

THE JOURNAL OF DERIVATIVES

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ANNOUNCING A SPECIAL ISSUE

I am pleased to write that Frank Fabozzi, Editor of *The Journal of Portfolio Management*, and I will collaborate to create a Special Issue for *The Journal of Derivatives*. For publication in May 2022, the issue will focus on derivatives in the asset management world. Our authors will be practitioners and the mission will be educational. I am grateful that Frank, in his spearhead role, will lend his considerable enthusiasm and record of excellence to this promotion of best practices and knowledge in the application of financial derivatives.

AGING?

At the (great) risk of generalizing my own recent experience and confusing it with that of the larger society, I've noticed in the past 3–6 months encountering many and diverse issues pertaining to age, medical care, and mortality. First, on the professional level, I have inquiries from insurance companies seeking to understand and transfer risk for life-contingent settlements in forms such as securitization and longevity (mortality) derivatives. Analysis and best practices in this field are not as settled as one might think. There should be high urgency in the re-mapping of mortality tables in light of the ongoing COVID pandemic with both its evident and hidden consequences.

A second, pervasive, though indirect “aging” phenomenon is “work from home” (WFH). The advent of WFH, even if the work world mostly reverts to the (anachronistic?) trek-to-the-office paradigm, strongly favors the experienced (a more polite word than “older”) professionals. While one might debate “with age comes wisdom,” age does generally confer larger networks created in pre-pandemic years. As I've learned in my consulting, the network is everything, and WFH has much in common with freelance consulting. WFH permits those with diminished physical stamina to remain in the (virtual) workplace longer. Further, WFH does not mean only that the employer pushes its employees from central office to home. Rather, employers are hiring WFH employees who never set foot in that office.

A third “brush” with aging that life has thrown my way concerns close family members coping with the twin challenges of advanced age and illness. Not surprising to anyone, this is a bad, literally deadly, combination. Looking beyond the unavoidable and ubiquitous aspect of illness and the elderly, what strikes me is the dissonance between readily attainable common sense and what the medical care industry actually practices. Specifically, for many maladies the cure becomes worse than the disease as one ages or acquires other medical challenges. My meaning is not that the elderly should not receive treatment because of someone's external and impersonal calculation. Far simpler than that—the cure, such as an extended hospitalization, may yield both a net shortened life expectancy and diminished quality of life.

Anecdotally, then, my perception is that aging, mortality, and health maintenance are increasing in relative importance. Demography would likely support the conjecture.

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Not a good development; both individuals and society as a whole are better and happier when they focus outward (creating and exploring) rather than inward (dwelling on problems with no ultimate solution).

OUR NEW ARTICLES

The six articles of this issue begin with Taylor and Vecer of the New Jersey Institute of Technology and Charles University, respectively, proposing and discussing long-dated options on the logarithm of the price of the underlying. While the literature already understands such options under generalized Brownian motion, the authors here explain advantages for long-term insurance applications and long-term investors. Further, the formulation of the early exercise boundary for perpetual and finite-maturity American options is interesting to ponder.

Dyachenko and Rieger of the University of Trier consider the important and long-standing problem of maximizing investor utility for an equity portfolio. The authors discuss derivative transaction additions for the maximization and argue that the most appropriate class of derivatives incorporates both the equity underlying and volatility of the underlying. They claim that the certainty equivalent return is significantly greater with this class of optimal volatility-dependent derivatives and that there are immediate positive implications for the creation of structured products.

Zhang, of Nanjing Audit University, and Gao and Li, both of Renmin University in China, deftly apply the “jackknife method” of Phillips and Yu (2005) to reduce (the sometimes substantial) estimation bias in bond option parameter sensitivities (“Greeks”). The authors examine the performance of their technique with extensive Monte Carlo studies. They demonstrate utility through dynamic hedge under a two-factor Cox-Ingersoll-Ross interest rate model.

Fabien Le Floc’h of the Delft University of Technology tackles the interesting topic of the arbitrage-free interpolation of option prices. The author extends the local variance gamma model research of Carr and Nadtochiy (2017) to approximate local variance as piecewise linear and claims excellent calculation speed. Le Floc’h also addresses the common challenge of noisy option market data through a specific regularization scheme.

Huang, Yang, and Chang of Hubei University of Economics, National Chengchi University, and National Central University, respectively, contribute an innovative study that combines a model for house prices with known models for interest rate risk. For house prices, the authors employ a jump ARMA-GARCH approach. A principal goal is the assessment of no-negative-equity guarantees—a feature of the UK market. The combined model includes mortality risk as a significant component.

Cui, Kirkby, Nguyen, and Taylor of Stevens Institute of Technology, Georgia Institute of Technology, Marist College, and the New Jersey Institute of Technology, respectively, describe a representation formula for the implied volatility as a converging limit of a sequence of explicit integrals of elementary functions. The authors apply the concept to several volatility models and claim wider applicability for the solution of certain types of inverse problems.

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