In an earlier issue of *The Journal of Derivatives*, when more than 15 Republican candidates were in the race for the Presidential nomination, I suggested that if we think about the candidates as options voters must choose among, the right strategy to increase perceived value of that option relative to the many alternatives is to maximize volatility. Little did I realize how prophetic that would turn out to be. The now nearly inevitable winner of the Republican nomination is a candidate with no political history, never having served in any elective office. His campaign has included a long string of statements, policy proposals, and behavior so far outside the norm of U.S. Presidential politics that any one of them would likely have completely sunk a more traditional candidate's campaign. Donald Trump is perhaps the highest-volatility candidate from a major party in U.S. history. The major question for his candidacy now, going into the general election, is whether Trump will be able to reduce his perceived volatility or, alternatively, the electorate will prove to be sufficiently tolerant of Presidential volatility that they will exercise their Trump option and acquire a high-risk underlying that they must hold for a minimum of four years. There are no natural hedges available.

This unusual campaign season has provided a demonstration that the Arrow Impossibility Theorem is alive and well. In Arrow's study of how to devise a voting system in which the winning candidate is the one who is the most preferred overall, he found several unsolvable problems, one of which is that voters may rationally choose not to vote for the candidate they truly prefer, but to vote strategically in order to affect a different candidate's result. As Trump approached the point at which he had enough delegates from the state primaries to lock in the nomination, the remaining two Republican candidates encouraged their supporters not to vote their true preferences, but to combine their strength in order to "stop Trump" by voting for whichever of the two was stronger in each particular state. It didn't work.

It is going to be a very interesting campaign.

Turning to this issue, we start with two articles in which American option exercise is an important element. Russo and Staino take on valuation of American Asian options under stochastic volatility. All three of these characteristics can introduce very hard problems for traditional option-pricing technology. Yet the authors are able to develop a very clever lattice–based methodology that

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can handle them all together. In the second article, Ruas, Nunes, and Dias consider a more limited issue, which is that the barrier option parity relation, which connects the prices of European knock-in and knock-out options to the value of the plain-vanilla European option with the same strike and maturity, does not hold under American-style exercise. The authors show how to adjust the parity relationship to make it work for this broader case.

After these two articles that extend the technology of option pricing, we turn to two articles on "real" options, which must be handled quite differently. A start-up company has a good idea (one hopes) but requires a development period in which to establish that the idea is viable and a good base for a successful business. The shareholders at this early stage are mostly holding what amount to options on the success and future performance of the enterprise. Real option theory tries to bring valuation and investment decisions like this one into the more rigorous framework of derivatives pricing. Finnerty shows how this general approach can be implemented in practice, demonstrating the idea with two well-known examples. In the second real options article, van Wijnbergen and Zhao consider optimal exploitation of drilling options in developing a new natural gas field. The key issue is that drilling one exploratory well provides value both from the output of the new well but also from the information it generates about the potential profitability of further drilling in more remote areas.

Our final article by Silva, Vieira, and Vieira looks at an important issue that typically arises in derivatives markets during periods of crisis. There is a long history of governmental attempts to restrain price movements in financial markets that are felt to be contrary to the public interest. Since both investors and producers dislike it when prices in their markets go down rather than up, short selling is often the object of such regulation. In 2012, this concern was extended to the market for credit default swaps (CDSs) written on sovereign bonds, when the European Union banned the purchase of CDSs for an investor who does not own the underlying bonds. Comparing the countries where the restriction applied against others outside the EU, the authors find that market volatility went down following the ban, but liquidity and information efficiency suffered when the prohibition was in place.

This issue completes the 23rd volume of *The Journal of Derivatives* at the same time as the current academic year is drawing to a close. We thank all of the authors, reviewers, editorial and production staff who have contributed to the JOD this year for their good work, which I deeply appreciate, and we congratulate all new graduates and their families on reaching a major milestone in their education.

Best wishes to all for an enjoyable and entertaining summer.

Stephen Figlewski
Editor