THE JOURNAL OF DERIVATIVES

VOLUME 6, NUMBER 3 SPRING 1999

This issue of the *Journal of Derivatives* begins with several articles that I believe represent substantial contributions to our arsenal of models for assessing and managing both market risk and credit risk. The first, by El Jahel, Perraudin, and Sellin, introduces a powerful new technique for calculating value at risk. The standard approach is based on the assumption that asset returns are jointly lognormal, and that changes in option values vary either linearly, according to their deltas, or quadratically, in more sophisticated treatments that also take option gamma into account. The new approach easily accommodates much more general return processes and more precise modeling of option price behavior as well. (The only downside is that the calculation involves constructing and manipulating characteristic functions for the returns distributions, but this is at most a conceptual problem — the calculations are easily done using standard software packages.)

Arvanitis, Gregory, and Laurent then present a family of credit risk models. The variables of interest are the yield spreads among different credit classifications, such as Moody's bond ratings. Spreads are functions of a Markov transition matrix that governs the movement of a bond issuer from one rating category to another and, perhaps, ultimately into default. By modeling the transition matrix in different ways, the authors show how a wide variety of real-world properties of risky yield spreads can be incorporated easily, such as correlation between credit spreads and the overall level of interest rates.

The focus on credit risk continues in the next article, by Klein and Inglis, which considers the risk of default by the writer of a derivative contract. Risk exposure depends on the behavior of the underlying asset, the writer's own firm value, and the riskless interest rate, as well as the correlations among them. This leads to closed-form valuation equations that can capture a rich array of price behavior for vulnerable options.

The last two articles focus on barrier options. Carr and Picron consider the problem of option hedging and replication for a barrier option, in which the hedge portfolio is restricted to be static. Using a clever set of synthetic contracts in the development of the model, they show how even the timing risk entailed by the possibility of hitting the barrier at any point in the option's lifetime can be hedged by a static portfolio of European

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plain vanilla option contracts.

Finally, Haber, Schönbucher, and Wilmott describe a kind of barrier option they call a Parisian option, in which the asset price must penetrate the barrier and stay beyond it for a specified time period before the barrier provision is activated. They present a neat approach for pricing Parisian contracts and related instruments.

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I would like to announce a significant development for the *Journal of Derivatives*. Following discussions over the last few months, we have agreed with the International Association of Financial Engineers (IAFE) to merge their association journal, the *Journal of Financial Engineering*, into *JOD*. Starting with the next issue (Summer 1999), the *Journal of Derivatives* will become the official publication of the IAFE. With the addition of the IAFE membership, our subscriber base will approximately double. The focus of *JOD* will remain essentially the same, since we have always considered "derivatives" as including a broad range of financial engineering and risk management topics in addition to straight "contingent claims." I will continue to serve as editor, and Robert Jarrow will be joining *JOD* as co-editor.

We are delighted at this merger, which we believe will strengthen *JOD* significantly. Further details will be provided in the next issue of the *Journal of Derivatives*.

Stephen Figlewski
Editor