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What can one say? Apparently unsatisfied with the level of risk we are facing from the slow and uneven recovery from the Great Recession; continuing, and barely contained, sovereign credit problems in the euro zone; enormous uncertainty about the future all across the Arab world; and the extraordinary assortment of real-world events, like record-breaking earthquakes, tsunamis, floods, droughts, heat waves, snowstorms, tornadoes, and hurricanes that have struck all over the world, the U.S. Congress has felt it necessary to manufacture additional risk. It is treating the issue of whether the world's strongest economy might default on its outstanding bonds as a matter of partisan politics rather than one of crucial importance to the U.S. and world financial system.

The debate is about whether to raise the "debt ceiling," an artificial limit on the total amount of outstanding government debt that Congress imposed many years ago in a futile attempt to control its own spending decisions. The ceiling has been raised innumerable times, of course, whenever the country's borrowing needs have required it, accompanied by a familiar but essentially meaningless ritual of political theater in which the party out of power deplores the fiscal irresponsibility of the party in power that makes the additional borrowing necessary. This time may be different. The leaders in Congress and President Obama uniformly proclaim that default is inconceivable and a deal will surely be struck somehow, yet they have also uniformly failed to reach any kind of agreement that Congress would accept. A non-negligible minority in the House of Representatives has declared that it will vote against raising the debt ceiling no matter what, which clearly does not make reaching a deal easier.

The informational aspects of this scenario in the financial markets have been quite interesting: With only a few days left before the world's most important class of default-free securities might lose that status, the markets seem not to believe it could possibly happen. Unfortunately, how disruptive a shock is to an economy is a function of how big a surprise it is. The consequences will be even more severe if the U.S. does default when the markets are confident it won't happen. Let us hope fervently that we don't find out how disruptive that might be.

Turning to this issue of *The Journal of Derivatives*, our first article examines one of the most important basic problems in risk management: how to model a return process most easily and accurately to obtain a valid estimate of the exposure to tail risk. The Cornish-Fisher and Gram-Charlier expansions are well-known procedures to approximate an empirical density function by matching its first four moments. They permit asymmetry (skewness)

and tail fatness (kurtosis) to be taken into account, along with the mean and volatility. However, both methods are ill behaved outside of a restricted range of parameter values. Simonato proposes using instead the Johnson family of densities, which also has only four parameters, is easy to fit, and produces valid density functions over a full range of parameters.

The next two articles are concerned with extending the LIBOR market model (LMM), which has become the preeminent framework for pricing interest rate derivatives in practice. A plain vanilla interest rate option, or a package of options such as a cap contract, are easily priced in closed-form under the LMM, but callability, American exercise, and other kinds of path dependency in the payoff introduce the same valuation difficulties for interest-dependent derivatives as those for equity options. And Xiao proposes the same kind of solution as that for equity options: approximate valuation within a discrete lattice. His straightforward procedure can reduce computation time by several orders of magnitude relative to Monte Carlo simulation. Wu and Chen then address the problem of adapting the LMM to price interest rate derivatives whose payoffs are based on a sum or average of interest rates or on the spread between two rates. If the individual interest rates are lognormal as assumed, a linear combination of them is not. But the authors show that the composite density can nevertheless be well approximated by a generalized lognormal, which permits efficient and accurate (although approximate) valuation in closed form.

Next, Ameer et al. present the results of a survey of derivatives usage conducted among the largest firms in Malaysia. The basic results are largely consistent with what one might expect of derivatives users in an emerging market. But one thing that makes Malaysia special is the influence of *Shariah* law. The authors provide an overview of the main issues affecting derivatives usage under *Shariah* law and discuss how the financial industry deals with them.

Finally, in the last article, Orosi takes up an issue that I was once concerned with myself, which can be stated roughly as follows: The Black–Scholes model is applied in the real world in the form of “practitioner Black–Scholes,” which uses a different volatility input for each different option written on the same underlying stock. This adaption allows for a good fit to market option prices but is completely inconsistent with the theory the model is derived from. So what makes the Black–Scholes equation any better for pricing options than some other equation with similar properties that does not have any theoretical underpinnings? The somewhat disturbing answer is that it was not hard to find a model-free equation that performed as well or better than Black–Scholes. Orosi extends that equation, tweaks it a little, and finds that his version explains option prices as well as Black–Scholes over a broad range of strikes and maturities.

By the time you read this letter, the U.S. debt-ceiling crisis will have been settled, hopefully without a default. But even if a deal is reached in time and the U.S. does continue to pay its debts, this experience must still leave us with lingering concern for the future. With partisan politics driving U.S. economic policy, such that maintaining the nation’s creditworthiness is being treated as less important than developing “talking points” for the next election, rational risk-averse investors will have to question how committed the U.S. is to maintaining its creditworthiness over the long run. Even though the U.S. federal government might not default this time, one has to consider the risk that partisan gridlock will develop again sometime in the next, say, 20 years, and the sovereign issuer of the world’s most risk-free securities will fail to pay up.

Stephen Figlewski
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