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The year 2003 will be remembered as a period of high interest rate volatility, including a 40-year low in the level of rates. Accompanying this environment is a debate on whether this volatility is magnified by the increased size of the mortgage market and its associated hedging activities. Hence, we begin this issue of *The Journal of Fixed Income* with empirical evidence and a theoretical model on the topic. Implied volatility anticipates future realized volatility. Perli and Sack provide evidence that the implied volatility from 10-year swaptions increases when the prepayment risk of outstanding mortgages increases. As rates decline, mortgage portfolio duration is reduced and dynamic hedgers buy Treasury futures to reduce their outstanding short positions. The increased demand reduces rates further. As rates rise, mortgage duration extends and hedgers sell more Treasury futures contracts. This adds more directional pressure to a rising rate environment and, hence, more volatility than would exist in a market without these participants. In the next article, Professor Andreas Krause derives an equilibrium model for hedging demand and the sensitivity of Treasury yields to this activity.

Mortgage-backed securities (MBS) managers are continuously focused on and updating their prepayment models. Stavros Peristiani examines the effect of the aggregation of all the individual prepayment decisions in a mortgage pool. The findings indicate that the prepayment function is inherently unstable. Although burnout is responsible for the non-linear shape of the curve, it is the statistical aggregation that creates the wide dispersion in prepayments. It is surprising that in a market that is so deeply analyzed, there are significant differences in the prepayment forecasts of premium MBS by major participants.

The market for commercial mortgage-backed securities (CMBS) has grown and matured significantly in the last five years. Professors Tu and Eppli derive and analyze a valuation model for CMBS that includes both term default and balloon risk. The interaction reveals that a lower probability of term default associated with more restrictive cash flow criteria is partially offset by higher balloon risk. In the next article, Mark Adelson provides some important insights into the effect of correlation assumptions when evaluating structured finance products. It is easy to overestimate the

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combined beneficial effects of diversification and credit enhancements if one neglects the potential for increased correlation during market stress periods when systematic factor outcomes dominate.

Professors Carayannopoulos and Kalimipalli examine the pricing of convertible bonds relative to a Duffie and Singleton reduced-form credit risk model. They find evidence of mispricing: underpricing out-of-the-money and overpricing in-the-money embedded conversion options that may be useful to bond managers. In the next article, Professor Giesecke derives and analyzes an intensity-based model for correlated defaults that can be readily implemented. Applications to a portfolio of credits and first-to-default baskets are illustrated.

Finally, Professors In, Brown, and Fang present a comprehensive empirical analysis of the international links between interest rate swap markets. Using variance decomposition and impulse response analysis, the slope of the term structure is the most significant determinant of swap spreads in the U.S., U.K., and Japan.

We hope you enjoy this issue of *The Journal of Fixed Income*. Your continued support of the journal is greatly appreciated.

Stanley J. Kon
Editor

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