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How Can MSR Hedging Help My Institution Maintain Profitability as Rates Fall?

Many institutions have experienced significant decreases in the value of their Mortgage Servicing Rights (MSR) assets recently, making MSR hedging a timely topic. Over the course of 2019, the yield curve has significantly decreased and flattened causing primary mortgage rates to fall. This has caused an increase in prepayment and refinancing activity, which is currently at a two-and-a-half year high, and has led to decreases in MSR asset values.

Evaluating MSR Hedging

When considering whether to hedge an MSR asset, the first step is understanding why the asset itself is so sensitive to changes in rates. MSR assets can be likened to interest-only (IO) strips. MSR assets derive their value from the stream of servicing fees of the underlying mortgages. This is similar to IO strips, which derive their value from the interest payments of the underlying loans. Due to this structure, the longer the life of the underlying loan, the higher the value of both MSR assets and IO strips. When interest rates fall, and the incentive to refinance increases, the value of the asset decreases significantly due to the shortening of the income stream with no offsetting principal effects. In addition, MSR assets typically exhibit negative convexity, so as interest rates fall the value of the asset decreases at an increasing pace.

Next, the institution needs to ensure a sound framework is in place to evaluate risk. This includes having accurate measures of effective duration, partial (key rate) duration, convexity, and spread duration. Essentially showing sensitivities to parallel shifts in rates, the slope of the curve, and changes in spreads. Accurately quantifying risk allows the institution to create a hedge that offsets its risk.

Exhibit 1 shows a sample MSR portfolio. In this MSR, the base effective duration is -60%. This means that if rates are to decrease 1%, the value of the MSR would decrease by 60%. In dollar value, if the base MSR value is $20 million, this would equate to about a $1.13 million loss in a down 10 basis point shift in rates. In the current market environment, with significantly lower rates, MSR values have decreased sharply and durations have extended to the point where a negative 60% effective duration is not uncommon.

Exhibit 1

MSR Base Profile	
EffDur	-60.00
EffCnvx	1.25
AvgLife	4.04

Exhibit 1

Shift (Bps)	-30	-20	-10	0	10	20	30
Market Value (,000s)	$ 16,490	$ 17,730	$ 18,860	**$ 20,000**	$ 21,150	$ 22,290	$ 23,420
Δ Base	$ (3,520)	$ (2,277)	$ (1,144)	**$ -**	$ 1,147	$ 2,287	$ 3,413

Choosing the Right Approach

While hedging approaches can vary, strategies typically focus on hedging delta and duration risk. Frequently hedge positions used are a combination of U.S. Treasury futures and mortgage backed securities to achieve a delta-neutral status. The goal of delta-neutral hedging is to completely offset a value change in the hedged instrument given changes in rates by pairing with a hedging instrument that moves in the exact opposite fashion. This can be done through measuring the DV01 of the portfolio, which is the dollar value change of the MSR asset due to a one basis point changes in rates. Then, an appropriate hedging instrument is chosen to compliment/offset the value change of the asset. Due to the volatile nature of the MSR, rebalancing may be required and is prompted either by an updated sensitivity profile or a significant move in interest rates. Typically, a target effective hedge ratio is put in place and managers rebalance in order to maintain the coverage ratio.

Exhibit 2 shows the effective coverage ratio, and the mismatch between the MSR DV01 and the DV01 of the Hedge ratio. The current ratio is 90%, which means the hedged instrument gains in value 90% of what the MSR asset loses in value.

Exhibit 2

Effective Coverage		MSR DV01	Hedge DV01
Percentage	90%	-100,000	90,000

Evaluating Performance

The final step of hedging the MSR asset is evaluating performance, which should be measured by risk mitigation or the offset effectiveness. In a perfect hedge, there would be total elimination of risk, but that is rare in practice. Typically, there are variations in asset correlation. This can be measured ex-post using statistical analysis such as R^2. There should also be an element of cost control in the hedging program; it should be cost efficient compared to other alternatives options.

MSR assets can be very profitable, but it is important to be cognizant of the risks they present. An unhedged MSR asset can be very risky and cause unwanted capital losses, making hedging a valuable option for many institutions. While hedging strategies have their own costs, due to the complex models required, managers must have a sound analytical framework in place in order to effectively offset the risk. When done effectively, MSR hedging can protect an institution from capital losses and help maintain profitability during rate shifts.

Ready to take the next step? Contact your ALM First representative today to discuss MSR Hedging, or reach out to our team of experts at info@almfirst.com to schedule a call.