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WHITE PAPER

Fast & Furious: Coupon Drift

Analyzing Loan Pools Using WAC

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Introduction

One of the most critical pieces of information in evaluating a pool of loans is the interest rate. However, taking the weighted-average coupon (WAC) of the loans at face value can be strikingly misleading. Unless all the loans have the same interest rate or the same remaining term, using the WAC as a constant interest rate for purposes of calculating the expected yield will likely understate the future interest rate of the pool and the ultimate returns of the transaction.

As a simple example, consider a pool consisting of two loans of equal size, the first, a 4% loan with 24 months remaining, the second a 6% loan with 60 months remaining. The WAC of the pool will initially be 5%. However, the shorter loan amortizes more quickly as a result of both its lower interest rate and its shorter term (for purposes of this illustration we will ignore prepayments). The result is that the WAC drifts up over 24 months, slowly at first, but accelerating each month, from 5% to 6% as of month 24. Calculating the IRR for this pool of two (2) loans at a par price based on the aggregate of each loan's cashflows, results in a blended monthly yield of 5.41%, well above the starting WAC of 5%.

In Practice

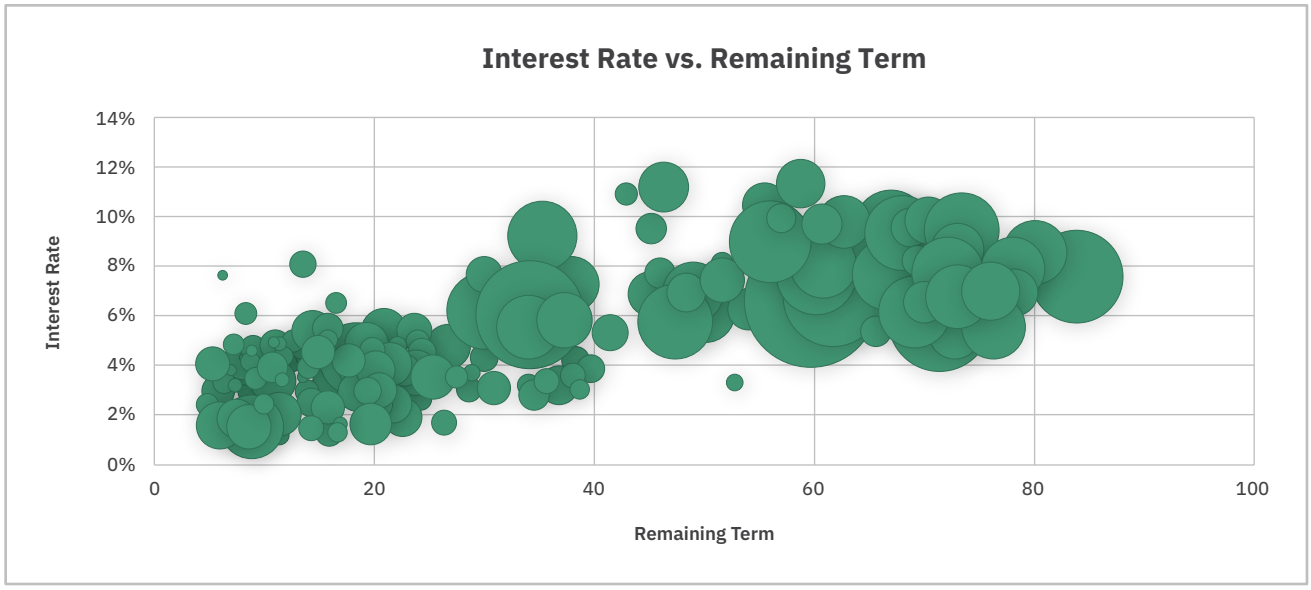
This illustration is not just a hypothetical situation, rather it is the common outcome. For risk and yield curve reasons, longer term loans will generally have higher rates than shorter term loans for a given set of credit attributes (i.e., a credit box). Moreover, as a result of the recent rise in interest rates, even loans within a cohort of the same original term, more seasoned loans – which will have shorter remaining terms – will have lower interest rates. (In fact, any period where rates are rising or falling will have more pronounced differences in coupons for otherwise similar loans, thereby increasing the effect of seasoning on yield.)

While longer term loans usually will have higher interest rates, this is not always the case; in particular, a seller may attempt to take advantage of buyers running pool analyses as a single loan using the pool WAC and include a large number of shorter remaining term, higher interest rate loans (for instance, loans originated before the pandemic with several years of seasoning). This will result in an overstatement of the expected future interest streams when analyzed as a single WAC when compared to tracking the loan-level cashflows over time.

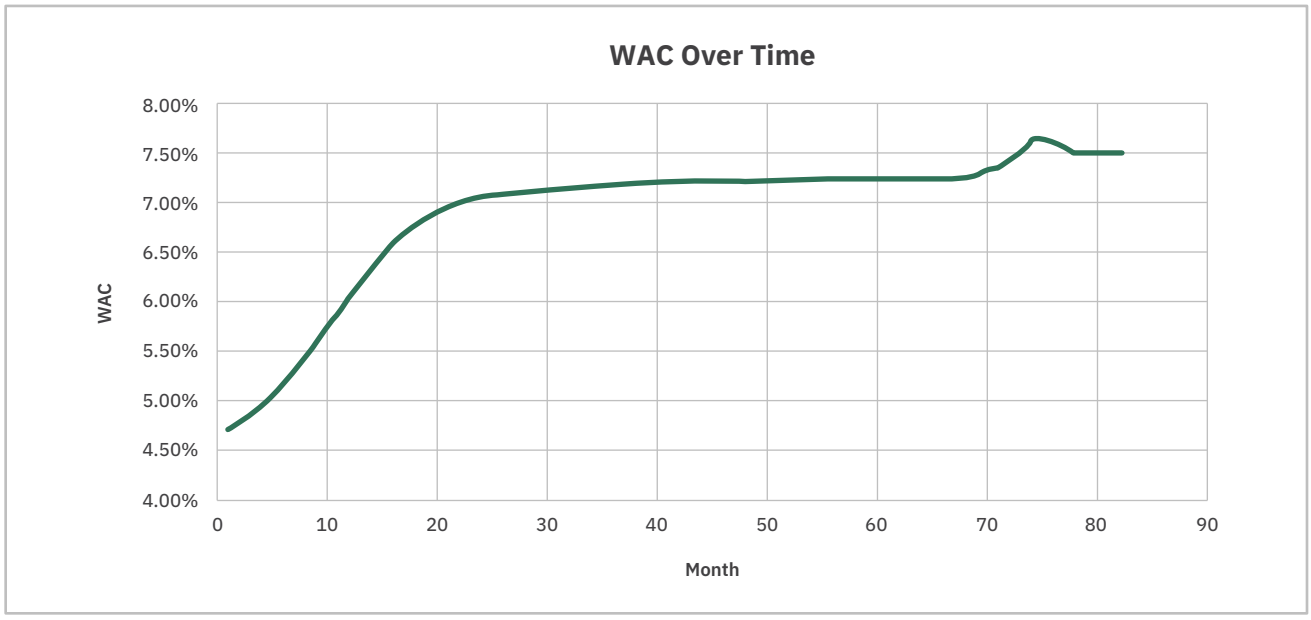
[1] The IRR or yield of a loan priced at par, when quoted as a monthly yield, is equal to its interest rate

Example: Pool Analysis

As a more concrete example, consider the following real-life pool: 1400 loans with interest rates that range between 1.89% and 11.74% and remaining terms that range between 6 and 82 months. The following graph shows the relationship between remaining term and interest rate (the size of the bubble reflects each loan's size).



As expected, longer term loans have, in general, higher interest rates than shorter term loans. The WAC of the pool is 4.70%, however, when we graph the WAC over time (ignoring prepayments), we see the following pattern:



It’s clear that analyzing the pool using a single interest rate equal to the initial WAC would underestimate the future interest rates and therefore income, resulting in the yield being materially understated. Also, while this analysis excludes prepayments, adding a prepayment assumption to this pool would not affect the above results, though it does reduce the impact on yield due to a smaller remaining pool balance in the latter months. For example, performing the same IRR analysis as was done in the two-loan example, results in an IRR of 5.98%. Applying a 15 CPR to the analysis, the IRR modestly declines to 5.82%.

Conclusion

The question then arises: if calculating the total IRR from the individual loan level cashflows is overly complicated for a given institution, is there a better way than using the WAC to analyze a pool using a simple, single-loan analysis? The answer is, yes! By changing the weights used in calculating the WAC from the traditional balance-only approach to be the product of balance and remaining term, we get a metric that takes into account both the size of each loan as well as how long each loan will be contributing its interest income. For the two-loan example, the balance-term weighted-average interest rate is 5.43% compared to the 5.41% IRR, and for the real-life pool example, it’s 6.04% as compared to IRRs of 5.98% at 0 CPR and 5.82% at 15 CPR.

While there is no substitute for running the analysis of a pool at the loan level, running the return analysis using the balance-remaining term weighted interest rate (or BRT-WAC) rather than just using the WAC, will more accurately describe the true future interest rate of the loan pool.

About LoanStreet

LoanStreet is the primary vehicle for financial institutions to share, report, and analyze their loan trading activities through an integrated, online platform. Our specialized software makes every step of the process as smooth as possible. From identifying your first pool of loans on the marketplace to receiving automated monthly consolidated reports, creating a seamless, scalable loan trading workflow has never been easier.

Get in touch to learn more about our platform. With over 1,300 financial institutions registered, we are ready to help you build a more efficient lending model.

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