

D THE JOURNAL OF DERIVATIVES

VOLUME 23, NUMBER 3 SPRING 2016

STEPHEN FIGLEWSKI	Editor
SANJIV DAS	Co-Editor
ROBYN VANTERPOOL	Editorial Assistant
<hr/>	
HARRY KATZ	Content Production Director
DEBORAH BROUWER	Production/Design
<hr/>	
CATHY SCOTT	Content Director
<hr/>	
DESSI SCHACHNE	Marketing Director
DENISE ALIVIZATOS	Marketing Manager
<hr/>	
ANTON BORISSOV	Business Development Manager
<hr/>	
WILLIAM LAW	Regional Sales Manager
<hr/>	
DEWEY PALMIERI	Reprints Manager
<hr/>	
CHERLY BONNY	Customer Service Manager
<hr/>	
MARIJANA SARAC	Finance Manager
NICOLE FIGUEROA	Business Analyst
<hr/>	
BRUCE MOLINA	Digital Advertising Operations
<hr/>	
DAVID ANTIN	CEO
DAVE BLIDE	Publisher

As always, one needs to be careful what one wishes for. Or even talks about, in some cases. Long-time readers of these Editor's Letters know that one of my frequent grants has been about the very low levels of implied volatility in options even while news about impending events in the near, but not immediate, future indicate that uncertainty ought to be at extraordinary levels. Well, after shrugging off years filled with fights over shutting down the U.S. government or defaulting on government bonds, persistent unemployment in Europe at rates that once would have been considered shocking, erosion of the labor force in the United States, extreme volatility in China's stock market, global warming (of course), collapsing commodity prices, and more, volatility has finally arrived. The VIX index that hovered around 14 for the last several years has suddenly jumped into the mid-20s since the start of 2016.

It is now the beginning of February, and the stock market is reeling from its wild ride over the last month. The first four days of January 2016 were the worst start of the year ever for the DJIA. Whatever happened to "the January effect"? This was one of the first of many "anomalies" uncovered by academic researchers in the post-1960s efficient markets era. I call it that not because markets *were* efficient in this period but rather because they were *assumed to be* efficient, to the point that contradictory evidence was strongly questioned and often downplayed. But the January effect, which held that the stock market tends to rise in the first couple of weeks of the calendar year, especially for small-capitalization stocks, was so basic and so strong statistically that numerous attempts to discredit it largely failed to do so. Extensive follow-up research uncovered strong January effects in many stock markets around the world. Theories were floated, yet none was ever really successful in explaining where the effect came from. Eventually, however, the market began to behave as efficient markets do—that is, profit opportunities based on publicly available information disappear.

I guess we academic types ought to be pleased that the stock market is behaving less anomalously and more in line with our theories. And yet, I confess that I do miss the January effect.

Turning to this issue of *The Journal of Derivatives*, our first article, by Bernard, Boyle, and Chen, proposes a new wrinkle on

D THE JOURNAL OF DERIVATIVES

option-based executive compensation plans. One reason option grants are popular with companies is that the payout is a function of its performance in the future, so the executive has a strong incentive to work hard and to make management decisions that raise the value of the stock. If the firm does badly, the cost of executive compensation is reduced. The authors show that a more efficient compensation scheme using power options can provide the same utility to the executive but costs less for the firm. The second article, by Lehnert, Lin, and Martelin, takes a fresh look at an old anomaly in the options market, first observed by Stein more than 20 years ago: Implied volatilities (IVs) for long-maturity options ought to be substantially less sensitive to market events than IVs for short-maturity contracts, but instead they appear to “overreact” to short-run shocks. The puzzle can be resolved by noting that Stein was comparing the behavior of risk-neutral volatility with empirical volatility, but the two are not identical. The authors show that mean reversion for risk-neutral volatility is much slower than for the empirical volatility of the returns series, and their empirical results support the argument.

Our third article looks at one of the fastest growing classes of derivative securities: exchange-traded funds (ETFs). An ETF is a claim on the return from an investment portfolio. Most ETFs are designed to track a particular industry or segment of the market, sometimes offering levered and/or inverse exposure. Tang and Xu consider nine ETFs, all tied to the oil market. Some are based on portfolios of oil stocks; others use futures to mimic the behavior of the price of crude oil. Interestingly, those tied to oil stocks track the stock market better than the oil market, while those based on futures better capture fluctuations in the price of crude oil. But all of the ETFs have a hard time achieving the levered returns they are targeting, for several reasons the authors explore.

Next, Zimmermann digs into the mechanics of adjusting the terms of an option or a convertible bond so that

the option value does not change when the stock goes ex-dividend. He shows that the standard “re-striking” method appears to maintain option value, but it fails to account for a change in volatility caused by the payout. A new approach resolves the difficulty. Finally, Daigler, Dupoyet, and Patterson show how to make creative use of the relationship between the futures price for the VIX and the price of a variance swap, which arises from the convexity correction required to convert between expected variance and expected volatility. The adjustment involves the volatility of volatility, or in this case, the volatility of the VIX, so implied convexity becomes an estimator of this important parameter. The article shows how this works and explores how implied convexity behaves over time.

Today is Super Sunday. In case some non-American might not know about Super Sunday, it is the day of the NFL Super Bowl, which is the national championship game in professional football. (And in case one might not know what American *football* is, note that it has nothing to do with soccer.) This brings up another favorite stock market anomaly, which is that if the winning team in the Super Bowl is from the NFC (National Football Conference), the stock market goes up for the year, and if the winner is one of the teams from the AFC (American Football Conference), the market falls. This investment strategy has been right for the past seven years in a row—and more than 80% of the time before that.

And this year’s Super Bowl winner is... The Denver Broncos from the AFC! Hooray for the champions!

(Stocks are already down more than 1.25% the next morning, and the market isn’t even open yet! Who says the market isn’t efficient?)

Stephen Figlewski
Editor