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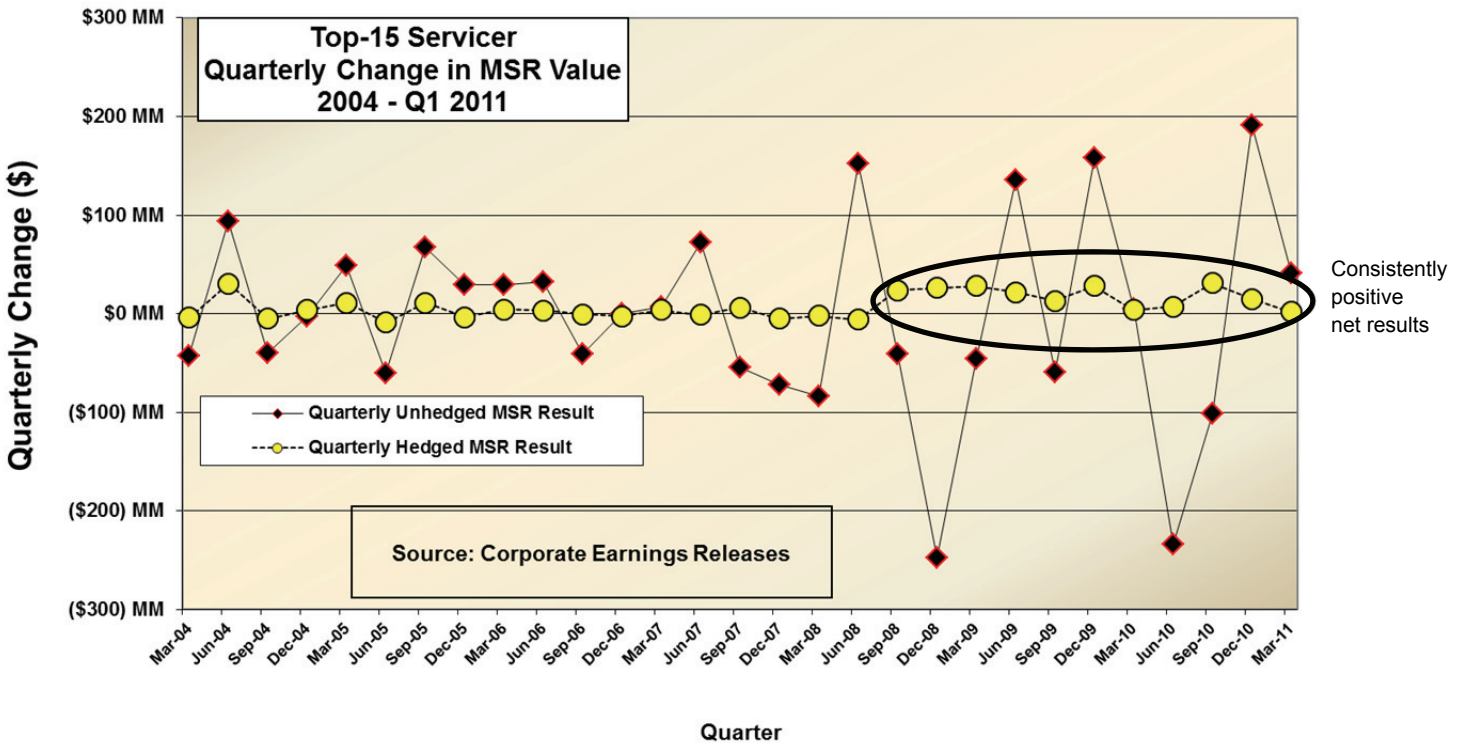
Tailwinds to Headwinds

MSR Hedging Performance Risks

Significant Tailwinds

Since the middle of 2008, Mortgage Servicing Rights (MSR) hedgers have posted historically strong results. Chart 1 illustrates the success achieved hedging MSR at a top-15 servicer. This servicer's performance has consistently been successful at reducing risk and, since Q3 2008, has produced consistently positive results (change in MSR value due to inputs and assumptions, net of change in hedge values). This consistency is the result of a well-designed and executed hedging program and is favorable when compared to peers, but it is also illustrative of a favorable market environment and overall industry performance.

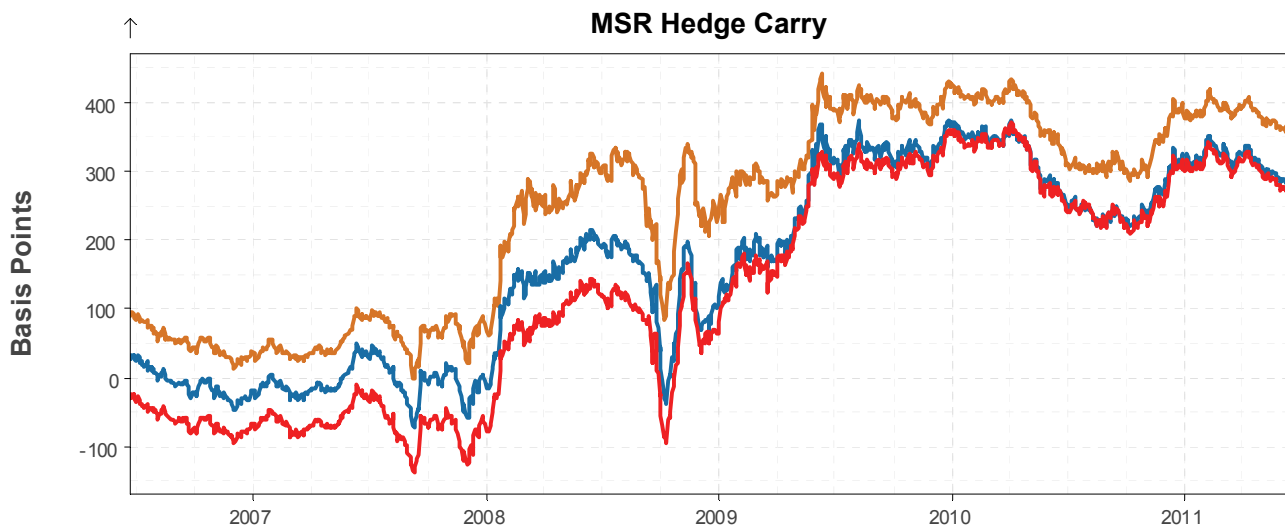
Chart 1



Several factors over the past 24+ months have contributed to the consistently positive reported MSR hedge results.

- A steep yield curve produced very positive carry in most hedges. On December 16, 2008, the FOMC cut the Fed Funds Rate to .25%, where it has been maintained ever since. In early 2009, the 3-month LIBOR fell below 1% and has been hovering at ~25bps for the last two years. Not coincidentally, the implied cost of financing on current coupon passthru and Treasury futures have from time to time been at or below zero: the implied financing rate on the Jul-Aug FN4.0 (as of June 14, 2011) roll was ~13bps. Chart 2 illustrates the steep carry curve. The steep curve produces very positive carry/roll-down on most of the typical hedge instruments and can mask unfavorable results associated with other aspects of the MSR performance, such as basis mismatch or negative convexity.

Chart 2

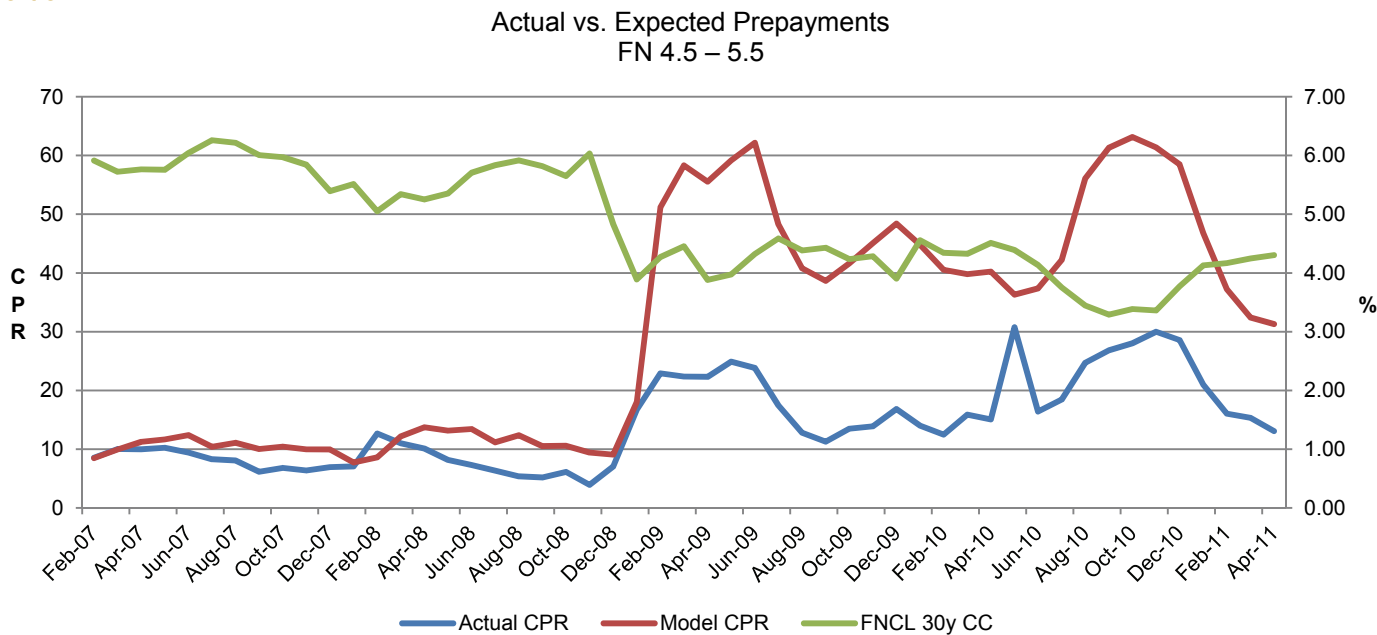


Key	Axis	Name	Last	Minimum	Maximum	Mean	SD	SD Change
—	Left	Mortgage CC Carry	365.688	-1.798 09/10/2007	442.648 06/10/2009	244.316	141.062	8.268
—	Left	10y Swap Carry	284.098	-72.681 09/10/2007	374.551 12/28/2009	167.234	139.600	7.857
—	Left	10y Treasury Carry	269.616	-138.078 09/10/2007	370.116 04/05/2010	131.367	160.022	7.460

Source: Barclays Live

- Convexity costs have been exceptionally muted.
 - Prepayment speeds have had reduced sensitivity. Since early 2009, rate-driven prepayments have consistently underperformed model expectations. Housing price depreciation and the impaired credit of many borrowers have prevented refinance waves similar to earlier episodes, despite historically low rates. Thus, even when consumers have had a rate-driven incentive to refinance, the economic impact on MSR values has been muted. Chart 3 illustrates actual prepays falling short of model projections.

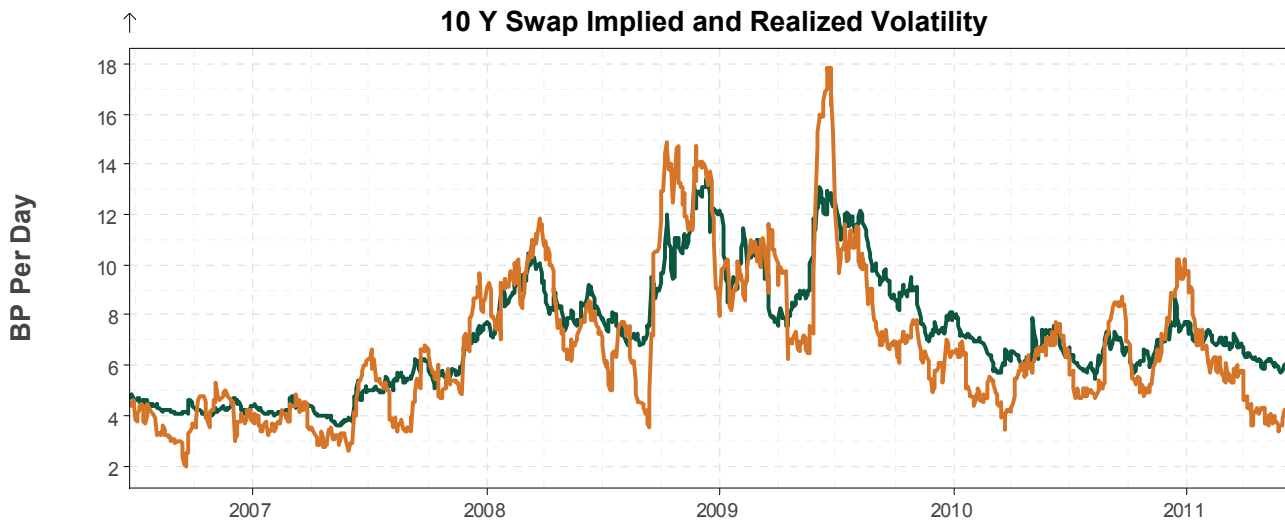
Chart 3



Source: Andrew Davidson and Company

- Interest rate volatility has also been declining, as illustrated in Chart 4. Since peaking in late 2008 and then spiking briefly in mid-2009, rate volatility has steadily declined. Recent readings of ~4 basis points per day are approaching 2006-2007 levels. Low interest rate volatility reduces cost due to duration rebalancing and subsequent market reversals (whipsaw costs).
- Because of the lessened impact of realized rate volatility, there is reduced need to rebalance hedges, and hedge managers have adapted by adopting a more passive strategy, designed to maximize carry through increased use of duration instruments and less reliance on options coverage. This produces a beneficial secondary effect on the MSR, as declining option implied volatility positively affects value in OAS models.

Chart 4

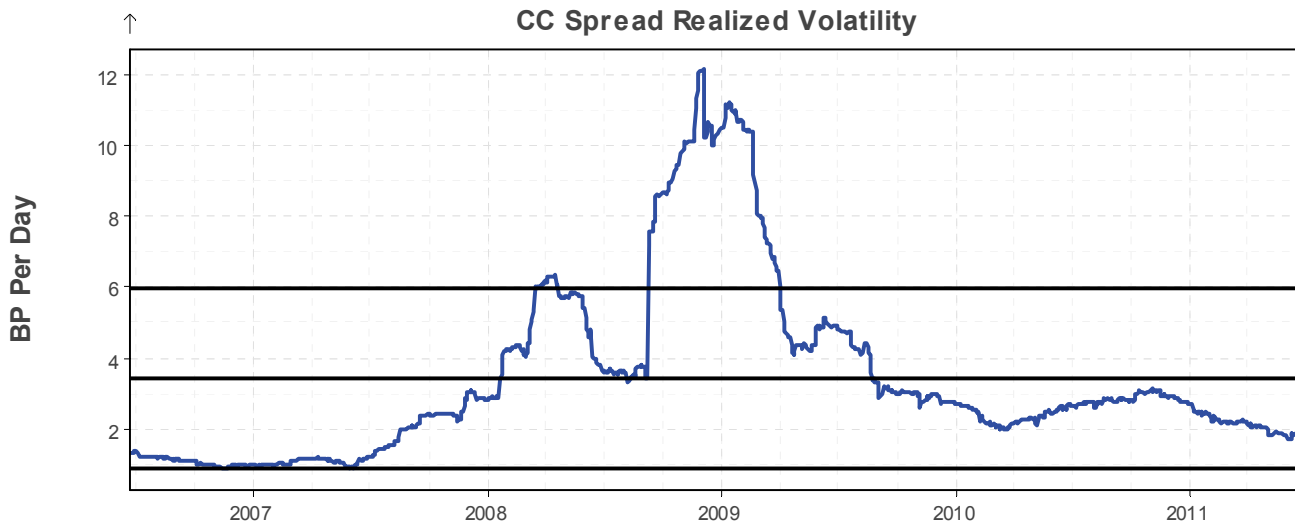


Key	Axis	Name	Last	Minimum	Maximum	Mean	SD	SD Change
—	Left	USD 3M 10Y BP Implied Vol	6.426	3.572 05/11/2007	13.397 12/12/2008	7.170	2.306	0.218
—	Left	1M RealizedVol	4.850	1.940 09/18/2006	17.874 06/18/2009	6.764	2.938	0.427

Source: Barclays Live

- Mortgage spreads have been relatively stable. In late 2008, the Fed began explicitly buying mortgages in an attempt to drive mortgage spreads narrower to spur the housing market. This initiative has largely failed in its primary goal, but has induced mortgage spread volatility to fall to very low levels, now at sub-2bp per day, as illustrated in Chart 5. Since most MSR valuation models incorporate a mortgage rate as a key driver of prepayment expectations, lower volatility reduces the need to readjust hedges, reducing convexity costs.
- A secondary benefit to MSR hedge performance has been more muted inter-coupon price volatility. Prior to 2008, positioning in the non-current coupon passthru would drive more volatile hedge results. In the recent two years, inter-coupon price volatility has declined significantly, as illustrated in Chart 6, reducing the risk associated with a mismatch of hedge coupons with the current coupon, improving effectiveness of up-in-coupon carry strategies.

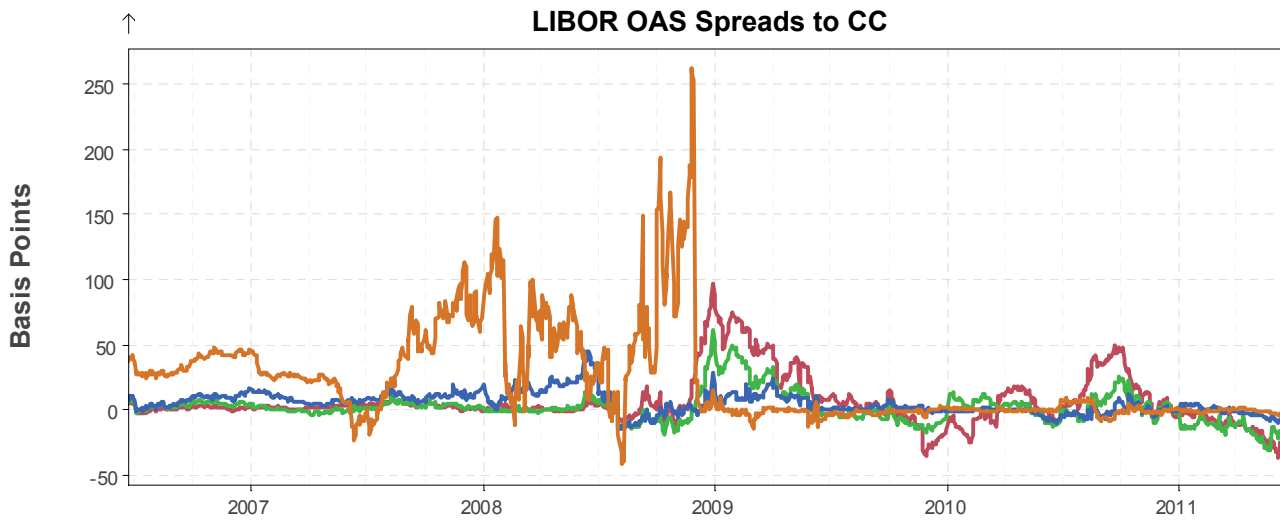
Chart 5



Key	Axis	Name	Last	Minimum	Maximum	Mean	SD	SD Change		
—	Left	basis realized vol	1.876	0.860	11/13/2006	12.184	12/03/2008	3.411	2.533	0.151

Source: Barclays Live

Chart 6



Key	Axis	Name	Last	Minimum	Maximum	Mean	SD	SD Change		
—	Left	LIBOR OAS Spread 5.5s to CC	-19.118	-36.010	06/07/2011	97.647	12/29/2008	6.190	18.814	2.703
—	Left	LIBOR OAS Spread 5.0s to CC	-12.939	-31.263	05/24/2011	61.340	12/29/2008	1.609	11.554	2.216
—	Left	LIBOR OAS Spread 4.5s to CC	-5.183	-13.955	08/05/2008	44.879	06/13/2008	5.262	8.206	2.027
—	Left	LIBOR OAS Spread 4.0s to CC	-2.508	-41.622	08/06/2008	262.689	11/25/2008	22.564	36.724	10.712

Source: Barclays Live

Tailwinds Become Headwinds

Market factors are certain to change drastically when (not if) the Fed moves from an essentially zero-rate policy and/or begins to unwind its >\$1 trillion MBS position. These changes will likely occur at a time when the economy is improving and will re-infuse the market, especially spreads and yield curve slope, with volatility. Some of the issues that will face MSR hedge programs are as follows.

- Increased realized rate volatility will expose ill-conceived convexity offset strategies. It is imperative now to develop and communicate the appropriate framework for navigating a volatile rate environment. Higher volatility is almost inevitable when the Fed re-introduces two-way rate risk.
- When the period of the “exceptionally low” Fed Funds Rate ends, short rates are very likely to rise relative to longer rates. This will reduce hedge carry and will have MSR value implications, since MSR in stochastic models has exposure to forward rather than spot rates. Simple duration offset and carry strategies will likely underperform as performance becomes less closely related to spot rates and carry no longer is able to mask volatility due to other factors.
- A normalization of the MBS markets, with the removal of the large, price-insensitive buyer, will increase spread volatility and likely cause inter-coupon spread volatility to re-emerge. Mortgage basis coverage will become more important, while simple up-in-coupon carry strategies may become less effective as a hedge offset.
- Predicting the re-normalization of the mortgage refinance function is more problematic than forecasting a return to more normal rate markets. However, with base turnover speed expectations in the 4-6 CPR range and the refinance function reduced by at least half, it seems safe that prospects for further benefit from lessening refinance sensitivity are limited. In 2008 and early 2009, as rate volatility made MSR hedging difficult, slowing prepay models proved a timely offset. By the time the models were calibrated, the steep-curve/low-volatility environment made MSR hedging less costly and more profitable. At a minimum, we expect no additional ongoing benefit from recalibration of prepay models.

How to Navigate

Challenges to MSR hedging results are very likely to re-emerge. The markets have masked many of the risks associated with this asset, but will probably begin to either exacerbate these risks or, at a minimum, cease to mask them. Therefore, it is now critically important that capital markets offsets are constructed with precision to minimize volatility of results, while optimized to ensure the best achievable returns.

Next Step

Call us. MountainView Risk Advisors has the expertise and experience necessary to properly manage an effective MSR hedge program at a cost favorable to the competition. Our management team has successfully managed MSRs for over 20 years, in “tailwind” and “headwind” environments, and can assist in all phases of the risk management process.