

D THE JOURNAL OF **DERIVATIVES**

Editor's Letter

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JOD 2017, 25 (2) 1-2

doi: <https://doi.org/10.3905/jod.2017.25.2.001>

<http://jod.ijjournals.com/content/25/2/1>

This information is current as of March 21, 2019.

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THE JOURNAL OF DERIVATIVES

VOLUME 25, NUMBER 2

WINTER 2017

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It's getting pretty monotonous. Every quarter I marvel anew at the strength of the stock market and the record-breaking low volatility in the face of massive uncertainty about the future. One year after Donald Trump was elected President, the unemployment rate has fallen to 4.1 percent, the lowest in 17 years, consumer confidence is also the best in 17 years. The U.S. economy has been growing at an annualized 3 percent for the last two quarters, high for an economy so close to full employment, yet inflation was only about 2 percent. Meanwhile, Trump's approval rating with the American people is under 40%, the lowest for any President in his first year; and the Republican Congress, with overwhelming political power that allows it to pass legislation with no votes from Democrats at all, has been unable to actually do anything, including ending Obamacare (which the House voted to kill more than 60 times when Obama was actually in office). Currently, they are pinning all of their hopes on a tax plan that more than 70 percent of the country dislikes and has numerous features with many enemies in the Congress. It is highly questionable whether tax reform will fare any better than Obamacare repeal did. The country is more polarized across the political spectrum than it has been in living memory, with deep and apparently irreconcilable anger being expressed on both sides.

And for months the VIX has been in the range of 9–11 nearly all the time, about half of its long-term average level. We financial economists must be completely wrong about people disliking uncertainty.

Turning to this issue of *The Journal of Derivatives*, our lead article is so powerful that it required five authors: Zhao, Zhao, Chatterjee, Lonon, and Florescu. They have developed a new kind of lattice model that is especially good for modeling derivatives on volatility and higher moments of a returns process. The problem with realized volatility as the underlier for a derivative contract (and as a major factor driving implied volatility dynamics) is that it typically depends not just on the beginning and ending asset price, but on the actual path the price follows over the option's lifetime. This generally requires execution time-heavy Monte Carlo simulation. By exploiting the recombining structure of the tree, the authors are able to construct an extremely efficient single-pass procedure based on computing the conditional expected future variance from each node, as they step backward through the lattice. Performance, as demonstrated in a few basic examples, can easily be orders of magnitude faster than Monte Carlo to achieve

equal or better accuracy. Moreover, the approach can be applied on a broad range of derivative contracts and lattice structures.

Next is an analysis of the behavior of implied volatilities (IVs) in exchange traded funds (ETFs) based on sector indexes, such as Energy, Financials, Technology, etc. Recent research provides strong evidence there is a significant volatility risk premium in option IVs and, moreover, that there is both a systematic market-wide volatility factor (proxied by the VIX?) and also an idiosyncratic component in individual stock option IVs, and the risk premia on the two types of volatility behave quite differently. A sector ETF contains many individual stocks, as in a broad market index, but it also is exposed to idiosyncratic shocks at the industry level. Marks and Simon find significant effects for both types of risk, with very interesting differences in their levels and behavior. The third article, by Figlewski and Frommherz, looks at how innovations to the market's information set, that will be incorporated in IVs for all S&P 500 index derivatives, flow into the market via the various venues for trading options on S&P-related securities, namely SPX options, options on the E-mini futures contract and options on the SPDR ETF. Looking at information leadership in both the price and volatility dimensions, we find that although all three markets do exhibit some leadership in information flow, by June 2015, when our sample is drawn, the ETF market appears to have become the most dominant. Within the individual options markets, the greatest information flow seems

to come from out of the money (OTM) puts, although OTM calls are most important for the cash index SPX options. The final paper in this issue is on a new kind of real estate-based derivative, the "rent-to-own" contract. The purpose is to allow an individual who might like to buy a house but is currently not creditworthy enough to qualify for a mortgage loan to take possession of the house as a renter, with what amounts to a call option to purchase it at a fixed price during the term of the lease. Jaggia and Patel model the RTO contract, taking into account both the dynamics of house prices and also the evolution of the "Tenant-Buyer's" financial condition.

I will end this Editor's Letter by offering my heartiest congratulations to Bruce Tuckman, an NYU colleague, friend, and co-instructor with me on a course called "Trading in Cash and Derivatives Securities" that we have taught to Stern MBA students for the past several years. Tuckman has recently been named as the new Chief Economist at the Commodity Futures Trading Commission. This is an excellent appointment. Although I, and the students at Stern, will certainly miss him, his deep experience and expertise in both academic and real-world derivatives, and his fundamental good sense, are more needed in Washington today than at NYU. We wish him good luck and much success in his new position.

Stephen Figlewski
Editor