

Base-Line Solutions for Managing Interest Rate Risks

by

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Just as the railroad barons of the 19th century came to realize that their business was “transportation” rather than “railroads,” most financial professionals involved with futures and options trading have come to appreciate the fact that our business is not “futures and options,” but rather “risk management.” Futures and options are just one set market mechanisms that can be used to solve risk management problems; and while this mindset is appropriate for virtually all segments of futures and options activity, it is particularly relevant for corporate treasurers facing interest rate risk exposures

Over the years, the futures and options component of the risk management business has generally expanded - - quite dramatically through 1994, with some leveling off occurring over the last several years. The pre-1994 expansion was attributable to an expansion of listings of futures and options into various sectors - - primarily in connection with financial risks. Starting with the introduction of currency futures contracts in 1972, coverage of these instruments expanded to encompass fixed income markets (i.e., interest rates) and later equity products (a host of stock index futures and options). At the Chicago Mercantile Exchange, the banner volume year of 1994 was

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largely reflective of unprecedented volatility, primarily in connection with fixed income markets. Trading volume in Eurodollar futures - - the linchpin short-term interest rate vehicle - - soared as Alan Greenspan's policies drove rates up by over 300 basis points with a year's time. Since then, interest rates have been remarkably stable, and as a consequence the *perceived* need for risk management in this sector seems to may have diminished and Eurodollar trading volume has edged lower.

Rather than reading this evolution as any indication of a lessening of the need for Eurodollar futures and options - - or risk management products more generically - - this history should serve as a clarion call. Undoubtedly, despite the longevity of this current quiescent period in dollar-denominated interest rates, one thing can surely be said about volatility: volatility will change. And when it does, *prudent* managers - - ones that have anticipated the change in the financial landscape - - will be ready.

Preparing for this inevitable sea change requires making the investment in time and human capital to come to understand the possible choices that are available when managing price risk, such that intelligent business decisions can be made. Importantly, there is no single solution. Rather, managers must weigh the considerations of risks versus opportunities and direct costs versus opportunity costs before any specific strategy can be pursued. Moreover, to further complicate the issue, it is relevant to recognize that not all risks are the same.

In particular, for corporate treasurers with domestic operations, three different types of interest rate exposures are present. The first deals with the risk of rising rates in connection with variable interest rate debt instruments or prospective funding activities; the second pertains to the opportunity lost when fixed-rate funding is in place during periods of declining interest rates; and the third is the risk associated with declining yields on the firm's short term balances.

Of the three, the first tends to be the most natural starting point for the vast majority of corporate risk managers, as (a) the failure to manage this exposure is directly observable on the company's financial statements, and (b) the magnitudes could be considerable. In the case of the second risk, the adverse change fosters a lost opportunity; but its magnitude is undocumented on any financial reports. Although this risk may be no less real, the absence of a paper trail creates a void of accountability that often permits a lack of attention to this type of exposure. Turning to the final risk, this exposure is often ignored simply because its magnitudes are generally seen as inconsequential -- particularly in comparison to the sizes of the exposures associated with the liability side of the balance sheet. Clearly, for cash-rich organizations, this posture could prove to be ill-considered and costly.

Regardless of which of these risks is being addressed, essentially three different, base-line strategies deserve consideration. The first involves using a rate-setting mechanism (e.g. an interest rate swap, a forward rate agreement, or an interest rate futures contract); the second involves buying an option or, perhaps using more familiar

terminology, buying an interest rate cap or an interest rate floor; and the third involves a combination of long and short (i.e., purchased and sold) option positions. The forthcoming discussion examines these alternatives in the context of the first risk category - - the risk of rising interest rates on variable-rate or prospective debt issuances - - but the alternatives are equally appropriate, irrespective of which underlying risk might be under consideration.

The base-line strategies for managing the risk of rising interest rates on a variable-rate or prospective debt issuance are the following:

(1) Lock-in an interest rate on the exposure in question, and thereby limit both risk and opportunity. In this case, the foregone benefits of an attractive interest rate move would be the cost of the protection; but this amount is only fully realized at the end of the process. It would be zero if interest rates move adversely to the exposure, but it could be considerable if the opposite occurs. Again, examples of rate-fixing mechanisms that would satisfy this objective include interest rate futures contracts, forward rate agreements (FRAs), and interest rate swaps.

(2) Buy protection that compensates for interest rate moves in only one direction. That is, buy a cap (or put options) to protect against rising rates¹.

Here, the price of the protection is explicit -- equal to the payment required for

¹ A floor (or call options) would be appropriate to protect against the opposite exposure to lower rates.

the purchase of the cap. This approach protects the manager from an adverse interest rate move but allows improved performance if the interest rate on the exposure moves beneficially.

(3) Buy the desired cap option as appropriate; but sell a second option as a way to reduce the up-front cost of protection. Importantly, the option sale has the unattractive outcome of forcing you to give up some potential benefit -- either from higher interest rates if you sell a cap (or put) or from lower rates if you sell a floor (or call). Coupling a floor and a cap (buying one and selling the other) constitutes the construction of a *collar* (also called a *range forward* or a *fence*), which limits both downside and upside potential; buying and selling the same type of option (i.e. either buying and selling caps or buying and selling floors) triggers protection only over a limited range. For example, buying a 5% cap and selling a 6% cap limits the cost of funds to a maximum only if the underlying interest rate stays below the 6% threshold. This construct is commonly known as a *corridor*.

Combinations such as collars and corridors are somewhat of a hybrid. They may have some explicit initial cash requirement at the onset; but they may also be structured to be costless, as well. Their true cost, however, must recognize the prospect of foregone opportunity, along with the initial cash outlay. Again, the magnitude of this potential cost would be uncertain upon

the implementation of the hedge, just as is the case for the opportunity cost of a rate-setting mechanism like a futures contract.

As alluded to above, the risk manager has two alternative market places to shop for his or her risk management tools. Either an “over-the-counter (OTC)” transaction can be made with a bank or an investment bank serving as the counterparty, or the hedger can access exchange-traded futures and options contracts with the assistance of a futures commission merchant (FCM) serving as a broker.

OTC transactions can be used to meet the individual needs of the counterparties, reflecting very specific timing and exposure characteristics. Each pair of counterparties, however, must negotiate the details and conditions of the transaction. Ordinarily, the execution of the initial agreement between two parties can require considerable time and the attention of legal counsel, and this process must be repeated for each new counterparty.

Once these preliminaries are settled, however, the OTC’s most attractive feature is its adaptability. Virtually any mutually acceptable deal can be structured with complete flexibility in terms of the timing of cash flows and the size of transactions. The one big negative for OTC trades, however, is the introduction of credit risk - - the risk that the counterparty who ends up on the losing side of the transaction defaults on its obligation to pay with the winner. Clearly, while such defaults occur only sporadically, the issue of credit risk is one that needs to be addressed. Once understood, a number of remedies may be considered, including implementation of collateral agreements, imposition of position limits

(i.e., size limitations with specific counterparties), or use of a new class of “credit derivatives,” which effectively transfer credit exposures from one counterparty to another.

In a similar fashion, the alternative of using exchange-traded instruments also provides a set of ancillary considerations. A finite set of exchange traded instruments are listed, reflecting the standard features of these products in terms of size, timing of value dates, and, for options, critical values like strike prices and expiration dates. This standardization is somewhat of a double-edged sword. On the one hand, results from exchange traded hedges may differ slightly from those expected at the onset of the hedge, as a consequence of the standard features not *precisely* matching the conditions of the underlying exposure. The variability of results would thus depend on just how different the standard terms are from the specific requirements dictated by the exposure. Small differences would likely mean that the exchange-traded instruments would serve nicely, and the degree of uncertainty would be seen as inconsequential. When the differences are more substantial, however, the range of uncertainty for the prospective outcomes would increase, commensurably.

Standardization also has a positive aspect. That is, standardization contributes to the liquidity of these tools, generally making them cheap to transact and allowing for easy offset in the event of a change in economic circumstances or a change in the nature of the underlying risk. Moreover, instruments listed on an exchange also offer the protection of a clearing house, which essentially eliminates exposure to credit risk by imposing rigorous mark-to-market accounting and daily adjustments of cash (for futures contracts) or collateral

(for options). These adjustments ensure that gains from winning positions will, in fact, be realized. Exchange-traded instruments also have the benefit of greater transparency, as prices are disseminated for virtually all listed instruments throughout the trading day. In contrast, for seasoned (i.e., previously issued) OTC instruments, valuation may be problematic - - especially if the instrument is a uniquely tailored vehicle with exotic features.

Importantly, at the time a risk management decision is made and a hedge is implemented, it is never clear which one of the various alternatives discussed above will ultimately turn out to be the best in terms of offering the lowest cost or highest return. Unfortunately, this determination can only be made in retrospect, as no single hedge solution will ever outperform under *all* possible market scenarios. The choice of a particular hedge solution should be made just like virtually any other business decision -- by gathering information, comparing alternatives, and assessing prospective market conditions, opportunities, and risks. Analyzing base-line strategies with known prospective outcomes, however, frames the issue in such a way as to make the selection process more manageable.

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