

Valuation Commentary – April 08

Six Myths of Credit Valuation

By Alex Levin

In recent months, AD&Co has been asked to help firms understand and manage risk relating to credit-sensitive MBS, both in the US and abroad. While it is not always easy to explain the market's rationale in times of panic or stagnation, we warn investors not to be misguided by some common myths that have surfaced.

Myth 1: Market prices of MBS and ABS reflect expected losses

“The market prices our portfolio to x% of losses. What does the LDM predict?” We have been approached with this exact question and it suggests, in itself, that the direct loss levels obtained from the LoanDynamics™ Model (LDM) can be employed to rationalize MBS prices.

First, the LDM gives us only projected losses for a market scenario given interest rates and home prices. The market certainly considers volatility and scenarios that are worse-than-average. Second, even the averaged outcome will be insufficient if we don't consider the price of risk. In scientific terms, the interest rates and home prices have to follow “risk-neutral dynamics.” Third, today's non-agency MBS market is not liquid and the liquidity premium is a big part of valuation.

In symbolic terms,

$$\text{Price (perfect MBS)} - \text{Price (actual MBS)} = \\ \text{Real-World Expected Loss} + \text{Risk Premium} + \text{Liquidity Premium}$$

The sum of Expected Loss and Risk Premium is also known to be equal to the Expected Loss under risk-neutral dynamics of the random market factors. Therefore, the same formula can be re-written as:

$$\text{Price (perfect MBS)} - \text{Price (actual MBS)} = \\ \text{Risk-Neutral Expected Loss} + \text{Liquidity Premium}$$

In the current market, the real-world expected loss may be just a small piece of the puzzle. According to our February 2008 *Pipeline* article, the liquidity spread was found to be 200-400 bps when an ABS structure was analyzed in September of 2007; liquidity has deteriorated since then.

Myth 2: The Price of credit risk should be close to the expected losses

Let us not forget that ABS, CDS and other structured instruments are financial derivatives. The underlying is loan losses. Let us think for a moment how a mortgage insurer (MI) or a GSE charges for the loan loss protection. They surely must charge more than the real-world losses because they protect against worst-case scenarios. AD&Co was asked to work on a project that involved this task; we found that the risk premium can be of the order of 40% to 70% of expected losses. This will define the risk-neutral loss assumptions, from the MI and the GSE stand-point.

However, tranches absorb losses in a highly non-linear fashion. If we expect cumulative losses of collateral to be 10%, our bond may be well and alive. But, if we increase the losses to 14% or 17%, the bond may vanish. Hence, the market may seriously discount tranches that otherwise experience small losses under seemingly “realistic” market assumptions. If this logic wasn’t in place, the investor could have sold bonds and bought protection on the underlying loans.

Myth 3: HPI derivatives reflect market expectation of future home prices

Certainly not more than the forward curve points to rate expectations, forward prices – price expectations, etc. We recently received a note from OFHEO announcing the release of a new paper, A. Leventis, *Real Estate Futures Prices as Predictors of Price Trends*. The author states, “For many commodities, futures markets provide informative, unbiased measures of anticipated prices for the underlying product. In mature futures markets with sufficient trading volume, contract prices will summarize overall market expectations of likely price patterns.” He finds the bias in the CME futures traded on the S&P/Case-Shiller Index, which “have tended to predict larger home price declines than ultimately occurred.”

To that I can only ask, “Since when have futures and forwards been used as predictors?” The price of risk – again – is the important constituent of traded instruments. In a market dominated by investors who are eager to heal the wounds and protect themselves from a complete collapse, is it surprising that the HPI derivatives are traded to pessimistic forwards?

Myth 4: The interest rate sensitivity of MBS is not related to credit modeling

As we demonstrated in the February issue of *The Pipeline*, the effective duration of an MBS with losses can be anything and is largely driven by the relationship between interest rates and home prices. In particular, we found the OAD for low-rated bonds to become by order of magnitude longer when we apply the Credit OAS method. We disclosed that this effect is due to a relatively strong negative relationship between interest rates and home prices existing in the AD&Co HPA model. This cannot be easily verified by daily prices.

In order to provide the common sense rationale, let us review the recent Fed’s steps. The Fed has lowered interest rate several times in hopes to provide a remedy for the ongoing mortgage crisis. These actions were praised by market players and considered, at least, a partial solution that should lower mortgage rates, improve housing affordability and ease tension. From the investor stand-point, if an ABS tranche is valued at 25 now, has the Fed lowered the rate just to move it to 26?

Myth 5: Home prices fall with interest rates

This is what they are doing now, but this is not an economic law. Historically, the home price appreciation rate had negative correlation to interest rates – see *Home Prices and Interest Rates* at www.ad-co.com.

Why are interest rates falling now? This is the Fed's action to remedy the crisis that should *improve* home prices after all (among other things). What would happen to home prices if the Fed retained or increased the interest rates? They would likely deteriorate deeper causing a devastating effect on the economy. With higher interest rates, troubled homeowners would have less chance to refinance, would experience a reset rate shock and would likely join the crowd of defaulters. This would further depress home prices.

Hence, home prices should be improving with falling interest rates - relative to what they would have been otherwise.

Myth 6: Homeowners default once their home's price falls below the loan

Default is an American put option on real estate. As we all know, American options should not be exercised when the option is just in the money. Hence, even if the default was a hassle-free, efficiently managed, option, it would not be exercised because the home price falls just below its strike (loan).

Furthermore, practical mortgage default is a hassle with negative long-term consequences: it lowers credit scores and makes it difficult or impossible to obtain another mortgage. This means a sizable deterioration of the living standards for our homeowner: the average quality of rental properties in the US is not comparable to that of owned homes.

People default after they become delinquent, but they become delinquent when they can't pay. Affluent borrowers don't quit paying just because they experience a home price decline. The eventual resolution to the delinquency problem is a tough one; at that point, the amount of equity becomes a factor.



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