Using OAS and Empirical OAS to Find Value Across Coupons and Vintages

Our updated prepayment model changes our relative value analysis and our OASs. The updated model has a bigger impact on our OASs and a smaller impact on our empirical OASs. The update makes it important to distinguish between OAS and EOAS analysis. We review the correct use of both techniques in finding relative value.

- With our updated prepayment model, OAS and vintage analysis now provide a more reliable view of relative value for longer-term investors.
- Our empirical OAS continues to provide relative value rankings for shorter-term horizons, where price returns play a more important role.

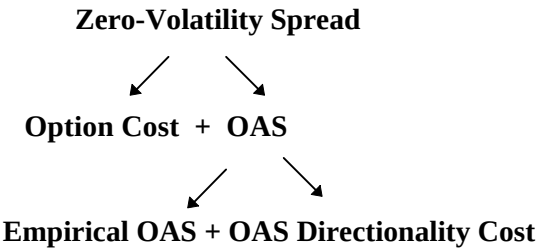
Use OAS for Long-Term Value

Even with the updated prepayment model, our framework for relative value will continue to revolve around both OAS and empirical OAS. Now that it is coupled with a prepayment model that more accurately reflects idiosyncratic historical and likely future prepayment patterns, OAS is now a better tool for identifying value for investors with long holding periods, where price fluctuations play second fiddle to fundamental value of the mortgage cash flows. It also provides useful insights into vintage relative value, because the prepayment model embodies historical differences in refinancings, cusp, and turnover behavior of each origination year. However, the updated prepayment model has a much smaller impact on our empirical OAS model.

Use Empirical OAS for Short-Term Value

We constructed the empirical OAS model for investors with shorter investment horizons, where price returns play a much larger role. In a perfect world with constant OAS terminal pricing, an OAS would give consistent relative value conclusions in any holding period. However, even with the updated prepayment model, mortgages continue to exhibit pronounced directionality in OAS, widening in a rally and tightening in a sell-off in a premium-dominated market. Accordingly, OAS does not fairly reflect likely excess returns over shorter holding periods. Directionality will have less impact the longer the holding periods; as an extreme example, directionality has no impact on 30-year holding period returns, because price returns play no role.

Our empirical OAS model provides a clearer picture of relative value for these shorter horizons, because it adjusts the OAS for the impact of directionality on holding period total returns. We adjust the OAS to create an empirical OAS in much the same way that the zero-volatility spread is adjusted to create the OAS by using simulations.



Our technique constructs empirical OAS from six-month excess returns of a mortgage over a comparable-duration Treasury portfolio across seven interest rate scenarios: +150 bp to −150 bp, in 50-bp intervals. In each scenario, we calculate the returns using a terminal mortgage price that is based on our OAS directionality model. This directionality model is a time-weighted regression of historical volatility-adjusted OAS on level and level squared of the 10-year yield. The empirical OAS is the probability-weighted average of these excess returns across the seven scenarios using a lognormal probability distribution centered on the 10-year yield six months forward with market volatility. When horizon OASs are constant, the empirical OAS matches the theoretical OAS.