

Talking Credit

The Implied Expected Defaults of ABX 06-2

By Andrew Davidson

During the past three months, the price of ABX 06-2 BBB- has fallen from 100.5 to 98.3. While this may seem like a significant decrease in value, ABX may still be priced to a lifetime expected loss of under 4%, and does not appear to be priced to an expected loss above 5%.

Let's unpack this statement.

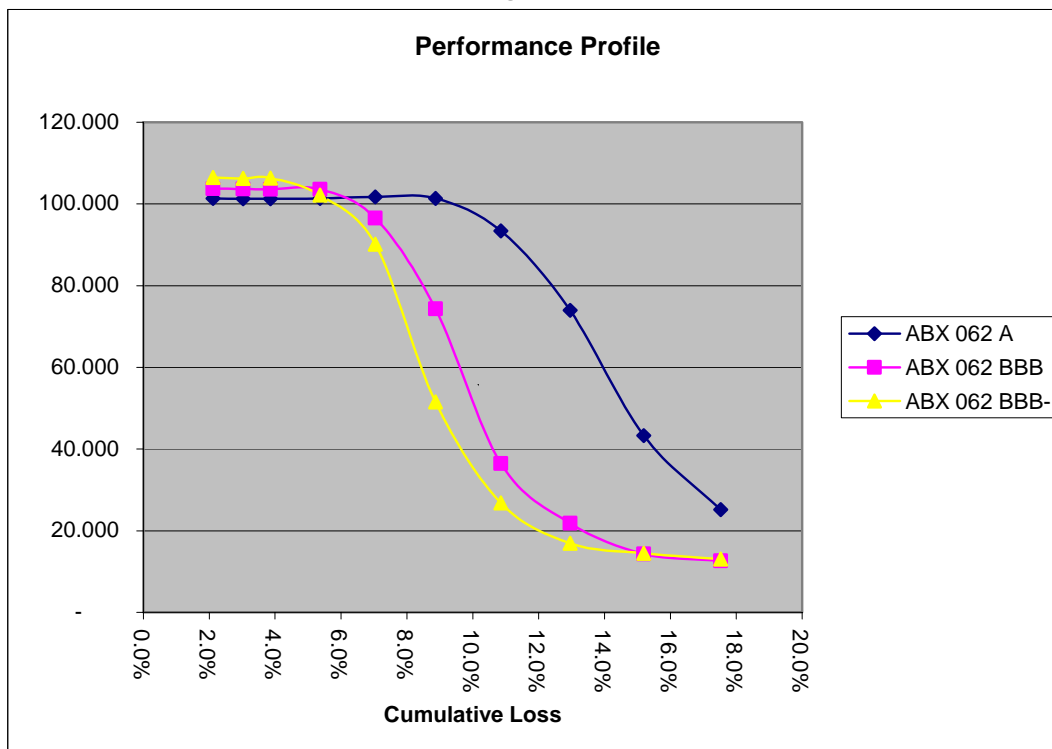
ABX is an index based upon Credit Default Swaps on Sub Prime Mortgage securitizations. The index is composed of CDS on bonds at the rating categories AAA, AA, A, BBB and BBB- coming from 20 deals originated during the first half of 2006.

Credit default swaps (CDS) have cash flows that closely mimic the cash flows of the underlying bonds, with some exceptions. For example, CDS differ from cash bonds in terms of financing cost (CDS have financing built in) and in terms of the treatment of certain interest shortfalls.

To perform this analysis, we used the implied default methodology described in The Pipeline in March 2006.

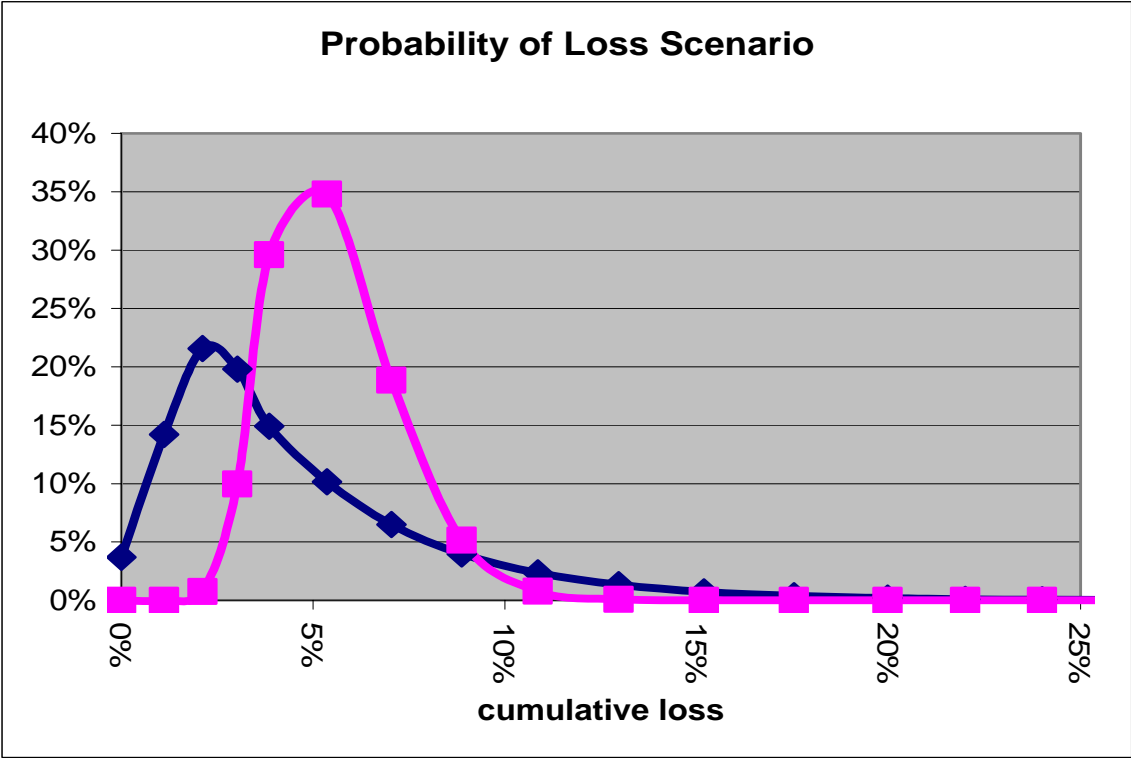
Figure 1 shows the averaged price profile of the bonds making up the A, BBB and BBB- indices. From this figure we can see that the higher rated bonds can withstand a higher level of collateral loss before experiencing write-downs.

Figure 1.



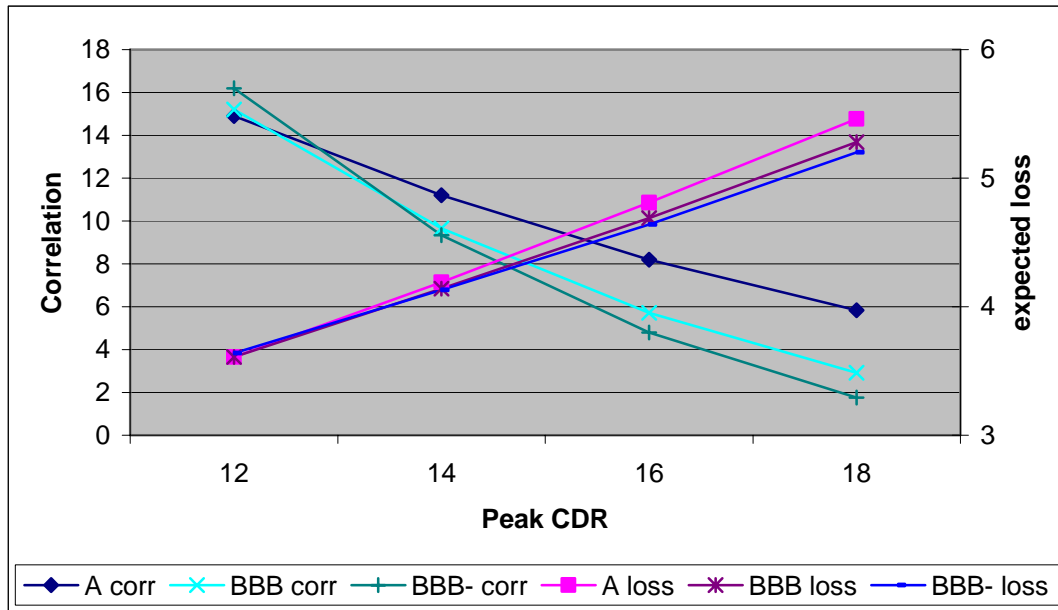
The value of a bond will reflect the probability of each scenario occurring. As described in the prior piece, we use a Vasicek distribution to express these probabilities. The distribution has two parameters, an expected default rate and a correlation. For ease of understanding, the correlation can be thought of as a factor related to the standard deviation of the output. Two sample distributions are shown in figure 2.

Figure 2



For any given security, the price of the security will reflect the price profile multiplied by the probability of each scenario occurring. Since there are two parameters in the distribution, for a given expected default rate, there is a correlation that will produce a probability distribution so that when the price profile is multiplied by the probabilities, it will equal the market price.

Figure 3 shows the correlation levels associated with various default probabilities for the A, BBB and BBB- indices. These lines are shown on the left axis. The right axis shows the associated expected cumulative losses. The chart shows correlations for Peak CDRs from 12 to 18. The correlations are near 15% for the 12% peak CDR and fall to about 4% for the 18% peak CDR. The corresponding life time expected losses rise from around 4% to 5.3%.

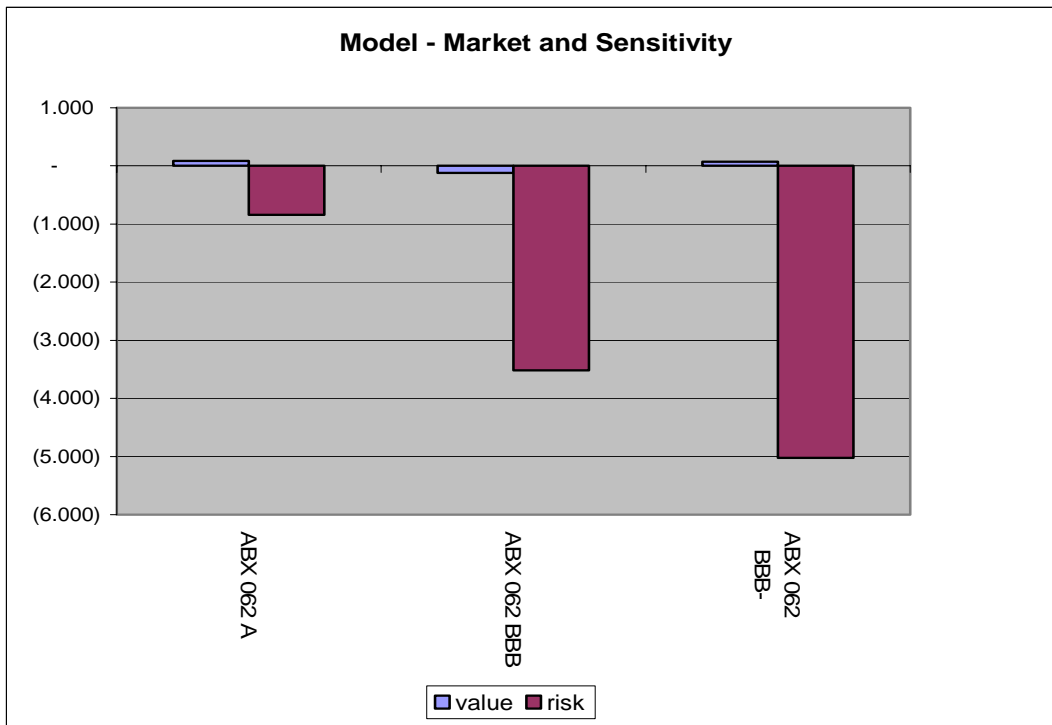


One goal of this type of analysis is to determine if there is a common set of parameters that will price the entire credit curve. In this case the correlation lines intersect near a peak CDR of 11% and a correlation of 13%. The distribution for these parameters is the one shown in blue in figure 2. It is interesting to note, however, that the distribution implies a 15.5% probability of losses exceeding 7%, which is the point at which the CDS begin to show shortfalls. The distribution for the 18 peak CDR, with a correlation below 2% and a life time loss over 5%, is shown in purple.

Based upon this analysis, ABX 06-2 is being priced by the market with an expected life time loss of under 4% and an asset correlation of 13%. The expected losses are above 5% when assuming a significantly lower correlation. A lower correlation, which has some theoretical and intuitive appeal, would imply that the A and BBB bonds were cheap relative to the BBB- bond.

Figure 4 shows the sensitivity of the value of ABX 06-2 to further increases in expected losses. If losses were to rise to 5%, even with a somewhat lower correlation of 10%, the value of the BBB- bonds could fall by approximately 5 points. To achieve the same drop in price with a 2% correlation, the expected losses would need to rise to about 5.75%. This would imply a probability of exceeding 7% losses of about 35%.

Figure 4



Caveats: There are many assumptions that go into this analysis, so this analysis may not be producing exact results. Various assumptions include prepayment rates, timing of loss curves and the relationship between prepayments and defaults. The analysis also combines all 20 deals and applies a single distribution to all deals and treats CDS as though they were equivalent to the reference bonds.

Sources: INTEX, Markit, AD&Co.



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