorter in non-judicial states than judicial states, where servicers are required to go to court to initiate the foreclosure process, (and servicer performance typically is compared to Freddie Mac-determined timelines by state).
- Moody's (2008a) reports that an average servicer takes about 60 days longer to move the foreclosure start on a subprime loan to REO status than it would take a more efficient servicer.
- From REO to liquidation, Moody's (2008a) reports that an average servicer takes 227 days, compared to 170 days for a strong servicer.
- Credit Suisse (2008b) reports wide variation across servicers in foreclosure timelines of securitized subprime loans.
 - For example, firms with faster procedures report that they liquidated about 55 percent of their properties in California in 8 months or less, while

¹⁴ Credit Suisse (2008a).

slower firms report that they liquidate less than 30 percent of their properties in California in 8 months or less.

- They also note that foreclosure timelines for liquidating 2006 vintage loans have increased notably over the past 12 months, which they interpret as evidence of strains on servicer capacity.

Measures of successful foreclosure alternatives and successful loan modifications

- Freddie Mac uses the ratio of foreclosure alternatives to the sum of these and REO sales, where a high ratio indicates more success in loss mitigation. In 2007, this ratio was 69 percent, with foreclosure alternatives totaling about 52,000 (38,000 were repayment plans) and REOs close to 23,000.
- A measure of re-default rates on subprime loans on home retention workouts is critical to understanding the effectiveness of servicers' efforts.
- As noted earlier, Cutts and Merrill (2008) report re-default rates on conforming mortgages of about 20 percent, albeit during a period of rising house prices, indicating potentially substantial payoffs from workouts of prime mortgages. A servicer of alt-A mortgages expected a re-default rate of 30 percent.
- Re-default rates on nonprime mortgages are even higher. Moody's (2008b) found that among loans modified in the first half of 2007, 42 percent were 90 days or more delinquent as of the end of the first quarter of 2008.
 - However, there were fewer than 5,000 loans that were modified in the first half of 2007, and most involved capitalization of arrearages or deferral of principal. They expect that the re-default rates on loans that were modified later in 2007 and early 2008 will be lower, because more involved an interest rate reduction and more were modified before they became seriously delinquent.

5. Two proposals that would require legislation that could have some short term benefits, but significant long term costs

- **A statutory safe harbor.** Some large servicers indicated that a statutory safe harbor for servicers that implement a NPV-positive modification plan would spur additional modifications by removing potential litigation risk.¹⁵
 - Most large servicers believe a safe harbor would lead to more modifications or would not hurt, especially if the services operate with PSAs that restrict some modifications. Servicers in favor are quite concerned that investors will perceive some modifications as being too generous to the borrower.
 - Smaller specialty servicers that specialize in non-GSE loans did not believe a safe harbor would affect their behavior very much.

¹⁵ For example, legislation reported out by the House Financial Services Committee on April 23, 2007 (H.R. 5579) would provide a safe harbor to servicers that modify residential, owner-occupied loans consistent with maximizing the net present value if, among other things, the modification does not result in negative amortization or require the borrower to pay additional points or fees. This legislation also would clarify that a servicer owes a duty to act in the best interests of all investors in the aggregate, not any particular party or group of parties.

- Investors were opposed to a safe harbor because they viewed it as an abrogation of private contracts, which could reduce the efficiency of capital markets in the future. They also pointed to the fact that lawsuits have not been common, loan-by-loan modifications are not especially susceptible to class action suits, and that servicers have considerable flexibility to choose assumptions in NPV calculations that favor the outcome they have selected.
- We believe that a safe harbor on its own would be of little value unless more specific guidelines for expansion of modifications were also developed.
- **Foreclosure moratoriums** have been imposed by some states. These are blanket bans on foreclosures of several months on servicers and lenders with the purpose of allowing more time for loan modifications to be negotiated.
 - In our view, a moratorium could help when loss mitigation is moving too slowly to avert foreclosure.
 - But a moratorium is a blunt tool to address a narrow problem; some, maybe many, foreclosures are not avoidable, and there are substantial costs to prolonging them. Losses on foreclosed properties increase as foreclosure timelines lengthen. In addition, moratoriums may lead all borrowers to think that foreclosure is a less potent threat, and thus lead to an increase in delinquency rates and less willingness to pursue workouts, exactly counter to the intent of the moratoria.
 - Servicers adopting Hope Now's June 2008 guidelines have agreed to delay the foreclosure process if it appears that a foreclosure alternative looks promising. This conditional delay in foreclosure is a more targeted approach to helping borrowers who are close to reaching a loan workout, and would work to minimize the increase in loss rates for foreclosed properties for which a loan workout is not completed.

References

- Brinkmann, Jay. 2008. "An Examination of Mortgage Foreclosures, Modifications, Repayment Plans and Other Loss Mitigation Activities in the Third Quarter of 2007." Mortgage Bankers Association (January).
- Capone, Charles. 1996. "Providing Alternatives to Foreclosure: A Report to Congress." U.S. Department of Housing and Urban Development (May).
- Conference of State Bank Supervisors. 2008. "Analysis of Subprime Mortgage Servicing Performance." (April 22).
- Credit Suisse. 2007. "The Day After Tomorrow: Payment Shock and Loan Modifications." Fixed Income Research Report (April 5).
- Credit Suisse. 2008a. "Subprime HEAT Update." (June 17).
- Credit Suisse. 2008b. "Deep Dive into Subprime Mortgage Severity." Fixed Income Research Report (June 19).
- Cutts, Amy Crews and Richard K. Green. 2005. "Innovative Servicing Technology: Smart Enough to Keep People in their Houses?" In *Building Assets, Building Credit: Creating Wealth in Low-Income Communities*, Nicolas P. Retsinas and Eric S. Belsky, eds. Washington, DC: JCHS/Brookings Press.
- Cutts, Amy Crews and William A. Merrill. 2008. "Interventions in Mortgage Default: Policies and Practices to Prevent Home Loss and Lower Costs." Freddie Mac Working Paper #08-01 (March).
- Eggert, Kurt. 2007. "Comment: What Prevents Loan Modifications?" *Housing Policy Debate* Vol. 18 no. 2 (March).
- Freddie Mac. 2008. "Single-Family Seller/Servicer Guide Bulletin." (July 31).
- Hagerty, James R. 2008. "Fannie, Freddie Do More to Prevent Foreclosures." *Wall Street Journal* (August 4): p. A3.
- Hope Now Alliance. 2008. "HOPE NOW Mortgage Servicing Guidelines." (June 9).
- Mason, Joseph R. 2007. "Mortgage Loan Modification: Promises and Pitfalls," SSRN Working Paper: <http://ssrn.com/abstract=1027470>. (October).
- Moody's Investors Service. 2001. "Moody's Approach to Rating Residential Mortgage Servicers." (January 19).

Moody's Investors Service. 2008a. "2007 Review and a Look Ahead to 2008: U.S. Mortgage Servicer Ratings." (February 8).

Moody's Investors Service. 2008b. "Moody's Subprime ARM Loan Modification Update," (July 14).

UBS Investor Research. 2008. "Mortgage Strategist." (August 12).