

TOOLS FOR EFFECTIVE REFUNDING ANALYSIS

QUANTITATIVE ANALYSIS

One of the most important elements to PMA's financial advisory practice – an element that distinguishes us from our competitors – is our thoughtful approach to the analysis involved in each bond issue. In particular, we emphasize utilizing a variety of tools when considering a refunding of existing bonds. Often, many public finance professionals simply use the Best Practices outlined by the Government Finance Officers Association (GFOA) in order to recommend a refunding. These Best Practices suggest that any refunding should provide the issuer a net present value (NPV) savings of at least 3-5% of the par refunded. As a result, some public finance professionals will recommend a refunding as long as this threshold is met or exceeded. The analytical tools detailed below will demonstrate PMA's more strategic approach to bond refundings.

First, the call date can be used to capture economic savings. If, at any time before the call date, the current market has interest rates that are sufficiently lower than the interest rates on the existing bonds, then the issuer can likely refund those bonds with the lower interests and pocket the difference as economic savings. This is a common use of the call date and one that many issuers take advantage of in order to reduce debt service payments.

However, the decision to refund the bonds must consider negative arbitrage. Negative arbitrage exists for advance refundings in which the refunding occurs at least 90 days before the call date and the issuer is required to establish an escrow that earns interest at a rate less than the interest rate paid on the bonds. Negative arbitrage works against the savings of a refunding and in some cases can be so prohibitive that it does not make sense to execute the refunding even in a low interest rate environment. In such cases, it may be more reasonable to wait and shorten the escrow period to significantly reduce the negative arbitrage – perhaps even wait to do a current refunding in which the refunding occurs within 90 days of the call date.

With a refunding opportunity, an issuer must balance the current estimate of savings and the opportunity cost of higher savings with a shorter escrow. A common rule of thumb is that the amount of negative arbitrage in an advance refunding should not exceed the amount of net present value savings. Another common rule of thumb, as stated earlier, is to execute the refunding as long as there is at least 3-5% NPV savings. PMA's approach to this question goes further and uses an analysis that creates one advance refunding scenario with current interest rates and one current refunding scenario with the same interest rates. The difference between the two scenarios is the effect of the negative arbitrage and movement down the yield curve. Consequently, the current refunding will always show a better savings result for the issuer. At that point, we perform another analysis that determines how much interest rates need to rise from the time of the advance refunding to the time of the current refunding such that the issuer is indifferent between the two scenarios. This is called the breakeven point. If the breakeven point is, for example, 30 basis points, then as long as interest rates do not rise by more than 30 bps then the issuer would benefit by waiting to do a current refunding. Once the breakeven point is provided, the issuer must consider the probability that interest rates will rise by the amount of the breakeven point and if they are willing to assume the risk that it will do so.

A more sophisticated tool to analyze a refunding opportunity is an efficiency model which compares the estimated present value savings to the value of the call option exercised. This method uses sophisticated statistical analysis to compare estimated interest rates to the hypothetical market movements between now and the call date using Monte Carlo simulations. If the resulting refunding efficiency ratio is high enough, it means the contemplated refunding captures most or all of the lost option value. This model suggests an advance refunding opportunity is efficient if the refunding efficiency is above 95%.

Other factors to consider when evaluating a refunding opportunity:

- **Savings associated with each refunded maturity** – It is not necessary to refund all the callable bonds since bonds closer to the call date sometimes save little or not at all.
- **Relative value among available yield curves** – An analytical refunding approach determines where bank qualification provides the most value.
- **Overall savings level** – On small refundings, the savings should at least exceed what the vendors are being paid in fees.

Lastly, the call date provides financing flexibility to an issuer. Selling a new money bond issue may require existing bonds to be restructured to a later date in order to make room for the interest expense of the new bond issue. This restructuring is costly and may be extremely so if there is significant slope in the yield curve. Having call dates on bonds will help mitigate this cost because when those bonds are restructured, they are escrowed to the early call date as opposed to the long maturity date. In some cases, this may prevent several years' worth of interest expense. Also, with the US Tax code limitation of only one advance refunding, a restructuring to accomplish new money objectives could be more costly if the bonds have to be sold as taxable.

PMA's approach to advance refunding an issuer's debt is one of the several factors that distinguishes our service from our competitors. We believe that a quantitative and analytical practice is necessary to provide our clients with sound advice that is impartial and serves the issuer's best financial interest. Doing so fulfills our fiduciary duty as mandated by the Municipal Securities Rulemaking Board and is a large reason why our clients continually look to us as their trusted Financial Advisor.

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