United States

The Mortgage Analyst

Credit Strategy Research

Drivers of the mortgage basis

Mortgage spreads are at 1st percentile levels vs. 2001-2014 range

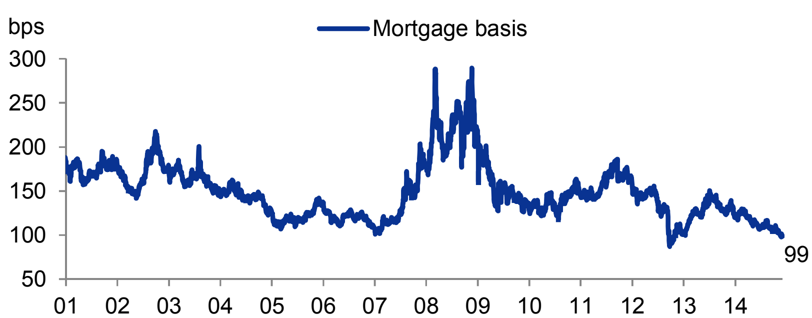
Spreads between agency current coupon mortgage rates and US Treasury rates are at very tight levels vs. history. The mortgage vs. Treasury rate basis – defined as the spread between par mortgage rates and a blended 5/10-year Treasury rate - started 2014 at 120 bp and has since tightened to 99 bp, a 1st percentile level relative to the 2001-2014 history and 50 bp tighter than the average during 2001-2007.

Slow prepays can explain 15 bp of basis tightening

One factor driving mortgage spreads tighter is the decline in refinance rates caused by tight credit standards. Slow refi rates reduce mortgage negative convexity, thus reducing the yield investors requirement to hold MBS. On the other hand, slow prepays also lengthen current coupon mortgage durations, which raises required yields given an upward sloping yield curve. All-in, slow prepays explain 15 bp of the tightening in the mortgage basis. We view basis as 10 bp tighter than expected given fundamentals.

The mortgage vs. Treasury rate basis is currently at a 1st percentile level compared to 2000-2014 history

Spread, current coupon mortgage rate vs. blended 5/10-year Treasury rate



Source: Goldman Sachs Global Investment Research

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Mortgage basis at historically tight levels

Spreads between current coupon mortgage rates and US Treasury rates are at very tight levels vs. their history. The mortgage vs. Treasury rate basis started 2014 at its 20th percentile relative to its range over 2001-2013, and has since tightened to the 1st percentile, with the basis now 50 bp tighter than the average during 2001-2007 (Exhibit 1).

There are a number of factors which potentially help explain the currently tight mortgage basis:

1. Prepay speeds are slower than historically, due to tight lending standards. In Exhibit 2 we show prepay rates vs. refinance incentive during 2003, 2012 and 2014: borrowers with 100-200 bp incentive prepaid at 72 CPR in 2003 vs. 23 CPR in 2014.

2. Implied and realized interest rate volatilities are low. In Exhibit 3 we show that 3m10y swaption volatility rose briefly during the October flash crash period, but has returned to low levels: 4.5 bp/day vs. 6.6 bp/day during 2000-2007. MBS under-perform Treasuries in large rate moves up or down, but the low rate volatility indicates that the market-implied probabilities of such wing scenarios are low.

3. The Federal Reserve continues to retain over 30% of outstanding MBS, via acquisitions made during the Quantitative Easing asset purchase program, thus providing a supportive supply technical.

Understanding the contributions of these factors to the currently tight mortgage basis is useful because their forward trajectories are likely different. For example, if tight spreads were caused primarily by Federal Reserve flow purchases, then we should expect spreads to widen going forward as monthly principal reinvestment volumes decline. We find that slower prepays reduce negative convexity, which should in turn reduce mortgage yields. However, slower speeds also lengthen durations, which should lead to higher mortgage yields. On net, we find that the convexity effect is stronger, so that slower prepays explains 15 bp of the tightening in the mortgage basis relative to pre-crisis levels, less than one third of the total spread tightening.

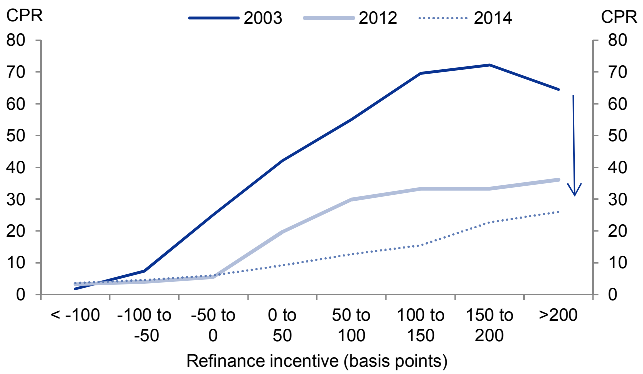
All-in, after accounting for changes in prepays, we view the basis as slightly but not grossly too tight, and would look to a 10 bp widening over the next year.

Exhibit 1: The mortgage basis is currently near historic lows

Spread, current coupon 30-year mortgage rate vs. blended 5/10-year Treasury rate

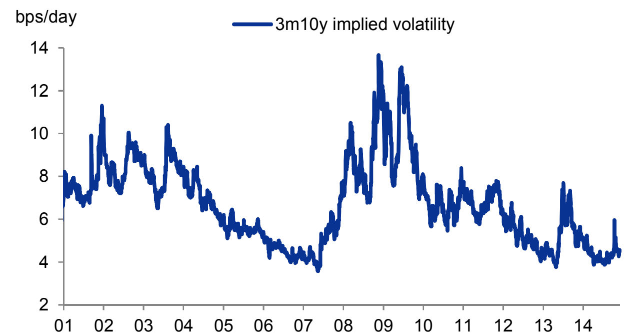
Source: Goldman Sachs Global Investment Research

Exhibit 2: Refinance rates have become more benign since the GFC…
Prepayment rate vs. refinance incentive, 30-year fixed rate conventional MBS, 18-60 months weighted average loan age



Source: eMBS, Freddie Mac and Goldman Sachs Global Investment Research

Exhibit 3: …and interest rate volatilities have returned to low levels since the flash crash
3m10y swaption implied interest rate volatility



Source: Goldman Sachs Global Investment Research

Slow prepayments explains 15 bp of basis tightening

The decline in refi responsiveness since the Global Financial Crisis (GFC) has substantially changed the relationship between interest rates and MBS prices. In the pre-crisis period, when refi rates were high, prices on MBS seldom traded above $106 when rates fell, since borrowers could easily pay back their mortgage at par and trade into a new, lower rate mortgage. By comparison, during 2013-2014, deeply premium TBAs traded above $112, as in-the-money borrowers persistently failed to refinance. In Exhibit 4 we compare the price/yield relationship in 2003-2004 vs. 2013-2014, highlighting the substantial change in behavior. The greater upside in prices now, all else equal, makes MBS a more attractive investment and potentially justifies tighter mortgage vs. Treasury spreads.

However, the slowdown in refi speeds comes with downside implications too, since the slower expected prepay rates lead to longer current coupon durations. Given an upward sloping yield curve, longer durations should lead to a higher required mortgage rate, all else equal.

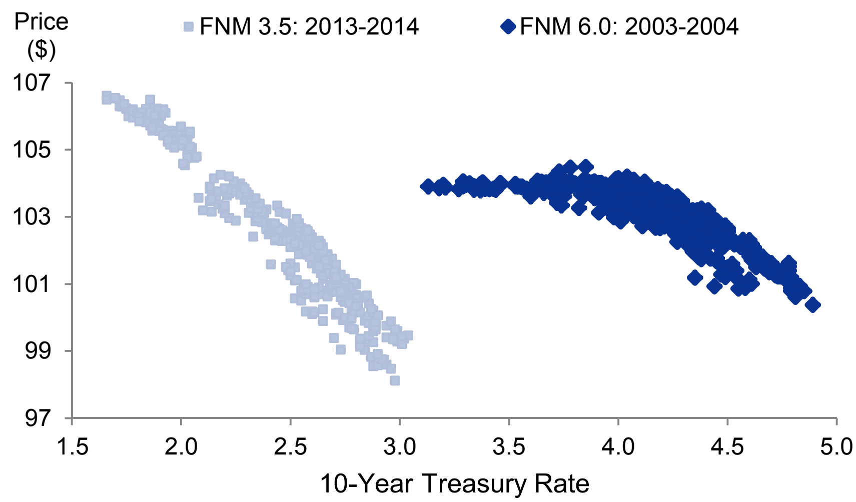
In Exhibit 5 we show the option adjusted duration of a 30-year current coupon mortgage, which is currently around 7 years but was previously 5 years or lower. The 7-year duration is what justifies the common use of a blended 5/10-year Treasury rate as the benchmark for computing the mortgage basis, but Exhibit 5 suggests that a shorter maturity Treasury would be more appropriate for earlier periods.

In Exhibit 6 we compare the static basis (using a 5/10-year blended Treasury rate benchmark) with a “duration-adjusted” mortgage basis, computed using the interpolated yield of the Treasury bond that matches the MBS duration in each period. The current duration-adjusted mortgage basis is 90 bp tighter than the 2001-2007 average, suggesting even more dramatic tightening than is seen in the mortgage basis calculated using a fixed maturity Treasury benchmark.

The slowdown in prepayment rates improves MBS valuations by creating more upside in rate rallies (Exhibit 4), but hurts MBS valuations by lengthening duration (Exhibit 5). To assess the net impact on valuations, we run current coupon mortgage valuations, using both a model calibrated to recent prepay patterns, and an adjusted model reflective of older historical prepay rates. Under the baseline model a FNM 4.5 TBA is projected to prepay at 25 CPR in a 100 bp rate rally, vs. 65 CPR in the adjusted model.

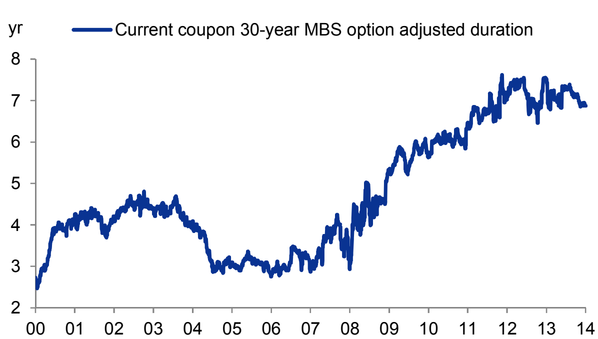
The slower prepays in the baseline model translate into 15 bp improvement in option adjusted spread vs. the model calibrated to 2001-2007 prepay experience. This 15 bp tightening captures the net effect of tightening due to improved convexity, along with the widening pressure coming from a longer duration. Thus, less than half of the tightening in mortgage spreads since 2001 is explainable by the more benign recent refinance environment. This suggests that if an upside surprise in prepay rates is observed, while it would lead to a substantial repricing of premium MBS, it should not lead to a massive widening of the current coupon mortgage basis.

Exhibit 4: MBS price vs. rate relationship has changed substantially over the past ten years due to slower refinance rates
MBS price vs. 10-year Treasury rate level



Source: Goldman Sachs Global Investment Research

Exhibit 5: Durations on current coupon MBS have increased over time due to slower refinance rates
Current coupon 30-year MBS option adjusted duration



Source: Goldman Sachs Global Investment Research

Exhibit 6: Duration adjusted mortgage basis looks substantially lower than 2001-2007 levels
Spread, current coupon mortgage rate vs. duration matched Treasury rate, and vs. blended 5/10-year Treasury rate

Source: Goldman Sachs Global Investment Research

Outlook for the mortgage basis

Multiple factors contribute to the currently tight mortgage basis vs. historical levels, including a benign refinance environment, low implied interest rate volatility, a slow growth in MBS issuance compared to Treasury issuance volumes over the past six years, and the substantial holdings of MBS by the Federal Reserve.

We expect refinance rates will continue to remain relatively subdued in the medium term, with tight mortgage lending standards normalizing only slowly. Similar to 2014 we expect a low volatility, carry-friendly environment, which should be supportive for spread products. Given our expectation of rising yields, though, the total return potential for MBS will be limited. Overall, we look for 10 bp of widening in the basis during 2015, as spreads mean revert toward more historically normal levels.

Marty Young and Spencer Rogers

Disclosure Appendix

Reg AC

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