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PITFALLS OF USING LEVERAGED SHORT ETFs AS "NATURAL HEDGES"

By Yan Peng

In the article titled "*Variable Annuity: Risk Management through Breakthrough Product Innovation*,"¹ which was published in the September 2009 issue number 17 of the "Risk Management" newsletter, the author proposed an innovative product design by introducing additional "inverse funds"

that are negatively correlated with existing funds to achieve "natural hedges" at the product design phase. Intuitively, by allowing investors with different views to long and short the market at the same time, the tail risk to the insurance companies will be mitigated. As an example, the authors proposed to create a synthetic "short fund" by packaging a one-third position in the Financial Bear 3X (FAZ) index and two-thirds in the Russell 1000 Financial index. The underlying assumption is that FAZ can be used as a potential hedge to the Russell 1000 Financial index. Is this really the case?

The purpose of this article is not to explore the practical plausibility (For example, does it create controversy by allowing policyholders to "short" the market? Does it promote market integrity and curb excess volatility?) of the concept of allowing policyholder to short the market, but to point out some of the potential pitfalls by using the leveraged short ETFs (a.k.a. ultrashort) as the "inverse funds" to hedge your portfolio.

An Example Let's start with a simple example. Let's say you were spot-on accurate with your bearish call on the financial sector back in later 2008 and you decided to aggressively capitalize on your call by investing with FAZ, the Direxion Daily Financial Bear 3X Shares. Sounds pretty good, right?

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// PROSHARES AND DIREXON, THE TWO MAIN PRODUCERS OF THESE INSIDIOUS LEVERAGED ETFS, ACKNOWLEDGED THAT THESE FUNDS ARE AIMED ONLY TO TRACK DAILY CHANGES. //

You were right there when FAZ was first introduced on 11/06/2008 and you invested \$1,000 right after the market was open when FAZ was traded at \$60.22 per share. By the end of 2008, the Russell 1000 Financial Services Index returned -12.75 percent since 11/06/08. How did you do? Intuitively, you probably expect a return of approximately 38 percent, or three times 12.75 percent, right? Wrong! You actually lost 41 percent. How did this happen?

Table 1:
Historical Prices/Return of FAZ vs. Russell 1000 Financial Services (RGS) Index

		11/6/08 ²	12/31/08	3/6/09	12/31/09
Price	Direxion Daily Financial Bear 3X Shares (FAZ)	60.22	35.7	104.07	19.43 ³
	Russell 1000 Financial Services (RGS) Index	749.71	654.09	351.45	767.71
Return	Direxion Daily Financial Bear 3X Shares (FAZ)		-40.72%	72.82%	-93.55% ⁴
	Russell 1000 Financial Services (RGS) Index		-12.75%	-53.12%	2.40%

Table 2:
The Four Worst Performing Sectors and Associated Double-Leveraged Short ETFs

Sector	Double-Levered Short ETFs
Real Estate	SRS - ProShares UltraShort Real Estate
Chinese Stock	FXP - ProShares UltraSh FTSE/Xinhua China 25
Oil & Gas	DUG - ProShares UltraShort Oil & Gas
Financial	SKF - ProShares UltraShort Financials

As a patient investor, you shrugged off the confusion and kept invested. On 3/6/2009, the Russell 1000 Financial Services Index closed at its March low of \$351.45 or returned -53.12 percent since 11/6/08. Your position on FAZ returned 72.84 percent. Not bad, but it did not make the kind of killing you had expected—isn't it supposed to triple the return to something like 160 percent? If you are not totally shocked by now, let's see the next one. By 12/31/2009, the Index returned 2.4 percent. How about FAZ? It actually returned -93.55 percent. Yes, you read it right—you lost 93.55 percent of your principal. Your original \$1,000 investment became \$64.53.

If you still have disbelief in the above example, let's take a look at another example of these leveraged short EFTs. In the book "Jim Cramer's getting back to even" by Jim Cramer, the CNBC *Mad Money* host showed a striking example of the following double-leveraged short ETFs associated with the four sectors with the worst performance in 2008: together, the four double-bearish funds marked a 30 percent loss in 2008, instead of a 97 percent positive return if you had truly been able to double-short (this part is confusing).

THE FINE PRINT

ProShares and Direxon, the two main producers of these insidious leveraged ETFs, acknowledged that these funds are aimed only to track daily changes. For exam-

¹ <http://www.soa.org/library/newsletters/risk-management-newsletter/2009/september/jrm-2009-iss17-hu.pdf>

² These are the opening prices. For other dates, the closing prices are demonstrated here.

³ FAS had a 1-for-5 reserve split on July 9, 2009. The listed price in the table is not adjusted to reflect the reverse split.

⁴ Adjusted for the 1-for-5 reserve split on July 9, 2009.

⁵ <http://www.proshares.com/funds/prospectus.html?ticker=skf>

⁶ <http://www.proshares.com/media/documents/ProSharesFactSheetSKF.pdf>

ple, in the prospectus of SKF,⁵ the ProShares UltraShort Financials, states clearly that the objective of the fund is to “seek inverse investment results for a single day only, not for longer periods” and “the Fund does not seek to achieve its stated investment objective over a period of time greater than one day.” Put in another word, it is for day traders who want to place a leveraged bet on a specific sector in a given day and it cannot be used as an inverse fund for hedging purpose for an extended period of time. One of the selling points listed on the factsheet⁶ SKF is “no margin account.” Translation: it is a truly ingenious way to get around the margin rules. In his book, Jim Cramer called it “*weapon of financial mass destruction, aimed directly at whatever poor, misinformed investor buys them and makes the perilous mistake of assuming these products do what most of us expect them to.*”

LOUSY LONG-TERM HEDGES

Apparently, those leveraged short ETFs are lousy long-term hedges. Actually, the inverse and leveraged long ETFs are bad long-term hedges too, but why? Some of you probably already figured out, the answer is simple—mostly because of compound interest and path-dependency. As an over-simplified example, I think most people are familiar with the concept that “if you are down 50 percent, you need a 100 percent return to be back to where you were.”

This is similar to what is happening here with those inversed and leveraged funds. Essentially, the impact of compounding a negative return is more pronounced than compounding a positive return of the same magnitude. The impact is further amplified on a leveraged fund.

Let’s demonstrate this with a more realistic two-day example. Let’s say the basic index return is -5 percent in day 1 and 5.26 percent (or $1/(1-5\text{ percent}) - 1$) in day 2. By the end of day 2, you are back to where you were in the beginning of day 1. But how about the return on inverse and leveraged funds based on this index? See the following table: the inverse and double-long index lost about 1 percent, the triple-long and double-short indices lost about 2 percent and the triple-short index lost about 3 percent in this two-day “wax and wane” process even though the tracked base index basically did nothing (returned 0 percent).

	Base Index	Double Long	Triple Long	Inverse	Double Short	Triple Short
Leverage Ratio	1	2	3	-1	-2	-3
Day 1 return	-5.00%	-10.00%	-15.00%	5.00%	10.00%	15.00%
Day 2 return	5.26%	10.53%	15.79%	-5.26%	-10.53%	-15.79%
Ending Value	1.00	0.99	0.98	0.99	0.98	0.97

If you were to repeat this process 10, 20, 30 times, the following table summarizes your return in the end.

⁶ <http://www.proshares.com/media/documents/ProSharesFactsheetSKF.pdf>

// WHEN THE VOLATILITY GOES TO EXTREME LEVEL, JUST AS WE HAVE WITNESSED IN THE FINANCIAL MELTDOWN, IT EATS AWAY YOUR RETURNS ... //

Table 4:
Illustration of Returns With Repeated Two-Day “Wax-and-Wane” Scenario

# of Repeats	Base Index	Double Long	Triple Long	Inverse	Double Short	Triple Short
10	0%	-5%	-15%	-5%	-15%	-27%
20	0%	-10%	-27%	-10%	-27%	-47%
30	0%	-15%	-38%	-15%	-38%	-62%

When the volatility goes to extreme level, just as we have witnessed in the financial meltdown, it eats away your returns. With leverage, the pain is compounded. Essentially, you are creating a short-volatility position and even if you are betting on the correct direction, the short-index or long-index position could be outweighed by the short-volatility position. Shorting volatility in a volatile market? It is probably the last thing you want to do.

Interestingly and ironically, research showed that “*these funds, due to their structure, actually contribute to the volatility, thus directly contribute to their own failure as instruments for anything other than a day trade*”!

Remember the great investor Warren Buffet’s Rule of Investing? Rule No.1: Never lose money. Rule No. 2: Never forget rule No. 1. It is even worse if you lose money without knowing why and how. 📌

⁷ “Why Short Sector ETFs Aren’t So Smart” by Eric Oberg.
<http://www.thestreet.com/story/10454678/1/why-short-sector-etfs-arent-so-smart.html>



Yan Peng, FSA, MAAA, is a senior consultant with the Actuarial, Risk and Analytics practice of Deloitte Consulting in Chicago, IL. He can be reached at yapeng@deloitte.com.