
❖ Horizon Asset Management, Inc. ❖

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Interim Market Commentary

Leveraged ETF's
CDSs on Exchanges

The reason why worry kills more people than work is that more people worry than work.
-- Robert Frost

Exchange Traded Funds: Double & Triple Shorts

In one of his essays, G.K. Chesterton advanced the very interesting hypothesis that one should never argue with a lunatic, because you will probably get the worst of it. There's a certain clarity in the work of a lunatic; it's merely premise and conclusion, and reality is frequently much more complex than that. For example, if a lunatic were to assert that the entire world is but a grand conspiracy, my natural rejoinder would be that, not only am I not a member of the conspiracy, but none of my acquaintances are members either. The truly unanswerable response from the lunatic would be "What do you expect a conspirator to say?" It has its own self-validating logic.

In that vein, if one were to assert that the S&P 500, having declined by 56%, is only about halfway through its decline if one equates the current cycle to that of the Great Depression when the market fell by 80%, and if one were to further assert that an additional 50% decline would be required to arrive at negative 80, then there would be a fineness of logic to that assertion that would be genuinely unanswerable. If I were to argue the opposite position by asserting that, even if I granted that this is exactly similar to the Great Depression, from a purely arithmetical perspective, a decline of 1.2% a day for 61 days would create enough negative performance to arrive at negative 80 for the S&P. Therefore, using that as an example, we would be 61 days away from the bottom, unless the rate of diminution was greater than that.

The unanswerable response from the pessimist would be to call me an optimist, and I would lose the argument. Though I could give other examples, I'll refrain. Instead, I'll look at the world from the pessimistic perspective, which is that the return on equity for companies both private and public will plunge, and they will remain low for an indefinite period of time. There's a problem with buying commodities, because demand for commodities will decline with the decline in the economy. There's a problem with buying corporate credits and municipal securities, because the credit worthiness of the enterprises are now all called into question.

There's even a problem with buying United States Treasury securities, because the credit worthiness of even the United States government has now been called into question, as you can tell from CDS spreads on Treasuries. Even if that were not the case, there is the ever-present danger of inflation, which will erode the value of money. Of course, one can't buy gold, because gold has increased in value so much over the last five or six years, that it's clearly a bubble.

All of the possibilities are closed, and all we can do from a public policy sense as a society is to watch the tragedy unfold. It's too late to take any remedial action whatsoever. The

only approach that might be advisable would be to purchase some of the many short-oriented Exchange Traded Funds (ETFs) because, unlike all the other assets in the world, these funds have the possibility of earning an alluring rate of return. Having lost the argument, I decided that I would undertake the study of short-oriented ETFs for this week's *Musings*.

The number of short-oriented ETFs is far greater than anything I had originally believed to be the case. Table 1 contains a partial list that includes what appear to be the most popular short-oriented ETFs, followed by the volume measured in shares (as of March 6th). While the many assertions that our society is rapidly de-leveraging may be true in the world of corporate balance sheets, one can see at a glance that it is certainly not true in the case of short-oriented ETFs. Measured in volume, the most popular short-oriented ETFs are clearly those that are most leveraged. I think that's indisputable from the data presented in Table 1 (page 5).

Short-oriented ETFs have made their appearance on all the major continents, and they exist in most countries. I started to list individual Canadian short-oriented ETFs, and I was going to list similar British and other European funds, but I grew weary of the exercise. Suffice it to say that, in addition to the funds listed here, there is a variety of other ETFs that are short-oriented; for example, in Britain you'll find a company called ETF Securities.

In Canada, there is a popular series of short-oriented ETFs called the Horizon Series. I claim no relationship whatsoever to that enterprise but, since it bears the name Horizon, I thought it behooved me to list those securities that I could identify. As part of this exercise, I counted at least 33 leveraged commodity ETFs in the United Kingdom, and 35 oil exchange traded funds worldwide. The list in Table 1 is not exhaustive but, nevertheless, supports my point about leverage.

The one common feature shared by all of the leveraged short-oriented ETFs is that they all advocate the constant leverage model of investing. In that model, the short-oriented ETF engages in a series of swap transactions at the end of each trading day so that the following day it will be a multiple, in the inverse sense, of the performance of the index that it tracks. For example, a 2x short-oriented fund will transact during the course of the day, or by the end of the day, so that in the next day's trading, whatever the performance of the underlying index is, the short-oriented ETF will be the inverse of 2x that performance.

Table 1: Short-Oriented Exchange Traded Funds	Share Volume (in millions)
Direxion Financial Bear 3x (FAZ)	19.730
Direxion Large Cap Bear 3x (BGZ)	13.450
Direxion Small Cap Bear 3x (TZA)	5.730
Direxion Developed Markets Bear 3x (DPK)	0.051
Direxion Mid Cap Bear 3x (MWN)	0.110
Direxion Emerging Markets Bear 3x (EDZ)	0.099
Rydex Inverse 2x S&P Select Sector Enrgy (REC)	0.015
Rydex Inverse 2x S&P Select Fincl (RFN)	0.082
Rydex Inverse 2x S&P Select Tech (RTW)	0.001
Rydex Inverse 2x S&P Select Health (RHO)	0.007
Rydex Inverse 2x S&P Select Energy (REA)	0.004
Rydex Inverse 2x S&P 500 (RSW)	0.532
Rydex Inverse 2x Midcap S&P (RMS)	0.038
Rydex Inverse 2x Russell 2000 (RRZ)	0.082
Short QQQ ProShares (PSQ)	0.547
Short Dow 30 ProShares (DOG)	2.000
Short S&P 500 ProShares (SH)	4.670
Short Midcap 400 ProShares (MYY)	0.300
Short S&P Small Cap 600 ProShares (SBB)	0.043
Ultrashort QQQ ProShares (QID)	28.980
Ultrashort Dow 30 ProShares (DXD)	20.640
Ultrashort S&P 500 PrShares (SDS)	70.310
Ultrashort MidCap 400 ProShares (MZZ)	2.690
Ultrashort Small Cap 600 ProShares(SDD)	0.097
Ultrashort Russell 2000 ProShares (TWM)	7.350
Short Financials ProShares (SEF)	0.137
Short Oil & Gas ProShares (DDG)	0.008
Ultrashort Consumer Services ProShares (SCC)	0.242
Ultrashort Financials ProShares (SKF)	21.280
Ultrashort Health ProShares (RXD)	0.058
Ultrashort Real Estate ProShares (SRS)	20.120
Ultrashort Semiconductor ProShares (SSG)	0.307
Ultrashort Technology ProShares (REW)	0.352
Ultrashort Telecommunications ProShares (TLL)	0.003
Ultrashort Utilities ProShares (SDP)	0.030
Short MSCI EAFE ProShares (EFZ)	0.060
Short MSCI Emerging Markets ProShares (EUM)	0.155
Ultrashort MSCI EAFE ProShares (EFU)	0.415
Ultrashort MSCI Emerging Markets ProShares (EEV)	2.950
Ultrashort MSCI Japan ProShares (EWV)	0.009
Ultrashort FTSE/Xinhua China ProShares (FXP)	4.670
Ultrashort 7-10 Year Treasury ProShares (PST)	0.116
Ultrashort 20+ Year Treasury ProShares (TBT)	6.310
Ultrashort DJ-AIG Commodity ProShares (CMD)	0.007
Ultrashort Gold ProShares (GLL)	0.259
Ultrashort Silver ProShares (ZSL)	0.315
Ultrashort Euro ProShares (EUO)	0.142
Ultrashort Yen ProShares (YCS)	0.123
Direxion Energy Bear 3x (ERY)	2.240
MacroShares \$100 Oil Down (DOY)	0.001
Market Vectors Double Short Euro (DRR)	0.029
PowerShares DB Agriculture Double Short (AGA)	0.020
PowerShares DB Agriculture Short (ADZ)	0.001
PowerShares DB Base Metals Double Short (BOM)	0.003
PowerShares Commodity Double Short (DEE)	0.007
PowerShares Commodity Short (DDP)	0.002
PowerShares DB Double Short Crude Oil (DTO)	0.326
PowerShares DB Gold Double Short (DZZ)	0.901
PowerShares DB Gold Short (DGZ)	0.033
PowerShares DB US Dollar Index Bearish (UDN)	0.458
PowerShares DB Crude Oil Short (SZO)	0.005
PowerShares DB G10 Currency Harvest (DBV)	0.110
Canadian Horizon BetaPro COMEX Gold Bullion Bear Plus (CA: HBD)	0.038
Canadian Horizon BetaPro NYMEX Crude Oil Bear Plus (CA: HOD)	1.900
Canadian HorizonBeta Pro NYMEX Natural Gas Bear Plus (CA: HND)	0.109
Canadian HorizonBeta Pro S&P/TSX 60 Bear Plus (CA: HXD)	1.890
Canadian HorizonBeta Pro S&P/TSX Financials Bear Plus (CA: HFD)	0.188
Canadian HorizonBeta Pro S&P/TSX Global Gold Bear Plus (CA: HGD)	2.140
Canadian HorizonBeta Pro S&P/TSX Global Mining Bear Plus (CA: HMD)	0.008

One of the unquestionable mathematical consequences of the constant short-leverage model of investing is that when the index reaches a bottom, if it ever does, the maximum amount of short exposure is achieved there, not at the top. The constant ratio short exposure is what an experienced short seller would do if he or she believed that a given company was going bankrupt because, as a company declines in value, the exposure is lessening. To maintain constant exposure, measured as a percent of one's portfolio, one needs to short ever more securities as the price declines. At any point in time, it has the interesting arithmetical attribute that the return is always 100%, based, of course, on the assumption that the security will decline to a value of zero.

For example, a security with a price of \$20 that declines to \$10 has produced a 50% rate of return, but would, at that price, offer the portfolio only half the exposure it enjoyed at a price of \$20. Therefore, the number of shares would have to double for the portfolio to have the same exposure. Whether viewed from a point in time when the price was \$20 or when the price was \$10, the potential rate of return was always 100%. It's a bounded rate of return, unlike in a long investment for which the potential rate of return can be infinite. Ironically, the potential loss on a short sale can be theoretically infinite, although it's rarely infinite, but the profit is always bounded by 100%.

Another observation is that leveraged short-oriented ETFs invariably do not realize good long-term rates of return. For a classical example of that fact, one can study the performance of the short-oriented financial funds for the year of 2008. The financial indices declined enormously, but the returns realized by the short-oriented funds for those indices were not very large, the reasons for which are several-fold.

There are certain transaction costs that inure to the fund resulting from the need to continually rebalance. More important is the danger of the constant leverage model as evidenced by the huge losses that were realized on the swap positions of financial sector ETFs when those stocks rebounded late in October 2008. As the index increased in value, in order to maintain the constant leverage model, the funds had to reduce their exposure. As the index rose, the exposure was reduced and, therefore, even when the index began to descend again, the fund didn't have sufficient exposure to regenerate the returns, given that a certain amount of capital had been lost.

In light of the situation just described, one would think that the leverage model would not be popular with investors, but quite the contrary is true. The popularity of the 2x leverage model was surpassed when the 3x leveraged funds were unveiled. The 3x leveraged funds have proven to be even more popular than the 2x leveraged variety. The Direxion Financial Bear 3x ETF trades 19.73 million shares a day at a price of \$104.07, based on the Friday, March 6, 2009 closing price, which equals \$2.05 billion. However, that truthfully isn't the proper measure of the dollar volume *versus* the share volume of that fund, because the nominal value, given the 3x leverage, is 3 times \$2.05 billion, which is \$6.15 billion of daily trading. That's the amount of money that is actually at risk.

To put that figure in its proper context, the daily trading value of Exxon, the largest company on the S&P 500, measured in dollars, is only \$2.7 billion. Since Exxon is one of the most popular stocks traded in the United States, I think that it is legitimate to assert that the Direxion Financial Bear 3X ETF is quite a popular security that has obviously captured the imagination of the investment public.

I engaged in another exercise to select financial companies, and to measure their daily trading volume during recent days with a view to arriving at a figure, on a cumulative basis, that's more or less equal to the \$6.15 billion of trading value of the Direxion Financial Bear 3x ETF mentioned above. Taking the sum of the entire daily volume value of the securities listed in Table 2 (below) results in a total of \$6.121 billion. The Direxion Financial Bear 3x ETF which, interesting enough, is not the only inverse financial fund in existence, has a daily trading volume value equal to that of eight of the largest financial services companies in existence. Therefore, I think it's fair to say that the short interest dominates.

Table 2: Daily Trading Volume Value

	(\$ in millions)
Bank of America	\$891
Wells Fargo	\$955
JP Morgan	\$1,226
Citigroup	\$280
American Express	\$190
Morgan Stanley	\$628
Goldman Sachs	\$1,650
US Bancorp	\$301
Total	\$6,121

To understand this point further, the entire leveraged “bet” of the three popular financial short leveraged ETFs listed below in Table 3 is the sum of their trading volume value, which is \$16.8 billion, or about 2.75 times the amount of daily trading volume value of the eight largest financial services companies, and 6.22 times that of Exxon.

Table 3: Daily Trading Volume Value

	(\$ in millions)
Direxion (FAZ)	\$6,150.0
Rydex (RFN)	\$13.6
ProShares (SKF)	\$10,640.0
Total	\$16,803.6

There are certain mechanics to the creation of leveraged inverse ETFs that should be discussed and understood. Viewed from the point of view of the investment public, it is undertaking a hedge against presumed ownership of financial stocks or, alternatively, it is

undertaking a direct investment. It's hard to know what the motivation of the traders in these investments are, but I would dare say it's much more likely to be the latter rather than the former. The character of the underlying index has undergone a dramatic shift in the last year and a half.

For purposes of illustration, I'll use the iShares Dow Jones US Financial Sector (IYF). As can be seen below in Table 4, due to the decline in Citigroup's market capitalization, it comprises only 0.77% of IYF at the moment. As the leading banks fall in value, others that are not necessarily leading companies, become greater and greater proportions of the IYF index and, therefore, effectively become subject to short-selling volume.

Table 4: DJ US Financial Sector (IYF)

	% Value of IYF
JP Morgan Chase	8.65%
Bank of America	2.76%
Wells Fargo	4.45%
US Bancorp	2.17%
Citigroup	0.77%
T. Rowe Price	0.76%
PNC Financial Services Group	1.00%
BB&T Corp.	1.00%

For example, BB&T Corporation is a bank that, as far as I can tell, has very little, if anything, to do with credit default swaps, subprime lending or any of the other dangerous forms of portfolio exotica. In spite of that, BB&T now represents 1% of the IYF financial index. I presume the situation for the others is similar. On February 24, BB&T raised its dividend. It has a market capitalization of \$7.7 billion, and shareholder's equity, or book value, of \$16 billion; therefore, it trades at slightly less than 50% of book value.

As far as I can tell, BB&T is a top tier performer that appears to be gaining market share. Its provision for loan losses is 1.62% of loans, its Tier 1 risk-based capital is 12% of total assets and its net interest margin is 3.68%. As I noted previously, it appears to have no involvement with toxic assets but, unfortunately, it does have involvement with the index. As a consequence, as it has achieved a greater percentage of the index, it inevitably became subject to short-selling pressure, and it has declined by 50% in the first nine weeks of 2009.

PNC Financial Services Group also represents a 1% position in IYF. Though PNC's prospects are perhaps not as interesting BB&T's, I've yet to see anyone assert that it is a future Citigroup. Yet, PNC is down over 60% year to date. US Bancorp, with its 2.17% weight, has almost the same weight in the index as Bank of America, and finds itself under

pressure. At the moment, Wells Fargo represents 4.45% of the index; historically, it represented a smaller weight.

If this trend continues for very many weeks, these banks will have proportionally smaller weights in the index; therefore, within the financial services indices, non-banks would have the greater weight. People would find themselves in the position of shorting an index for a perceived characteristic that the index would no longer have. It's the sort of situation that you find in bubbles when people ignore reality.

This mechanism is not dissimilar to that of credit default swaps (CDSs). The credit default swap mechanism, a major cause of the economic problems of the world, is really a form of leverage. There's much more notional amount to a CDS than there is to the debt that a CDS insures. Therefore, as the credit spread widens, the CDS liability increases disproportionately, and results in a requirement to post collateral. The collateral post itself widens credit spreads, because the liquidity of the various participants in the credit default swap market is now somewhat called into question. The credit spread widens, causing the CDS liability to rise, creating the requirement post more collateral, which further widens the credit spread. It's a continuous feedback loop that goes on until an external force disturbs the inertial forces.

On Friday, March 6, 2009, one such external force appears to have been introduced in the system when the credit default swap clearing arm of the Intercontinental Exchange was granted permission to begin operations on Monday, March 9, 2009. In the short run, very little should be expected of this for several reasons. First, the sheer magnitude of the credit default swap volume means that it will be some time before a meaningful number of credit default swaps are cleared through the system. When enough of them have been cleared, the money from the collateral posts that is currently trapped in escrow accounts will be freed. The clearing mechanism for CDSs will not be radically different from the one for commodity futures. Collateral will readily flow through the counterparties rather than be immobilized in escrow accounts. Therefore, even very dramatic moves, positive or negative, in credit spreads will not lead to a liquidity drain the way they have been.

Reasonable minds and observers may dispute the actual notional amount of CDSs. There are some who say the notional amount is only \$33 trillion; others assert that it's as high as \$48 trillion. There are other estimates as well but, if one examines the magnitude by which credit spreads have widened during the last nine months, one can imagine what percentage of the notional amount of CDSs is now trapped in escrow accounts for collateral purposes. Irrespective of the numbers one uses, that amount is clearly a major proportion of the money supply of the world that was drained from the liquidity of the system. Clearing of CDSs on an exchange proposes to reverse that process.

The Europeans have not announced their choice for CDS clearing. Intercontinental Exchange asserts that it will be ready to clear for European CDSs at the end of the first half of the year. The regulators say that within not very many months, the Europeans will

follow the Americans by instituting CDS clearing. This process is likely to change in the not-too-distant future, and people should take note of it.

Regulators might wish to subject leveraged ETFs to the net asset test provisions of the Investment Company Act of 1940. That Act provides that no fund registered under the SEC can have an asset to borrowings ratio of less than 200%. ETFs are launched under special regulatory exemptive relief and, as such, they are not subject to the Act's guidelines. If the regulators were to demand compliance with the net asset test provisions of the Act, it would do much to protect the public.

At the end, there will be a denouement when the indices will bottom, and there will be maximum exposure at the very moment when the index has an enormous upward move. If the underlying indices have a move not dissimilar from the upward move in the summer of 1932 when the Dow Jones Industrial Average bottomed, the losses could be staggering. The author Robert J. Shiller notes in his book called *Market Volatility* that the Dow Jones Industrial Average increased by 83% month-to-month between July and August of 1932. The Dow Jones in that era was at least a diversified index, whereas the financials are in a non-diversified index that is probably very dangerous to be short.

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