

## The Month in Review

September 2009

### What's New?

Check out this month's Topic of the Month - Part 2 of a 2 part series that started last month on **MSR House Price Appreciation (HPA) Sensitivity** and analyzes the impact that property valuation methods and forecasting have on valuing mortgage servicing rights (MSRs).

Compass is pleased to welcome back Bob Gundel as a Junior Account Manager! Bob left Compass approximately two years ago to travel, work hands-on in Secondary Marketing at a lender in Southern California and recently moved back to Northern California to pursue his MBA.

We look forward to seeing those of you going to the National MBA Conference next month in San Diego!

### New in CompassPoint™!

Compass is pleased to report its recent development progress in CompassPoint™, including:

- Global Position Benchmark UI/Reporting
- Pipeline Loan Trace Enhancements Including Tree Structure, Other Options
- Max Price Option added to MSR/WL CF Valuations
- Vected UPB Reduction Loan Modification Adjuster
- Loan-Level, Monthly Prepayment, Default, Severity Models
- Expanded OAS Path Cash Flow Export for OAS Diagnostics
- Stochastic Tiered Excess Discount Capability
- Option to Log User Logins/Logouts

CompassPoint™ features and capabilities reflect the business needs as defined and requested by its users. For additional information on new features or to submit suggestions and requests, please contact Rob Kessel at 415-462-7500 or e-mail at [rkessel@compass-analytics.com](mailto:rkessel@compass-analytics.com).

### Market Update

Following a month in which both the equity and bonds markets focused more on those reports that pointed to a strengthening economy, recent weeks have brought the term 'double-dip' back into the discussion. Equities fell from their recent highs and bond yields began to drop once again as the sustainability of the burgeoning recovery came into question.

Although job losses have slowed over the last few months, we still appear far from any real job growth. In addition, consumer spending remains subdued and without improvement there, hopes for a smooth

recovery will further weaken. Several manufacturing surveys have shown improvement, recently, but unless sales pick-up, this growth will eventually falter.

Outside of equities, the financial markets have shown heightened concern over another double-dip, this one in the real estate markets. In residential housing, another round of intermediate ARM resets is building and given the weakness in employment, another spike in foreclosures could be around the corner. Even with sales improving, inventories may push higher in coming months. Prospects in the commercial real estate sector may have nowhere to go but down for at least the intermediate term as a lack of financing and sky-high vacancy rates point to more losses down the road.

On the brighter side for mortgage lenders is the recent drop in rates. While certainly not to the levels seen earlier in the year, mortgage rates have come down to the point that lock volumes have started to respond. With the 10-yr treasury yield dipping back below 3.50%, and renewed uncertainty creeping through the housing market, we may see better volumes and margins at the end of summer than the beginning of summer seemed to point to. *—Lindsay Hill*

## Topic of the Month: MSR HPA Sensitivity Analysis – Part 2

In last month's Compass Corner, we introduced the concepts behind how housing values and housing value forecasts ("HPAs") impact the valuation of mortgage servicing rights ("MSRs"). By reviewing a traditional cash flow function and mechanics of mortgage servicing, we pointed out several cash flow components that are impacted by HPA, namely prepayment speeds and servicer advances/expenses associated with non-performing loans. We discussed the challenges modelers face in formulating and translating assumptions into model adjustments to appropriately reflect realistic impact of HPA in models. And finally, we promised in this month's Compass Corner to try our hand at doing just that and providing some measures of HPA sensitivity in the process.

We start with HPA impact on prepayment speeds and consequently MSR valuations. First, let's differentiate between voluntary and involuntary prepayments. Voluntary prepayments are refinances and home sales, involuntary prepayments are defaults leading to foreclosure. For this exercise, we'll assume that voluntary prepayments *increase* as HPA assumptions are relatively more positive than baseline, i.e. house values are expected to rise more than predicted, prompting more housing turnover. We'll also assume involuntary prepayments rise as property values *decline* relative to baseline, leading to less or negative equity in property values. As a corollary to HPA induced defaults (and involuntary prepayments), we expect servicers expenses to rise as loans go into default. Servicers must make advances to the investor, taxing authority and insurance company, make calls to delinquent borrowers, implement loan modification efforts, initiate legal proceedings and ultimately manage property disposition. As noted last month, model assumptions bake in baseline assumptions about HPA prepayments so any HPA impact to MSR values will be due to HPA forecasts *different* than those already incorporated in baseline assumptions.

Turning from the business logic to implementing model adjustments, let's try the following:

Prepayments speeds, expressed as CPR for annual prepayment rate and SMM for single monthly rates might be adjusted as follows:

HPA-Adjusted SMM(i)<sub>(Voluntary)</sub> = Original SMM(i)<sub>(Voluntary)</sub> + HPA Increase(i) where i represents the month of the future payment and HPA Increase would be the percentage the new HPA Forecast exceeds the original HPA forecast. In addition, we put a 4% SMM floor in place. See Table I, which illustrates the change in prepayment speeds this simplistic model would imply if HPA forecasts improved:

Delinquency and Default rates are also expressed in percentages of the portfolio, and here our modeling would be more realistic by considering how HPA changes to impact the future LTV, or equity, a borrower has in his or her home. However, to keep things simple for this exercise, we'll express HPA impact on delinquency as follows:

HPA-Adjusted Delinquency Rate (i,d) = Original Delinquency Rate (i,d) \* ((HPA Increase(i)/20)-1) where d refers to the delinquency status, including 30-Day, 60-Day, 90-Day, 120-Day and Foreclosure and i represents the month of the payment again. In this oversimplified formula, delinquency rates would be cut by 50% for HPA forecasts 10% over baseline and delinquency rates would increase by 50% in 10% HPD scenarios. See Table I for more examples.

**Table I: Hypothetical HPA Impacts on SMM and Delinquency/Default Rates**

Months	0-12	13-24	25-36	37-48	49+
HPA Increase	0	5	10	10	10
Baseline SMM	6	10	15	15	15
Adjusted SMM	6	15	25	25	25
Baseline Delq.	4	8	12	12	10
Adjusted Delq.	4	6	6	6	5

So what impact will different HPA forecasts if we employ our hypothetical models discussed above? Using CompassPoint™'s MSR model, new agency production and otherwise standard industry assumptions, we implemented the simplistic assumptions above and derived the following MSR value (price in %) sensitivity to HPA, first considering prepayments alone and then considering HPA impact on prepayments and delinquency and default behavior. Table 2 below summarizes the results:

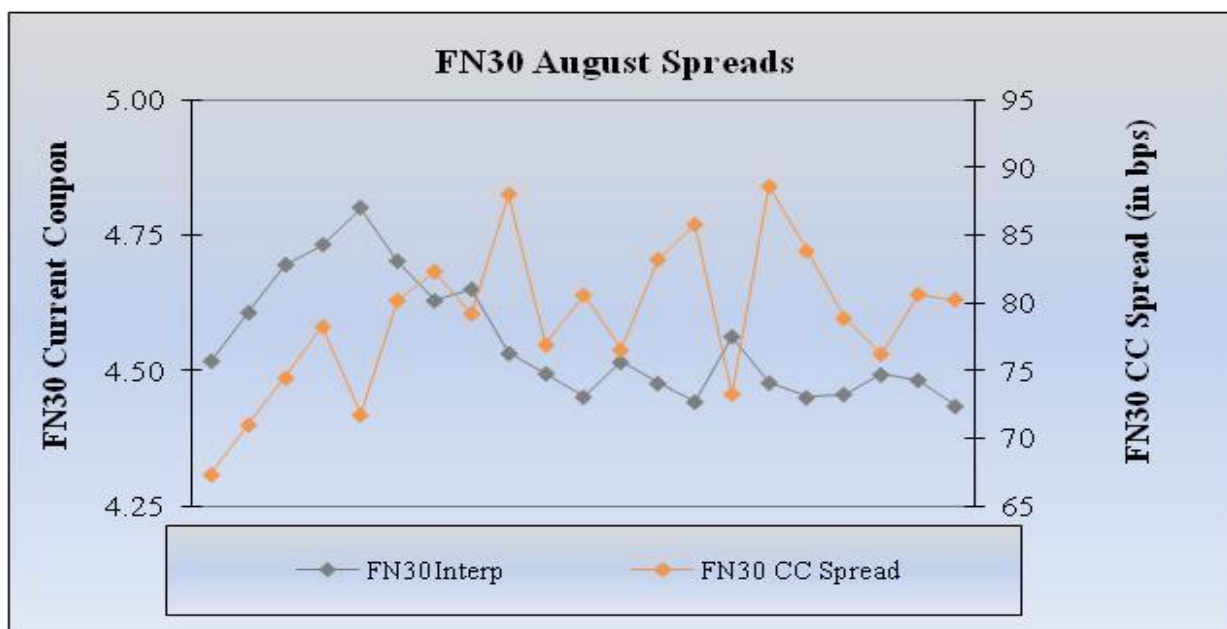
**Table 2: Sample HPA Impact on MSR Prices (%)**

HPA Scenario	1) SMM Alone	2) SMM w/Delq.	2) % Change
-10	1.44	1.33	21%
-5	1.37	1.32	20%
Unch	1.10	1.10	0
5	0.94	0.96	-13%
10	0.82	0.86	-22%

Interpreting the results above demonstrate that when HPA deviates from baseline assumptions, MSR values can change appreciably. With our simple assumptions, the results indicated that HPA impact to voluntary prepayments significantly outweighed any credit impact. However, these results are dependent on the collateral modeled – in this case agency loans. Whereas we oversimplified HPA/Prepayment and Delinquency relationships in this exercise, it is incumbent upon analysts to translate changes from HPA baselines into meaningful model adjustments that appropriately modify prepayment and delinquency assumption given their portfolio composition and the current marketplace. This analysis would necessarily disaggregate a portfolio by product type, performance and MSA and other variables to express HPA exposure on a more granular basis. Analysts will need to run HPA scenario analysis frequently as HPA and market conditions change and regularly update their portfolios' loans' current property values so as to more accurately derive a future LTV moving forward, a task well suited for Radar Logic Prices. Another goal will be to unearth what HPA assumptions are already built into the prepayment and delinquency models employed by the analyst so changes from baseline assumptions may be more explicitly identified. Finally, once MSR HPA sensitivity is confidently modeled and disaggregated, MSR investors can contemplate hedging MSR HPA risk with derivatives such as RPX derivatives, using their modeled MSR HPA sensitivity to derive appropriate hedge notional. –**Rob Kessel**

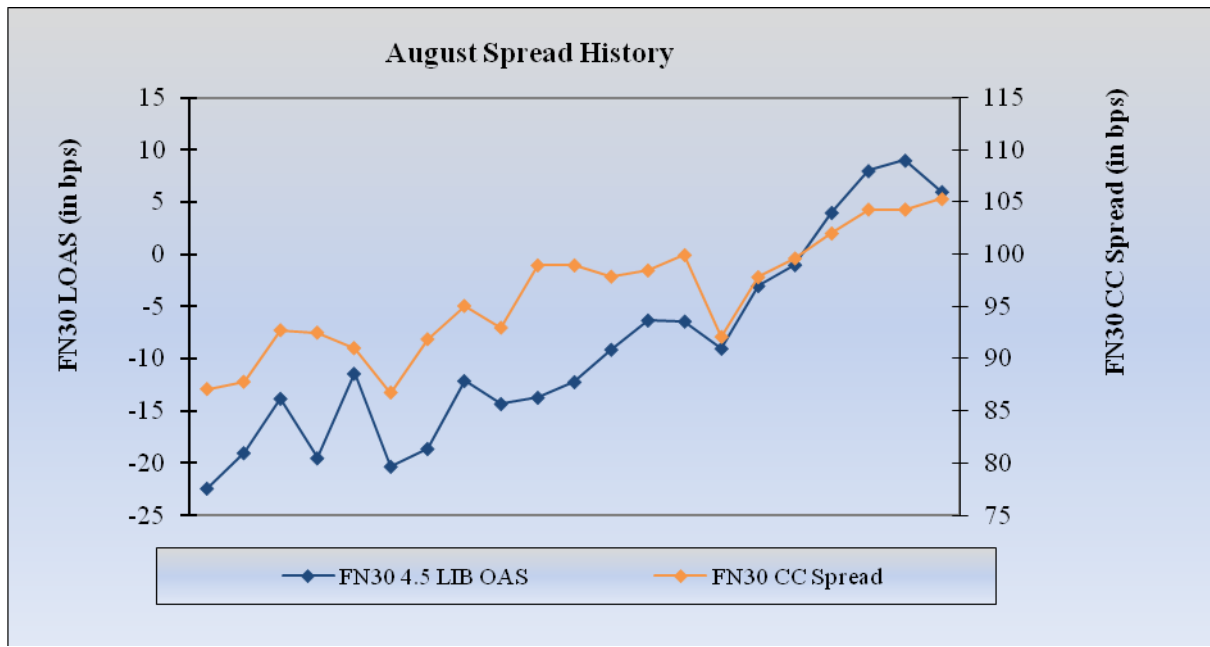
*This article was originally written for Radar Logic's monthly newsletter, to see the newsletter in its entirety, please visit [www.radarlogic.com](http://www.radarlogic.com).*

## Margin Tracker



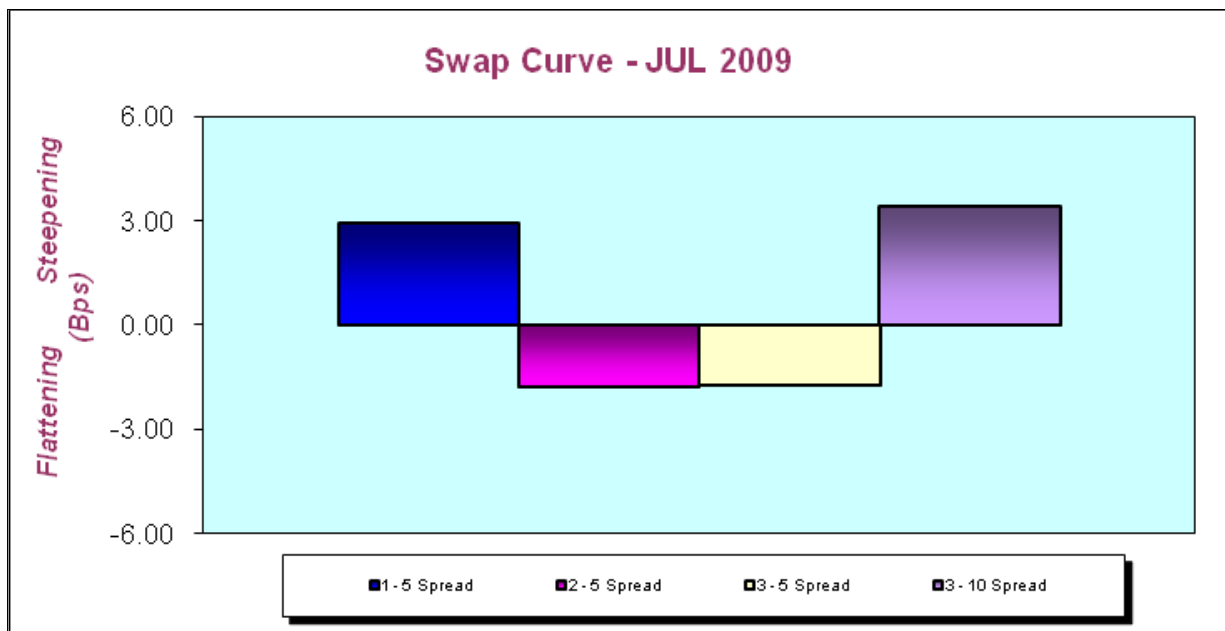
The FN30 CC Spread is the difference between the FN30 Note Rate and the FN30 Current Coupon, in basis points. The FN30 NR is the average conventional note rate across a subset of Compass's client base normalized for volume. The FN30 CC is the Fannie 30-year Mortgage Backed Security yield at par 30 days out. The difference between these numbers gives an indication as to how much margin is priced into the secondary market. The primary factors are interest rates and warehouse line constraints. Lenders may also be slower to improve rates during a rally, and quick to drop their pricing during a sell-off. During August, there was a 21bp peak to trough differential. Shown in the chart above, during the first week of the month, rates were at relatively high levels than in the last six months. This induced a tightening of margins to about 67bps to increase lock volume. When the market rallied towards the middle of the month from 4.75% to 4.50%, margins gapped out to 90 bps as lock volume jumped with the lower rates. *-David Bennett*

## Monthly Spreads



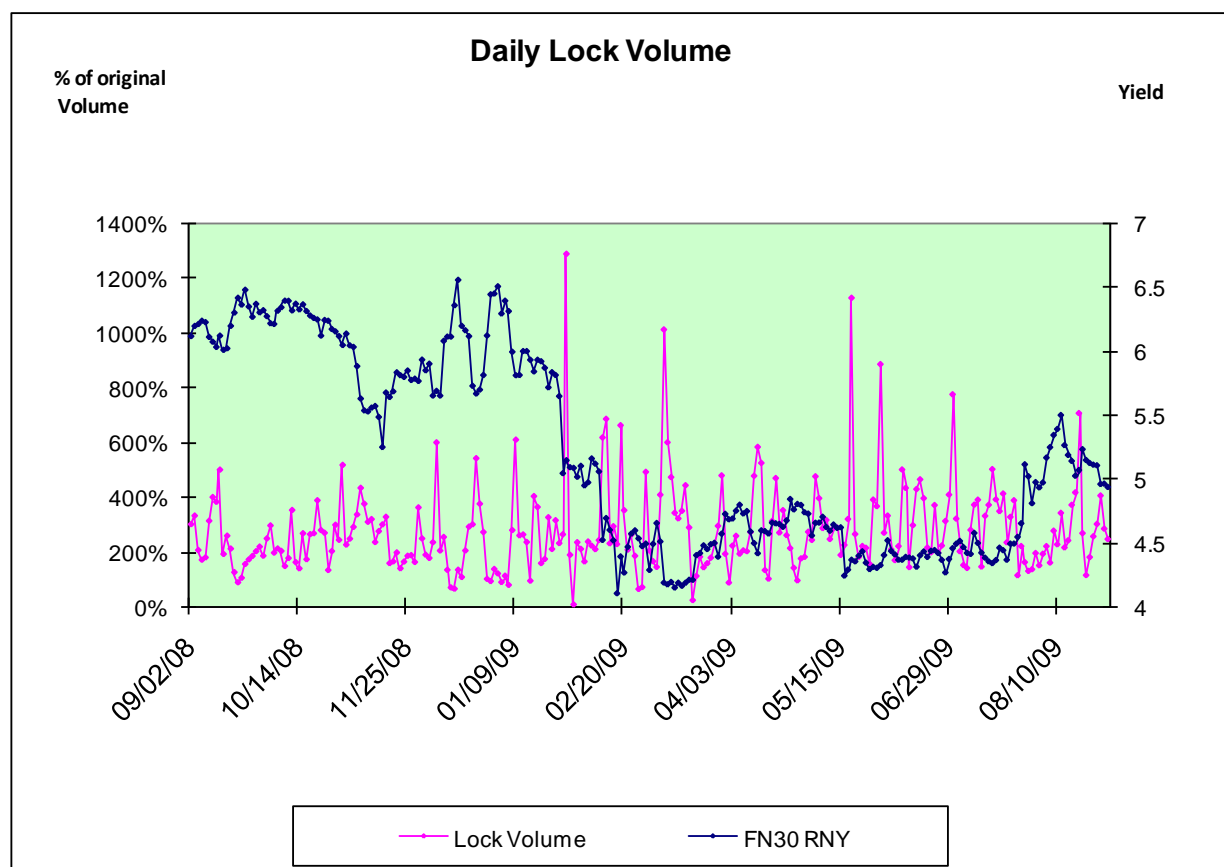
FN30 Current Coupon spreads widen out early this month then tightening towards the latter part of the month. Treasuries 2-10's at 242bps were unchanged from the previous month end. *-Glen Brown*

## Swap Curve Analysis



August turned out to be relatively quiet and range-bound as the dog days of summer took hold. The LIBOR/Swap curve shifted lower in near parallel fashion, finishing the month slightly steeper as the decline in the one year LIBOR yield outpaced the fall in yields across longer tenors. The 1-10 LIBOR/Swap spread widened about 5 bps to 229 bps. *-Virgil Caselli*

## Production Index



Production in August decreased while rates traded in a wider range (34bp range in August versus 31bp in July), with the average yield increasing month over month. Average volume for the month was 239% of our base volume (vs. 252% in July) ranging from a low of 124% to a high of 408%. The average yield on the FN30 RNY in August was 4.93% (vs. 4.94% in July) ranging from a low of 4.83% to a high of 5.17%. **-Brandon Case**