LEVERAGED & INVERSE LEVERAGED ETFS:
A detailed analysis

September 8, 2009

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Disclosure

This report was commissioned by BetaPro Management Inc. and that represents a potential conflict of interest. Nonetheless, the opinions expressed herein are our own. This is the fourth report that we've prepared at the request of a sponsor of any product since our 2003 incorporation. We have rejected at least twice as many requests for similar reports from other companies during the same six-year period.

Two common reasons underlie our motivation for accepting so few requests, of this type, from product sponsors. We are happy to work on reports requested of us which are entirely consistent with our previous research and prevailing opinions. Alternately we'll accept an engagement when we feel that products are misunderstood or are being unfairly criticized. This report falls into the latter camp.

While we cannot eliminate the potential for conflict, we believe that this report has been prepared independently from BetaPro Management or related entities. They have reviewed the report for accuracy but have not otherwise influenced or modified our analysis, opinions or conclusions. Dan Hallett & Associates Inc. does not currently have, nor has ever had, any other business relationship with BetaPro or related entities other than the preparation of this report.

Executive Summary

BetaPro Bull Plus and Bear Plus ETFs aim to track double the daily returns, and double the inverse daily returns, of specific benchmarks. Investors and advisors must understand that this can be vastly different than tracking twice the return over some longer holding period. The difference lies in the fact that double ETFs effectively compound the doubling of returns on a daily basis. Simply taking the return over some longer period and doubling it does not compound the 'doubling' effect. Longer measurement (or holding) periods, higher index volatility, and higher absolute values of returns each contributes to widening the gap between holding period returns and the double daily exposure tracked by double ETFs.

In fact, some of the common myths and criticisms surrounding double ETFs are based on a simple misunderstanding of their intended exposures. While some have expressed frustration about the lack of tracking of holding period returns, it's important to realize that tracking holding period returns risks losing more than 100% of the original capital. BetaPro's structure, which is rebalanced daily, is needed to limit losses to 100% in a double ETF and provide investors with non-recourse exposure. When measured against their intended daily exposures, BetaPro double ETFs have seen excellent tracking of their target benchmarks. Longer holding periods, however, have been observed with good tracking of index holding period returns. Volatility and a couple of other factors, however, will ultimately determine tracking of holding period returns.

When included in a portfolio, BetaPro double ETFs should be used in a way that is consistent with an investor's objectives and constraints. Buying and holding double ETFs should normally be done for short holding periods. To assure accurate tracking of longer index holding period returns, an investor can leverage or short directly, or use double ETFs with a daily rebalancing strategy. In any case, we prefer education to the cigarette-style warnings that critics have demanded of BetaPro double ETFs. Warnings, when read, can protect investors. Education, however, is empowering.

Introduction

We cannot recall, in recent history, a product class that has come under more intense scrutiny than the BetaPro Bull Plus and Bear Plus ETFs (double ETFs). We can't help but feel that the recent barrage of requests for cigarette-style warning labels goes too far and is rooted in a simple misunderstanding of double ETFs.

We are staunch advocates of education to ensure advisors and investors understand the products they recommend and use. Such educational efforts are preferable to the warning label approach.

Accordingly, this report focuses on providing readers with a clear understanding of these products in an effort to promote their responsible and appropriate use.

Specifically, this report:

- looks at direct shorting and leveraging;
- examines the exposure and structure of double ETFs;
- analyzes historical performance;
- touches on some myths and truths of double ETFs;
- provides guidance on how they can be used in a portfolio; and
- ties our analysis together in some closing thoughts.

Direct shorting and leveraging

Key to understanding how double ETFs function is to first reflect on the mechanics of a direct leverage or shorting strategy. Most financial advisors are very familiar with leverage because its use has long been promoted. But let's suppose you want to directly obtain exposure similar to a double ETF. For long exposure, you'd need a brokerage margin account and a line of credit.

In all cases, interest costs are incurred. With margin accounts and unsecured lines of credit, margin calls result from falling market prices which require more cash to be deposited to reduce the loan balance. And in a worst case scenario, not only might the investments fall significantly in value but additional cash might be required to make good on the loan. While secured lines of credit (i.e. home equity lines) don't have margin calls, they are often used to leverage with larger amounts. Leveraging has significant potential downside risk, but it's finite. Profit and loss potential are magnified by leverage.

Shorters also pay interest costs, because they borrow securities, and margin calls can result from rising prices. But a short's profit-loss profile is negatively skewed. Potential losses from shorting are unlimited because there is, in theory, no limit to how high a security's price can rise. A security cannot fall more than 100%, however, putting a cap on the strategy's profits. Being wrong in the short-term (even if a stock's expected decline eventually materializes) can exhaust cash resources. As the saying goes, a short can go broke waiting to be proven right.

Popping the hood on double ETFs

A double long ETF aims to track double the daily return of a specified index. Similarly, a double short ETF aims to track double the inverse daily performance of a specific benchmark. This is very different than double (or negative double) a given index's return over a long holding period. It is also the most misunderstood aspect of double ETFs – and something that admittedly took us some time to fully grasp. Let's illustrate this important difference using the S&P®/TSX® Capped Global Gold Index from June 25, 2007 through June 30, 2009[1].

The index began this two-year period at 269.82 and ended at 315.48, for a total return of 16.92 percent. Many would naturally expect the S&P®/TSX® Global Gold Bull Plus ETF (HGU) to return 33.84% and the S&P®/TSX® Global Gold Bear Plus ETF (HGD) to lose 33.84% for the same period. In fact, HGU lost 41.47% while HGD lost 93.54 percent. These ETFs are not designed to track very long holding period returns.

We've recently come through a period that saw stock indices fall by 50% in North America and 60% to 70% overseas. Many times in the past, stocks have posted equally large gains. But most investors do not want to own an investment that could result in losses exceeding their original capital. To maintain a non-recourse structure and limit losses to an investor's initial capital, double ETFs must rebalance daily[2]. Daily rebalancing of the double exposure results in the compounding of the 'doubling' effect over an investor's holding period. By contrast, simply doubling the holding period return does not compound the 'doubling' of returns – but it can result in losses exceeding 100 percent.

[1] We use June 25, 2007 as the starting point because the S&P®/TSX® Global Gold Bull Plus ETF (HGU) and S&P®/TSX® Global Gold Bear Plus ETF (HGD) were launched on that date.
[2] Daily rebalancing avoids getting too deep in the hole on a short or leveraged long position thereby limiting losses to the fund's NAV – instead of the unlimited losses of shorting for example.

The daily and holding period benchmarks are expressed formulaically below (*R* is the daily index return for each of the 506 trading days in HGU/HGD's history).

2x Long Hldg Pd Benchmark = [(Ending Index Value ÷ Beginning Index Value) – 1] x 2

2x Short Hldg Pd Benchmark = [(Ending Index Value ÷ Beginning Index Value) – 1] x (-2)

2x Daily Long Benchmark = $(1 + 2xR_1) \times (1 + 2xR_2) \times (1 + 2xR_3) \times \ldots (1 + 2xR_{506}) - 1$

2x Daily Short Benchmark = $(1 - 2xR_1) \times (1 - 2xR_2) \times (1 - 2xR_3) \times \ldots (1 - 2xR_{506}) - 1$

The gap between the performance of a double ETF and double the holding period return of an index (long or short) is influenced by the following related factors, in order of importance:

- Higher index volatility = larger gap
- Higher absolute value of returns = larger gap
- Longer time periods = larger gap

It may be surprising to know that the same factors can influence single inverse or short ETFs. The example on the next page shows that a single long ETF should easily track the index return. It also shows that highly volatile returns with a mix of positive and negative returns can play havoc with a single short ETF's tracking of holding period returns. Our hypothetical single short ETF, which simply tracks the inverse of each day's index return, shows a loss roughly equal to the index's loss. Again the reason that the hypothetical short ETF below loses money is because of the effects of compounding very volatile returns. Double ETFs simply magnify this effect.

Single Long ETF

Day	Regular Index Return	Value of $100 invested in index	1x Bull ETF Return	Value of $100 invested in a Bull ETF
0		$ 100.00		$ 100.00
1	5.00%	$ 105.00	5.00%	$ 105.00
2	-10.00%	$ 94.50	-10.00%	$ 94.50
3	7.00%	$ 101.12	7.00%	$ 101.12
4	-6.00%	$ 95.05	-6.00%	$ 95.05
5	4.00%	$ 98.85	4.00%	$ 98.85

Holding Period Return (Index) = -1.15%
Annualized Volatility (Index) = 144%
Holding Period Return (ETF) = -1.15%

Single Short ETF

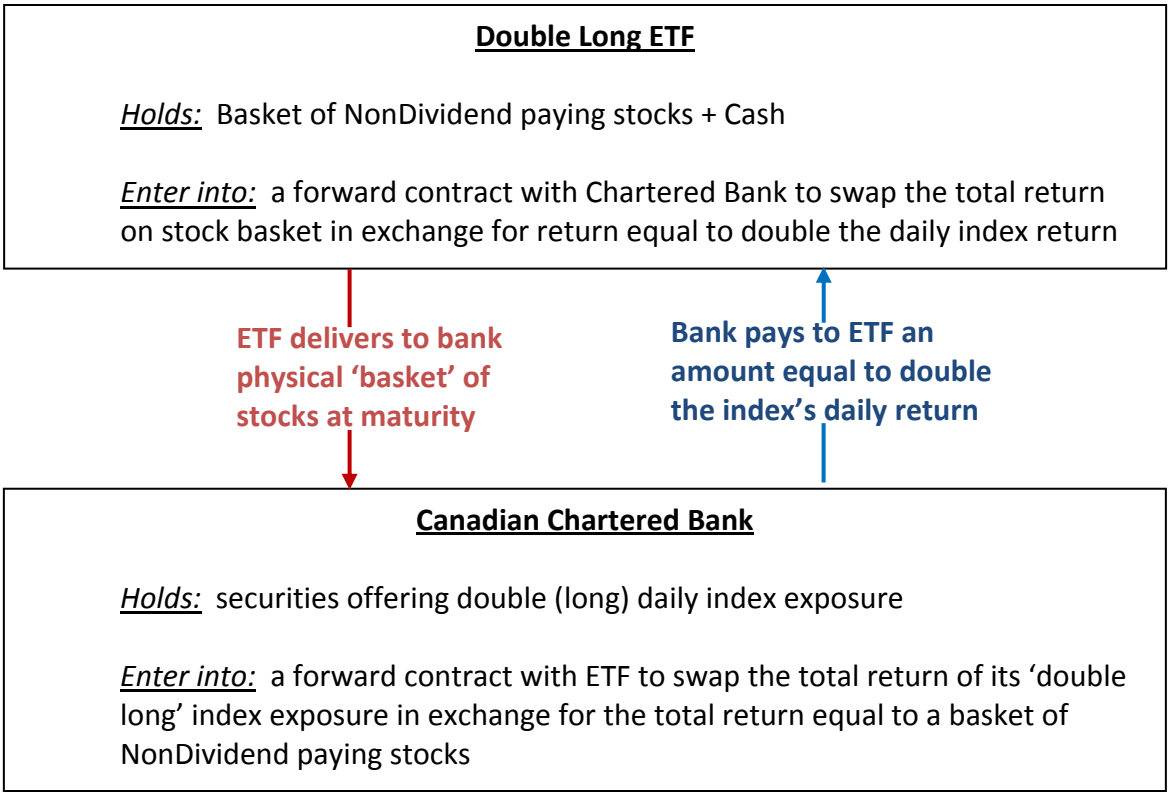
Day	Regular Index Return	Value of $100 invested in index	1x Bear ETF Return	Value of $100 invested in a Bear ETF
0		$ 100.00		$ 100.00
1	5.00%	$ 105.00	-5.00%	$ 95.00
2	-10.00%	$ 94.50	10.00%	$ 104.50
3	7.00%	$ 101.12	-7.00%	$ 97.19
4	-6.00%	$ 95.05	6.00%	$ 103.02
5	4.00%	$ 98.85	-4.00%	$ 98.90

Holding Period Return (Index) = -1.15%
Annualized Volatility (Index) = 144%
Holding Period Return (ETF) = -1.10%

Structure

If you understand how structured bond funds operate, you understand how BetaPro double ETFs obtain their target exposures. Forward or swap agreements are the derivatives of choice for BetaPro ETFs[3]. The diagram on the next page shows how BetaPro uses derivatives (i.e. a forward or total return swap) in order to create synthetic exposure.

[3] U.S. double ETFs often use a combination of swaps and futures contracts. Canadian funds use forwards for tax reasons.



Suppose the above ETF's stocks rise by 5% and the index rises by 7 percent. Without the forward agreement, the ETF would keep its stock gains and the bank would retain the gain from its index exposure. The forward agreement simply requires the ETF to 'swap' its stock gain with the bank's leveraged index gain by making periodic cash payments. So the ETF would deliver $10 worth of stocks to the bank (5% x $200 notional value) and the bank would pay $14 to the ETF (7% x $200 notional value).

Obtaining non-recourse exposure is a major benefit of a synthetic structure but this structure is used mainly for tax reasons. Futures contracts could be used by some BetaPro ETFs, but they result in fully taxable income. Profits from shorting are also fully taxed. Forwards, which attract capital gains treatment, are more tax-friendly. Plus, futures are not customizable and won't provide a precise match to the amount of required exposure.

One potential structural downside is BetaPro's use of one counterparty – National Bank of Canada. Should National Bank fail, the forwards, or swap contracts, may not be honoured. While the failure of one of our big banks is a remote risk, it would be ideal to spread this counterparty risk across 2 or 3 institutions. On the plus side, concentration with one counterparty results in preferential pricing of the forward agreements.

Daily rebalancing

The daily fluctuations of an underlying index necessitate daily rebalancing of the forward agreement notional value[4]. **Tables I** and **II** below illustrate a hypothetical 5-day time frame with extreme swings and the resulting notional value adjustments.

Table I: Hypothetical illustration of a double long ETF

Target Exposure =		2		Double Long ETF				
Day	Beginning ETF NAV	Beginning Notional Value of Forward	Underlying Index Return	ETF Return	Ending ETF NAV	Notional Exposure Before Rebalance	Rebalance of Notional Exposure	Ending Notional Exposure
1	$ 100.00	$ 200.00	-10.00%	-20.00%	$ 80.00	$ 180.00	$ (20.00)	$ 160.00
2	$ 80.00	$ 160.00	10.00%	20.00%	$ 96.00	$ 176.00	$ 16.00	$ 192.00
3	$ 96.00	$ 192.00	-10.00%	-20.00%	$ 76.80	$ 172.80	$ (19.20)	$ 153.60
4	$ 76.80	$ 153.60	10.00%	20.00%	$ 92.16	$ 168.96	$ 15.36	$ 184.32
5	$ 92.16	$ 184.32	2.03%	4.06%	$ 95.90	$ 188.06	$ 3.74	$ 191.80

Table II: Hypothetical illustration of a double short ETF

Target Exposure =		-2		Double Short ETF				
Day	Beginning ETF NAV	Beginning Notional Value of Forward	Underlying Index Return	ETF Return	Ending ETF NAV	Notional Exposure Before Rebalance	Rebalance of Notional Exposure	Ending Notional Exposure
1	$ 100.00	$ (200.00)	-10.00%	20.00%	$ 120.00	$ (180.00)	$ (60.00)	$ (240.00)
2	$ 120.00	$ (240.00)	10.00%	-20.00%	$ 96.00	$ (264.00)	$ 72.00	$ (192.00)
3	$ 96.00	$ (192.00)	-10.00%	20.00%	$ 115.20	$ (172.80)	$ (57.60)	$ (230.40)
4	$ 115.20	$ (230.40)	10.00%	-20.00%	$ 92.16	$ (253.44)	$ 69.12	$ (184.32)
5	$ 92.16	$ (184.32)	2.03%	-4.06%	$ 88.42	$ (188.06)	$ 11.23	$ (176.84)

[4] The notional value refers to the amount of investment exposure. For example, a double long ETF with $100 of net assets will enter into a forward agreement with $200 of notional value. The parties do not exchange the $200 but cash equal to the return (on the $200) of each party's respective investment exposure.

In **Table I,** we start with a double long ETF with $100 in net assets. Since the ETF's exposure is double long, the required notional value of the forward agreement (i.e. effective investment exposure) is $200. On day 1, the (regular) underlying index loses 10 percent, reducing the NAV by $20 (2 x 10% x $100) to $80.

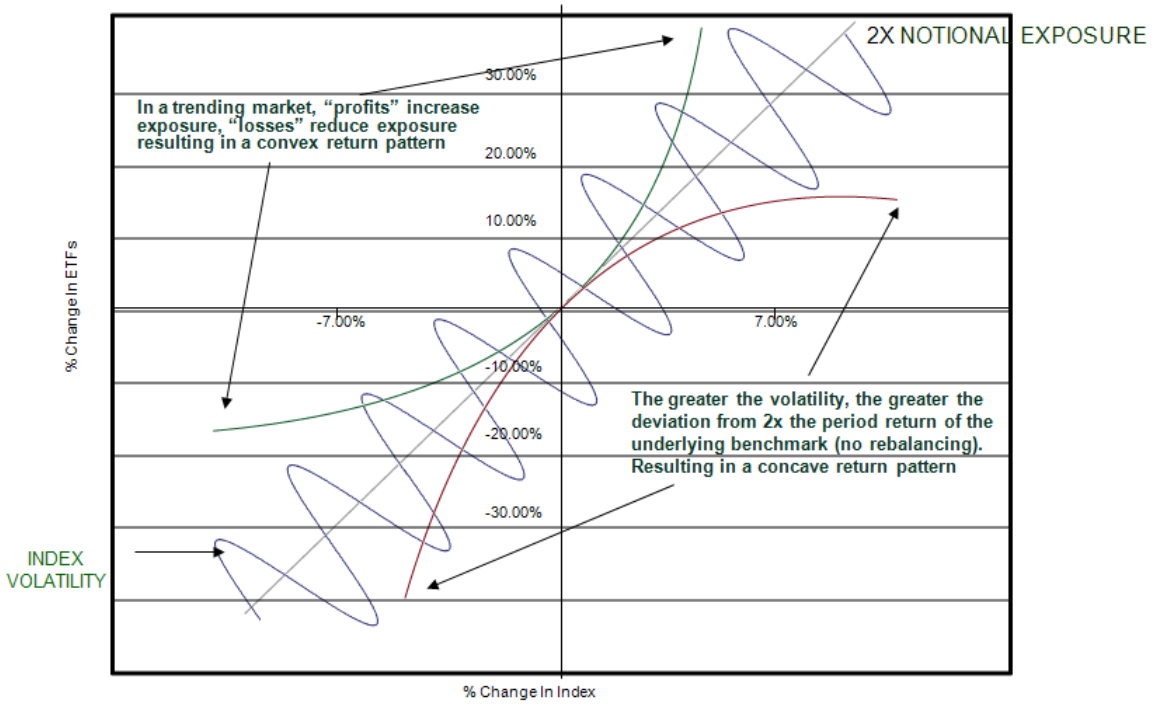
The notional value is also reduced by $20 to $180. Before adjusting the forward agreement, the effective exposure is 2.25 times the index (180 / 80). So, to continue tracking 2 times each day's index return, the new notional value of the forward agreement must be reduced by $20, to $160 (2 x $80). All double ETFs must adjust their forward agreements each day in the same direction as the underlying index return. Accordingly, it's no surprise that turnover of most double ETFs has been high. But the forward agreement fee paid by BetaPro, which averages about 40 basis points, includes all trading costs associated with this daily rebalancing.

Performance analysis

Virtually all BetaPro double ETFs tracked their respective target benchmarks very closely over their respective histories. While soaring volatility wedged gaps between holding period and daily benchmarks, it did not significantly impact BetaPro ETFs' tracking of their 2x Daily Benchmarks.

Appendix A contains tables showing the impact of varying levels of volatility on double ETFs' returns. The areas shaded in green are combinations of return and volatility that result in gains exceeding double the holding period return and losses less than double the holding period loss. For example, a double-long ETF will lose 84% over the course of a year where its underlying index falls 60% in constant fashion (i.e. zero volatility). But if the index rises 60% for the year (again with no volatility), the same ETF will gain 156 percent. Zero volatility results in a double long ETF losing less than twice the index (when it loses) and gaining more than double the index (when it rises). This effect is much more pronounced with double short ETFs.

The chart below, from BetaPro, graphically illustrates some of the same points highlighted in **Appendix A**. It shows that compounding leverage in a trending market enhances gains but reduces losses in comparison to simply doubling the holding period return or loss. This is not unique to double ETFs; it is simply the math of compounding. Second, it shows that the higher the volatility, the larger the disconnect between 2x Daily and 2x Holding Period returns. At high levels of volatility, this disconnect can be in the opposite direction of holding period returns.



Source: BetaPro Management Inc.

Generally speaking, execution issues also contribute to tracking error of double ETFs. Commodity ETFs are rebalanced before the close of stock markets because those markets close earlier. See below for settlement times for the handful of commodities covered by BetaPro ETFs as of June 30, 2009. The fact that BetaPro ETFs trade for at least 90 minutes past the close of commodity markets, tracking error at the investor level will result.

Commodity	Settlement Times
Gold	1:30PM ET
Silver	1:25PM ET
Natural Gas	2:30PM ET
Crude Oil	2:30PM ET
Agriculture	2:15PM ET

Source: BetaPro Management Inc.

The most predictable source of tracking error is cost. BetaPro double ETFs carry a 1.2% MER plus forward costs of approximately 0.4% annually. Costs are not unique to BetaPro double ETFs – they affect all investment funds – but they are worth mentioning because they are higher than traditional ETFs. Also, fees and expenses are certain to affect tracking so they should be noted as a source of tracking error. Still BetaPro double ETFs have very successfully tracked their 2x Daily benchmarks.

Double ETF myths and truths

Myth: Double ETFs fail to track their respective indexes.

Truth: The critics make their case using extreme examples. But, perhaps they missed this example. The S&P®/TSX® Capped Global Gold Index lost 56% from March 14, 2008 through October 22, 2008. Over the same period, HGU (Gold Bull Plus) lost 86% while HGD (Gold Bear Plus) gained 113 percent. Where are the critics asking why HGU did not lose 112 percent? They are silent because they cherry pick specific examples without delving into the exposure sought by double ETFs and the full implications of tracking double holding period returns.

Myth: If you want better double short exposure, you should short the double short ETF.

Truth: As we've noted, the market can break you while you wait to be proven right. So, this strategy does not offer the non-recourse nature of the double ETFs. That notwithstanding, this strategy can work but only in periods of high volatility. If you can predict when volatility will soar to the point of disconnecting the 2x Holding Period Benchmark from its 2x Daily counterpart, you might want to make a volatility bet more directly.

Myth: You shouldn't hold double ETFs for more than a day.

Truth: It's true that time can adversely impact the tracking of a holding period return but this is only the case when combined with very high levels of volatility. **Appendix B** demonstrates that much longer holding periods can result in fairly good tracking of the holding period return in the absence of 'abnormally' high volatility. However, investors cannot buy-and-forget double ETFs since they are designed to track shorter-term movements.

Portfolio application

We have long argued against the speculative activities of individual investors and advisors but we are often in the minority. So, double ETFs can be used in this regard. If the goal is instead to hedge existing investment exposure, BetaPro double ETFs fit the bill but should normally be held for shorter periods of time. They are designed to track daily performance, so investors should not expect them to track returns over very long holding periods. Ultimately, underlying index volatility will determine the appropriateness of any holding period. **Appendix B** shows that many BetaPro ETFs have closely tracked holding period return benchmarks over longer periods.

Conclusion

Seemingly too many investors bought double ETFs without thoroughly reading the prospectus to fully appreciate the investment and its associated risks. We won't pretend that BetaPro double ETFs are perfect. Investors have two choices – they can opt to short directly and risk losing a lot more than the original investment; or use BetaPro double ETFs for shorter-term exposure without risking more than 100% of their capital. There is no such thing as a perfect hedge or a perfect way to obtain leveraged exposure. Indeed, many currency-hedged funds failed to fully protect against the latest devaluation of the U.S. dollar. Volatility of securities and derivatives prices and the imperfection of rebalanced exposure explain much of the tracking error of all such products, so double ETFs are not alone in their challenge.

Double ETFs have to be used with full knowledge of their associated exposures. BetaPro has done a good job of providing investor and advisor education. But expecting regulators and product sponsors to save investors from themselves is beyond the duty owed to investors.

Appendix A – Impact of volatility on returns of double ETFs

Estimated Fund Return Over One Year When the Fund Objective is to Seek Daily Investment Results, Before Fund Fees and Expenses and Leverage Costs, that Correspond to Twice (200%) the Daily Performance of an Index.

One Year Index Performance	200% One Year Index Performance	Index Volatility												
		0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%
-60%	-120%	-84.0%	-84.0%	-84.2%	-84.4%	-84.6%	-85.0%	-85.4%	-85.8%	-86.4%	-86.9%	-87.5%	-88.2%	-88.8%
-55%	-110%	-79.8%	-79.8%	-80.0%	-80.2%	-80.5%	-81.0%	-81.5%	-82.1%	-82.7%	-83.5%	-84.2%	-85.0%	-85.9%
-50%	-100%	-75.0%	-75.1%	-75.2%	-75.6%	-76.0%	-76.5%	-77.2%	-77.9%	-78.7%	-79.6%	-80.5%	-81.5%	-82.6%
-45%	-90%	-69.8%	-69.8%	-70.1%	-70.4%	-70.9%	-71.6%	-72.4%	-73.2%	-74.2%	-75.3%	-76.4%	-77.6%	-78.9%
-40%	-80%	-64.0%	-64.1%	-64.4%	-64.8%	-65.4%	-66.2%	-67.1%	-68.2%	-69.3%	-70.6%	-72.0%	-73.4%	-74.9%
-35%	-70%	-57.8%	-57.9%	-58.2%	-58.7%	-59.4%	-60.3%	-61.4%	-62.6%	-64.0%	-65.5%	-67.1%	-68.8%	-70.5%
-30%	-60%	-51.0%	-51.1%	-51.5%	-52.1%	-52.9%	-54.0%	-55.2%	-56.6%	-58.2%	-60.0%	-61.8%	-63.8%	-65.8%
-25%	-50%	-43.8%	-43.9%	-44.3%	-45.0%	-46.0%	-47.2%	-48.6%	-50.2%	-52.1%	-54.1%	-56.2%	-58.4%	-60.8%
-20%	-40%	-36.0%	-36.2%	-36.6%	-37.4%	-38.5%	-39.9%	-41.5%	-43.4%	-45.5%	-47.7%	-50.2%	-52.7%	-55.3%
-15%	-30%	-27.8%	-27.9%	-28.5%	-29.4%	-30.6%	-32.1%	-34.0%	-36.1%	-38.4%	-41.0%	-43.7%	-46.6%	-49.6%
-10%	-20%	-19.0%	-19.2%	-19.8%	-20.8%	-22.2%	-23.9%	-26.0%	-28.3%	-31.0%	-33.8%	-36.9%	-40.1%	-43.5%
-5%	-10%	-9.8%	-10.0%	-10.6%	-11.8%	-13.3%	-15.2%	-17.5%	-20.2%	-23.1%	-26.3%	-29.7%	-33.3%	-37.0%
0%	0%	0.0%	-0.2%	-1.0%	-2.2%	-3.9%	-6.1%	-8.6%	-11.5%	-14.8%	-18.3%	-22.1%	-26.1%	-30.2%
5%	10%	10.3%	10.0%	9.2%	7.8%	5.9%	3.6%	0.8%	-2.5%	-6.1%	-10.0%	-14.1%	-18.5%	-23.1%
10%	20%	21.0%	20.7%	19.8%	18.3%	16.3%	13.7%	10.6%	7.0%	3.1%	-1.2%	-5.8%	-10.6%	-15.6%
15%	30%	32.3%	31.9%	30.9%	29.3%	27.1%	24.2%	20.9%	17.0%	12.7%	8.0%	3.0%	-2.3%	-7.7%
20%	40%	44.0%	43.6%	42.6%	40.8%	38.4%	35.3%	31.6%	27.4%	22.7%	17.6%	12.1%	6.4%	0.5%
25%	50%	56.3%	55.9%	54.7%	52.8%	50.1%	46.8%	42.8%	38.2%	33.1%	27.6%	21.7%	15.5%	9.0%
30%	60%	69.0%	68.6%	67.3%	65.2%	62.4%	58.8%	54.5%	49.5%	44.0%	38.0%	31.6%	24.9%	17.9%
35%	70%	82.3%	81.8%	80.4%	78.2%	75.1%	71.2%	66.6%	61.2%	55.3%	48.8%	41.9%	34.7%	27.2%
40%	80%	96.0%	95.5%	94.0%	91.6%	88.3%	84.1%	79.1%	73.4%	67.0%	60.1%	52.6%	44.8%	36.7%
45%	90%	110.3%	109.7%	108.2%	105.6%	102.0%	97.5%	92.2%	86.0%	79.2%	71.7%	63.7%	55.4%	46.7%
50%	100%	125.0%	124.4%	122.8%	120.0%	116.2%	111.4%	105.6%	99.1%	91.7%	83.8%	75.2%	66.3%	57.0%
55%	110%	140.3%	139.7%	137.9%	134.9%	130.8%	125.7%	119.6%	112.6%	104.7%	96.2%	87.1%	77.5%	67.6%
60%	120%	156.0%	155.4%	153.5%	150.3%	146.0%	140.5%	134.0%	126.5%	118.1%	109.1%	99.4%	89.2%	78.6%

Estimated Fund Return Over One Year When the Fund Objective is to Seek Daily Investment Results, Before Fees and Expenses, that Correspond to Twice (200%) the Inverse of the Daily Performance of an Index.

One Year Index Performance	200% Inverse of One Year Index Performance	Index Volatility												
		0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%
-60%	120%	525.0%	520.3%	506.5%	484.2%	454.3%	418.1%	377.1%	332.8%	286.7%	240.4%	195.2%	152.2%	112.2%
-55%	110%	393.8%	390.1%	379.2%	361.6%	338.0%	309.4%	277.0%	242.0%	205.6%	169.0%	133.3%	99.3%	67.7%
-50%	100%	300.0%	297.0%	288.2%	273.9%	254.8%	231.6%	205.4%	177.0%	147.5%	117.9%	88.9%	61.4%	35.8%
-45%	90%	230.6%	228.1%	220.8%	209.0%	193.2%	174.1%	152.4%	128.9%	104.6%	80.1%	56.2%	33.4%	12.3%
-40%	80%	177.8%	175.7%	169.6%	159.6%	146.4%	130.3%	112.0%	92.4%	71.9%	51.3%	31.2%	12.1%	-5.7%
-35%	70%	136.7%	134.9%	129.7%	121.2%	109.9%	96.2%	80.7%	63.9%	46.5%	28.9%	11.8%	-4.5%	-19.6%
-30%	60%	104.1%	102.6%	98.1%	90.8%	81.0%	69.2%	55.8%	41.3%	26.3%	11.2%	-3.6%	-17.6%	-30.7%
-25%	50%	77.8%	76.4%	72.5%	66.2%	57.7%	47.4%	35.7%	23.1%	10.0%	-3.2%	-16.0%	-28.3%	-39.6%
-20%	40%	56.3%	55.1%	51.6%	46.1%	38.6%	29.5%	19.3%	8.2%	-3.3%	-14.9%	-26.2%	-36.9%	-46.9%
-15%	30%	38.4%	37.4%	34.3%	29.4%	22.8%	14.7%	5.7%	-4.2%	-14.4%	-24.6%	-34.6%	-44.1%	-53.0%
-10%	20%	23.5%	22.5%	19.8%	15.4%	9.5%	2.3%	-5.8%	-14.5%	-23.6%	-32.8%	-41.7%	-50.2%	-58.1%
-5%	10%	10.8%	10.0%	7.5%	3.6%	-1.7%	-8.1%	-15.4%	-23.3%	-31.4%	-39.6%	-47.7%	-55.3%	-62.4%
0%	0%	0.0%	-0.7%	-3.0%	-6.5%	-11.3%	-17.1%	-23.7%	-30.8%	-38.1%	-45.5%	-52.8%	-59.6%	-66.0%
5%	-10%	-9.3%	-10.0%	-12.0%	-15.2%	-19.6%	-24.8%	-30.8%	-37.2%	-43.9%	-50.6%	-57.2%	-63.4%	-69.2%
10%	-20%	-17.4%	-18.0%	-19.8%	-22.7%	-26.7%	-31.5%	-36.9%	-42.8%	-48.9%	-55.0%	-61.0%	-66.7%	-71.9%
15%	-30%	-24.4%	-25.0%	-26.6%	-29.3%	-32.9%	-37.3%	-42.3%	-47.6%	-53.2%	-58.8%	-64.3%	-69.5%	-74.3%
20%	-40%	-30.6%	-31.1%	-32.6%	-35.1%	-38.4%	-42.4%	-47.0%	-51.9%	-57.0%	-62.2%	-67.2%	-72.0%	-76.4%
25%	-50%	-36.0%	-36.5%	-37.9%	-40.2%	-43.2%	-46.9%	-51.1%	-55.7%	-60.4%	-65.1%	-69.8%	-74.2%	-78.3%
30%	-60%	-40.8%	-41.3%	-42.6%	-44.7%	-47.5%	-50.9%	-54.8%	-59.0%	-63.4%	-67.8%	-72.0%	-76.1%	-79.9%
35%	-70%	-45.1%	-45.5%	-46.8%	-48.7%	-51.3%	-54.5%	-58.1%	-62.0%	-66.0%	-70.1%	-74.1%	-77.9%	-81.4%
40%	-80%	-49.0%	-49.4%	-50.5%	-52.3%	-54.7%	-57.7%	-61.1%	-64.7%	-68.4%	-72.2%	-75.9%	-79.4%	-82.7%
45%	-90%	-52.4%	-52.8%	-53.8%	-55.5%	-57.8%	-60.6%	-63.7%	-67.1%	-70.6%	-74.1%	-77.5%	-80.8%	-83.8%
50%	-100%	-55.6%	-55.9%	-56.9%	-58.5%	-60.6%	-63.2%	-66.1%	-69.2%	-72.5%	-75.8%	-79.0%	-82.1%	-84.9%
55%	-110%	-58.4%	-58.7%	-59.6%	-61.1%	-63.1%	-65.5%	-68.2%	-71.2%	-74.2%	-77.3%	-80.3%	-83.2%	-85.9%
60%	-120%	-60.9%	-61.2%	-62.1%	-63.5%	-65.4%	-67.6%	-70.2%	-73.0%	-75.8%	-78.7%	-81.5%	-84.2%	-86.7%

Source: ProShares Statement of Additional Information, June 2, 2009

Appendix B – Total return of selected BetaPro double ETFs vs. relevant benchmarks

Before reviewing the charts that follow, it may be helpful to review the following notes.

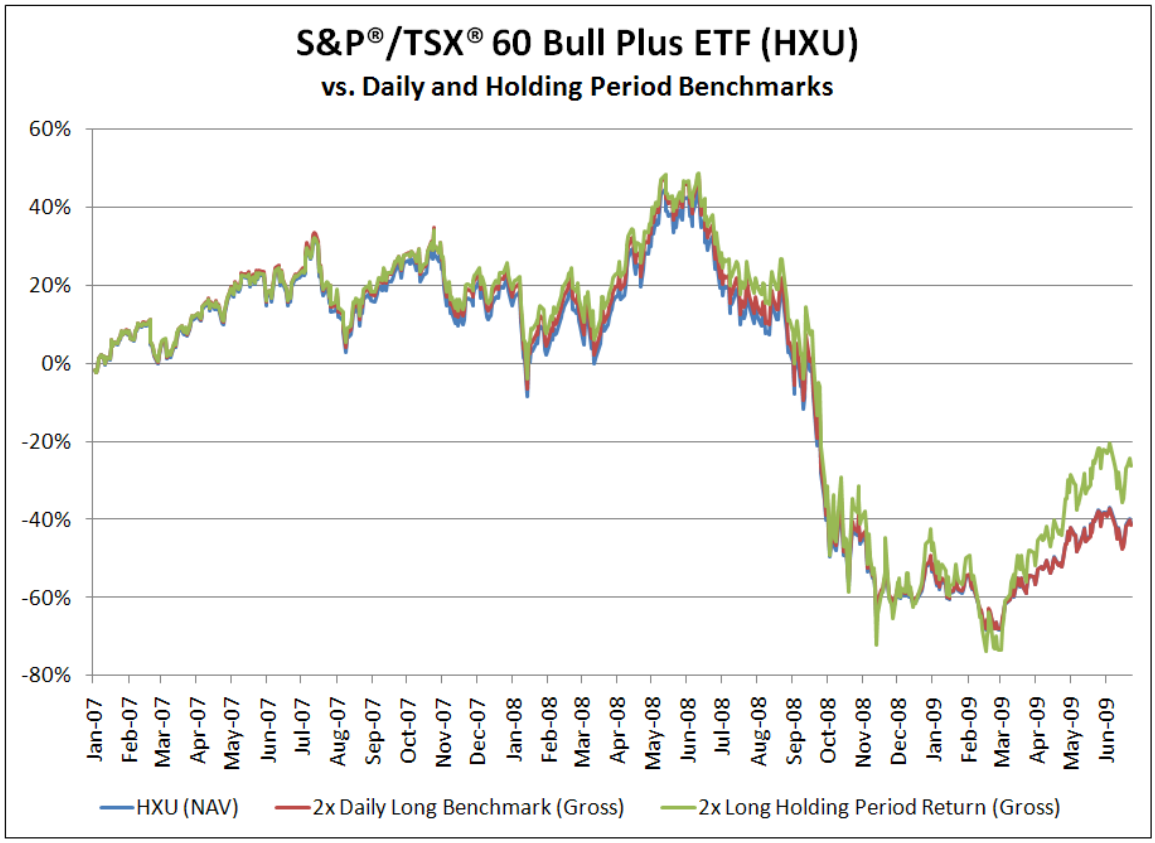
- We calculated the performance of the BetaPro ETFs based on closing net asset values per unit (not closing market price).

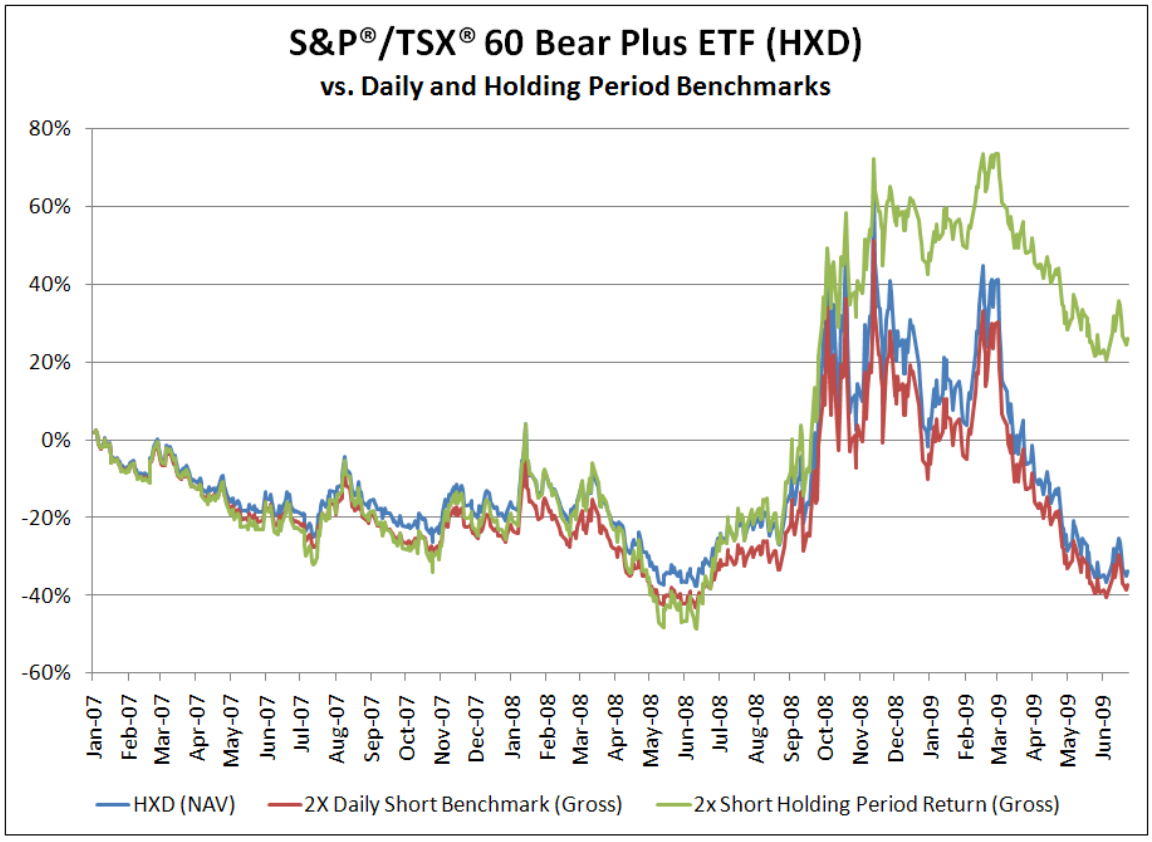
- All performance calculations in Appendix B are based on raw data supplied by BetaPro Management Inc.

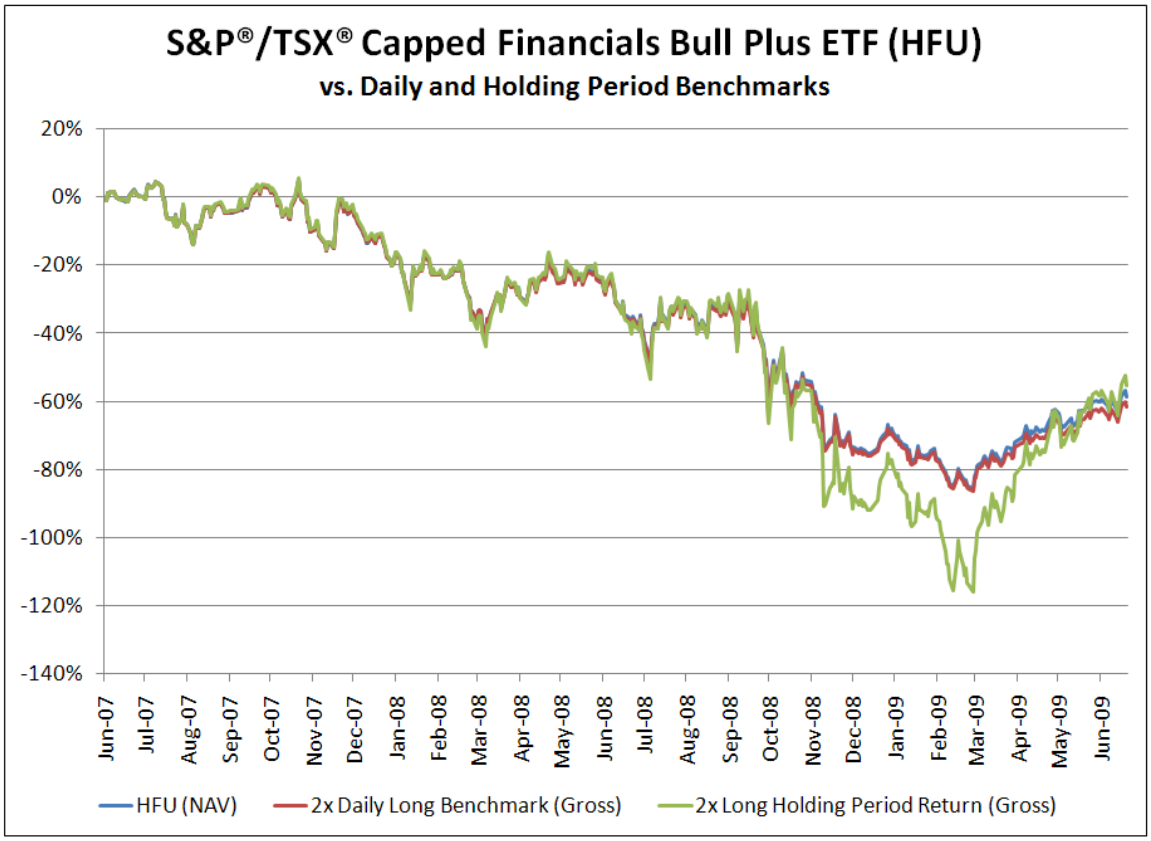
- Performance is calculated for each ETF and its respective benchmarks from the inception date of each respective ETF through June 30, 2009. So each chart may cover different time periods.

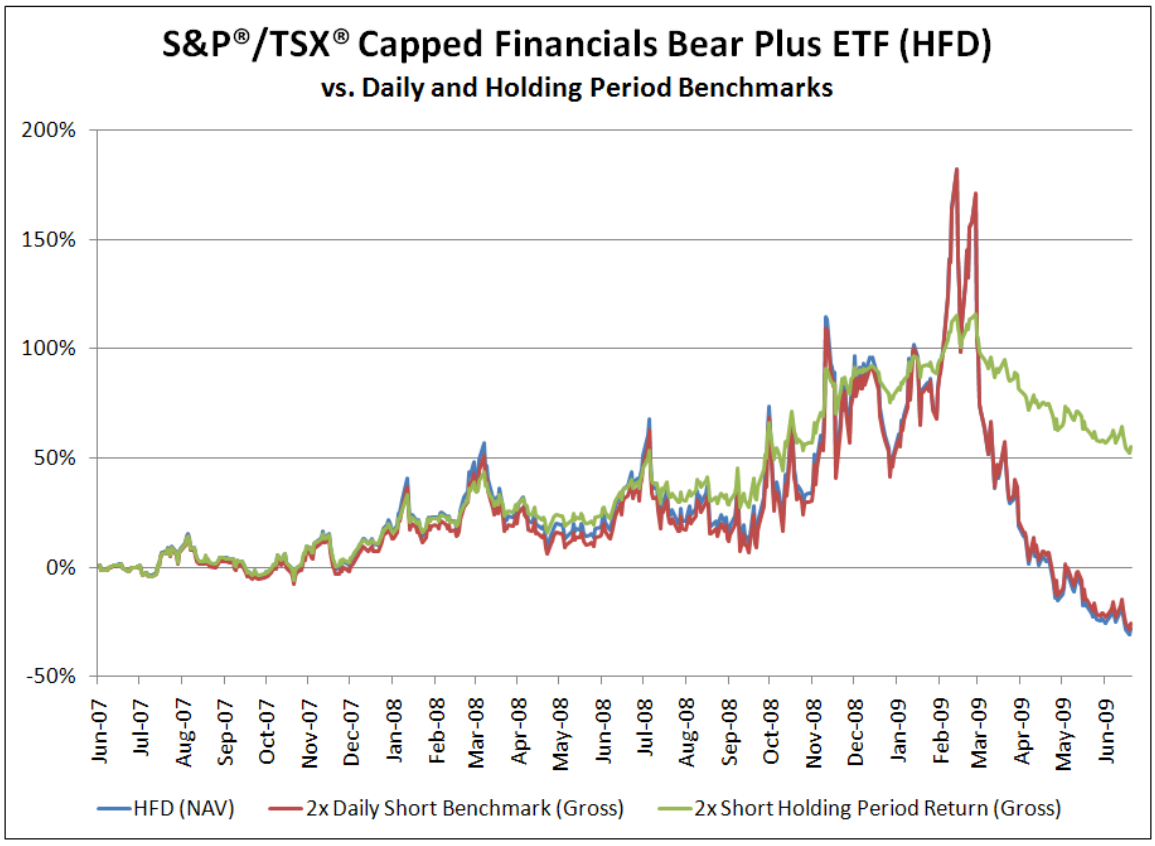
- Our index calculation methodologies are summarized on page 7 of this report.

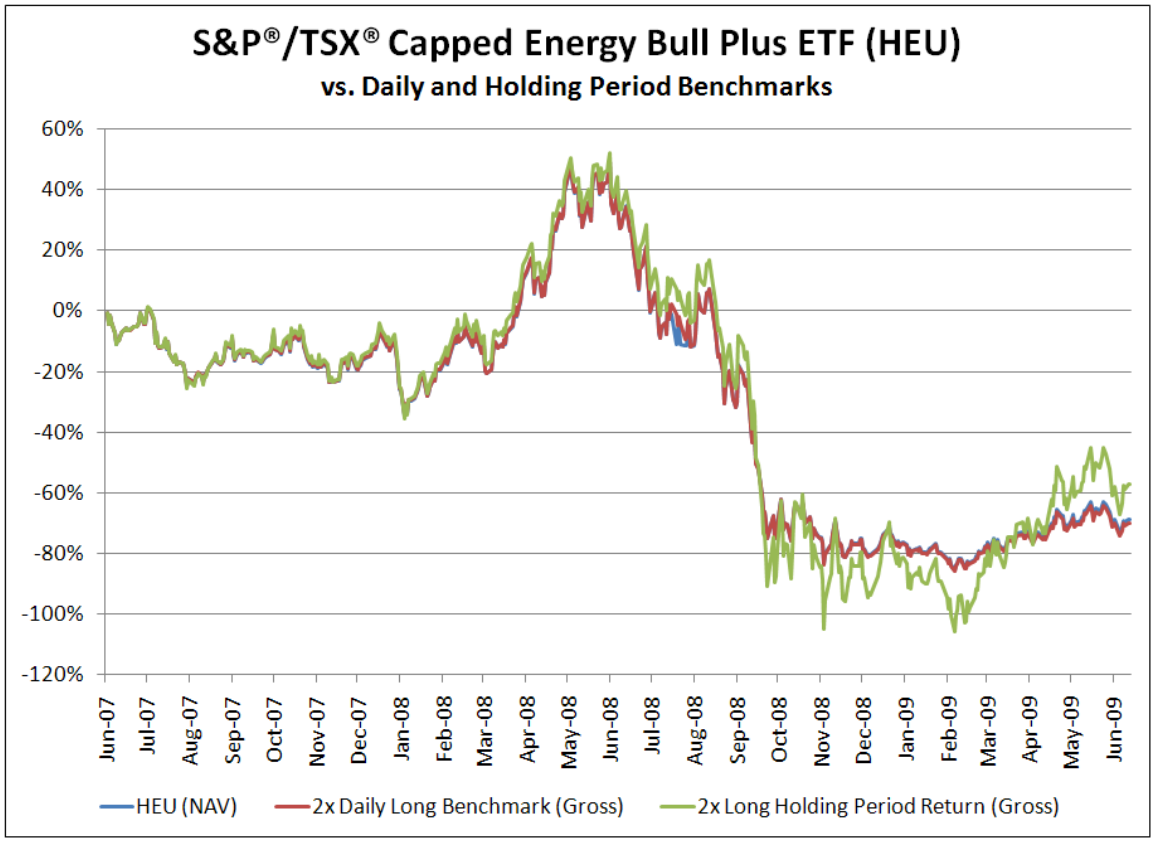
- Some of the following charts show the 2x Holding Period Benchmark with losses in excess of 100 percent. This is mathematically impossible in a non-recourse structure like the BetaPro double ETFs. We show these losses because it is purely the result of our calculation. In other words, if a stock index loses more than 50% (as many did in 2008), doubling the loss results in a loss in excess of 100% for the 2x Long Holding Period Benchmark.

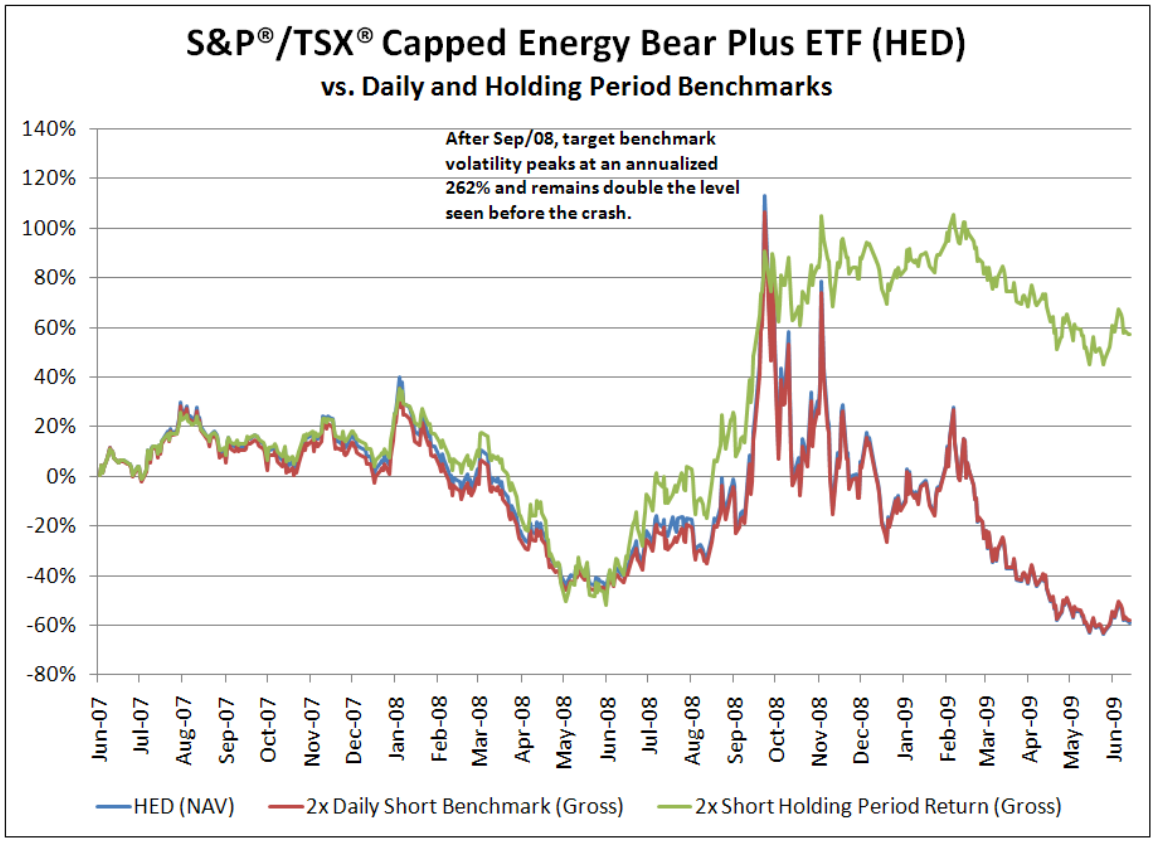


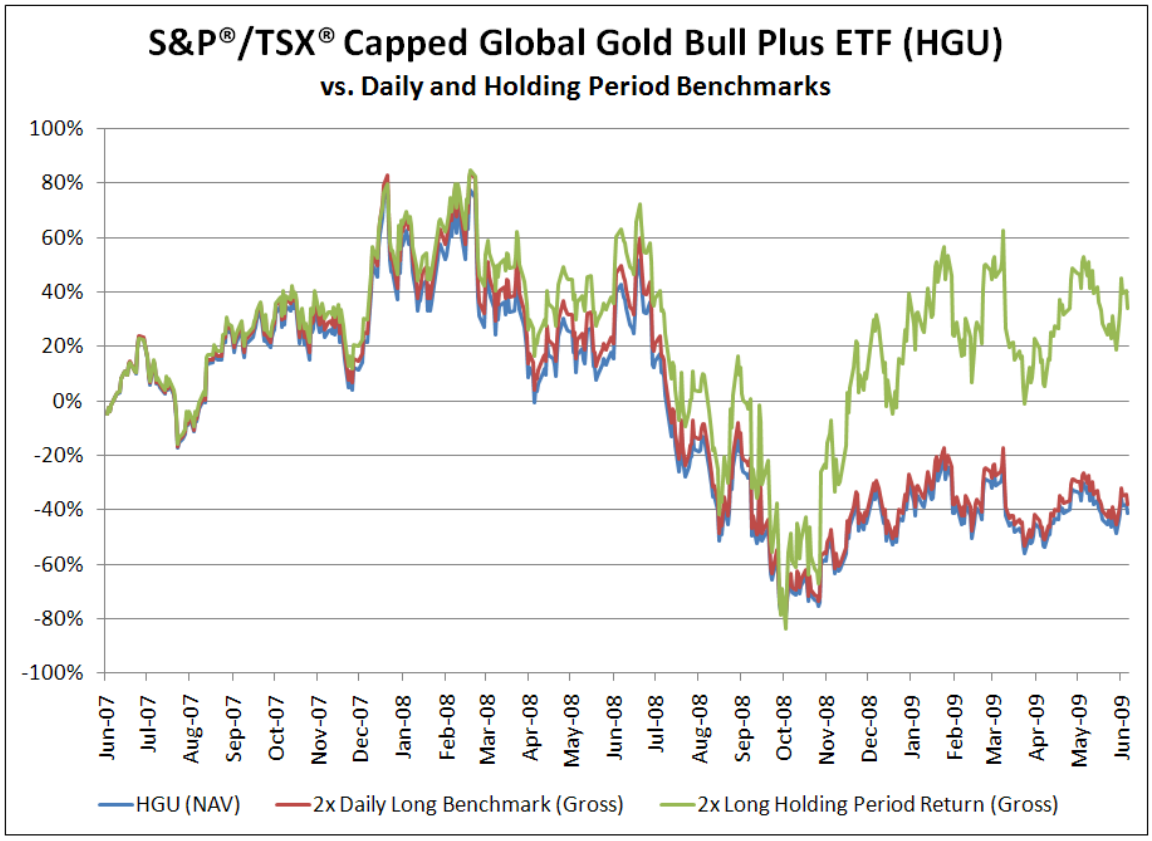


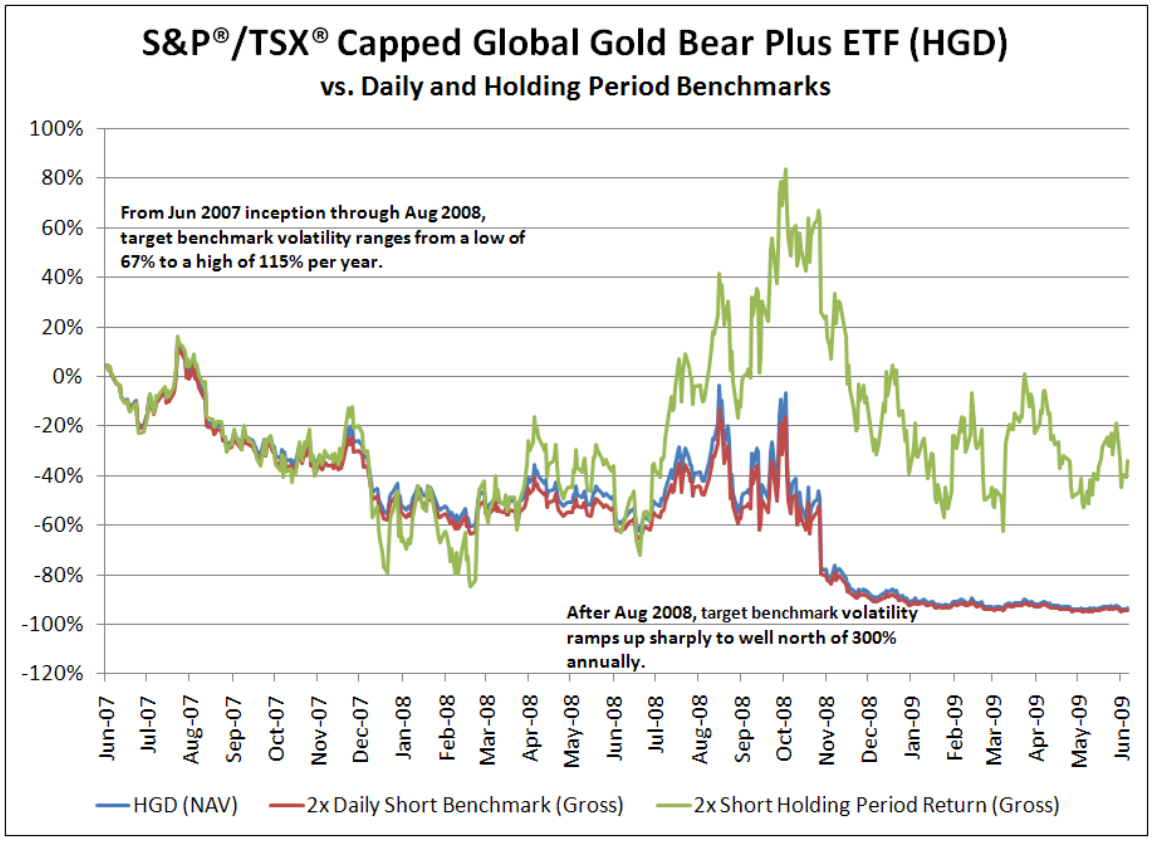


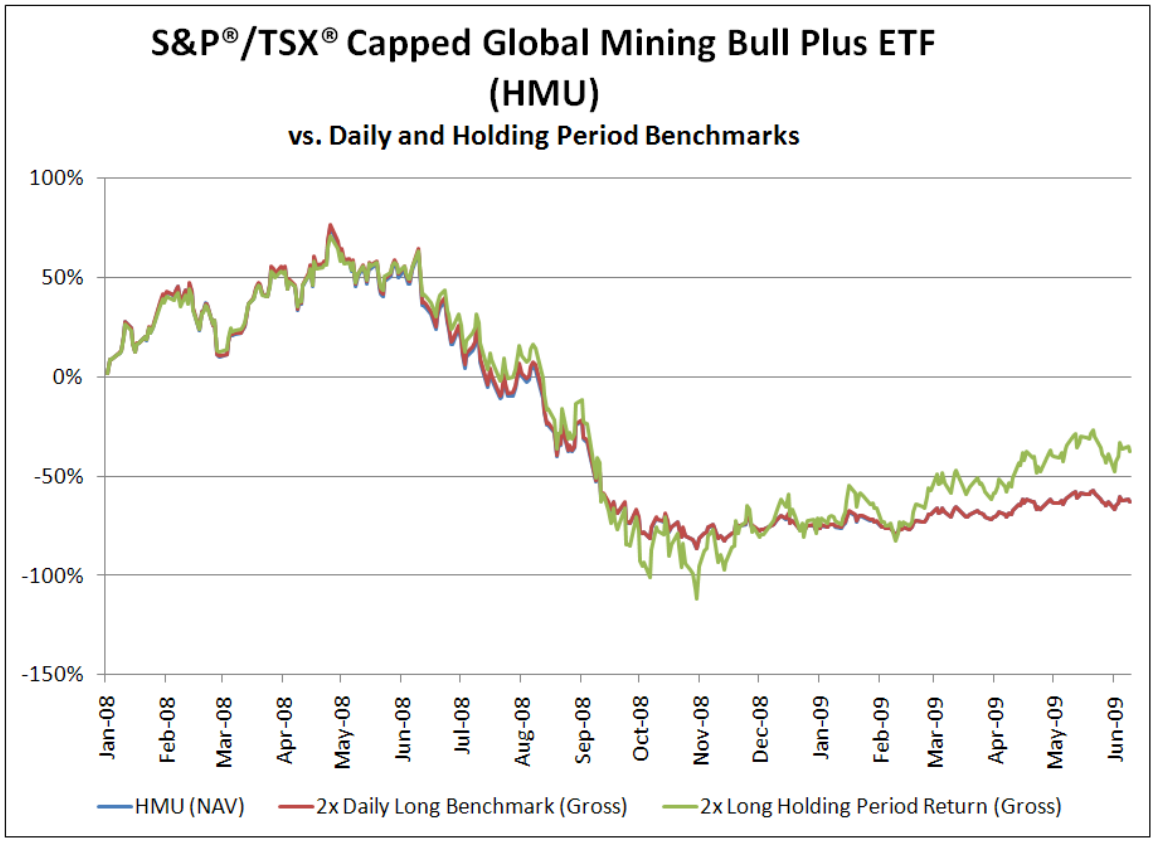


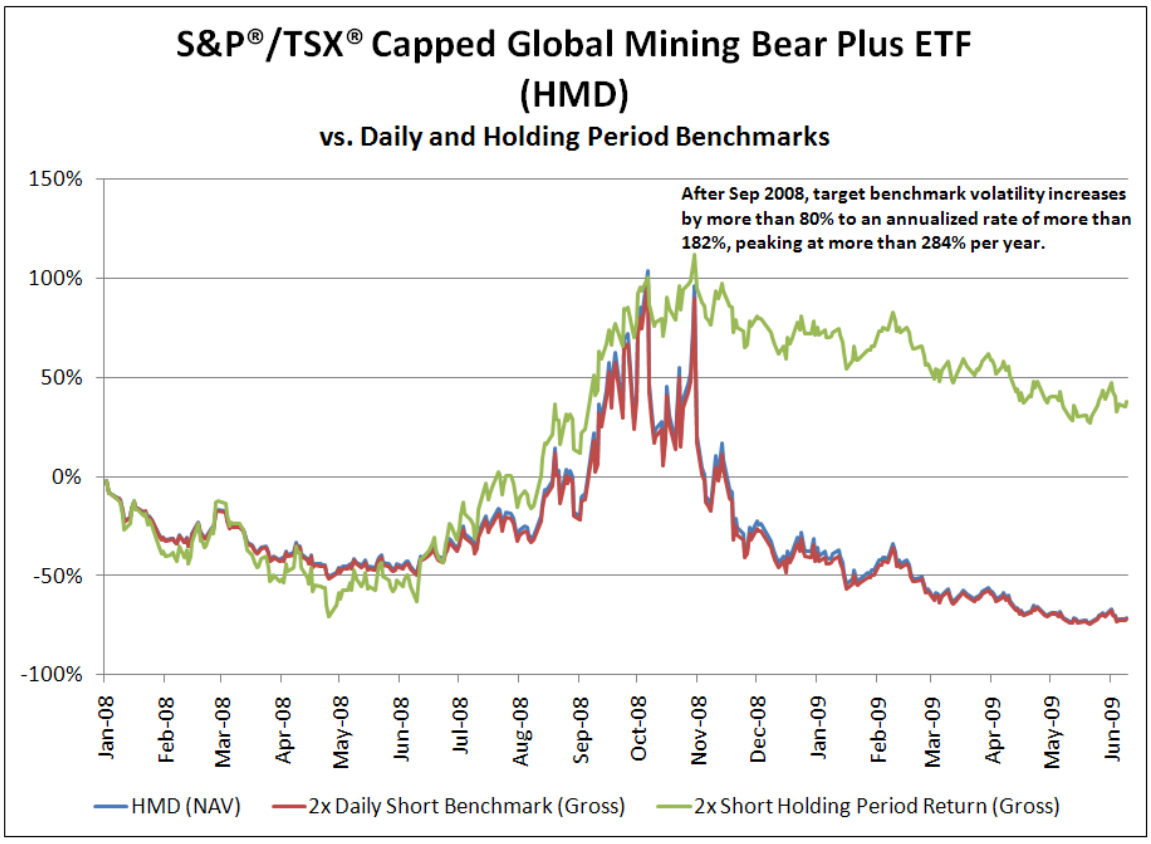


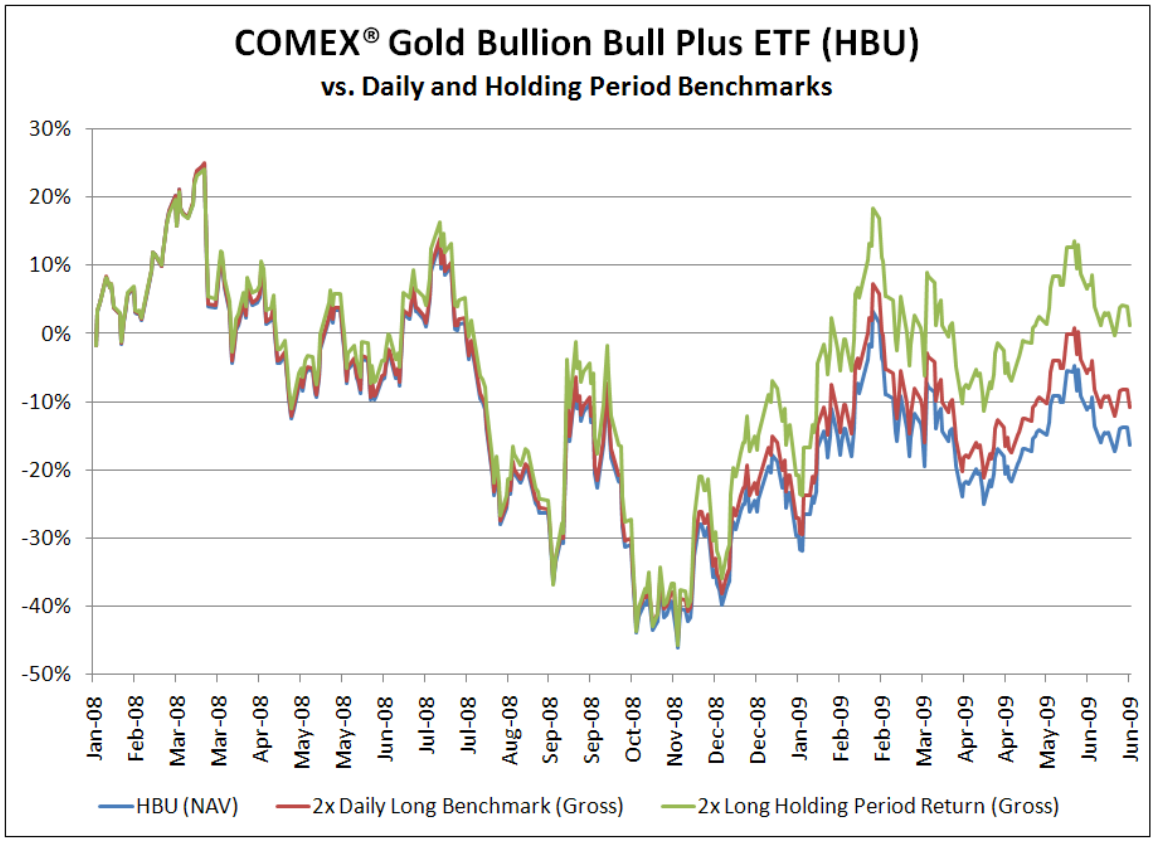


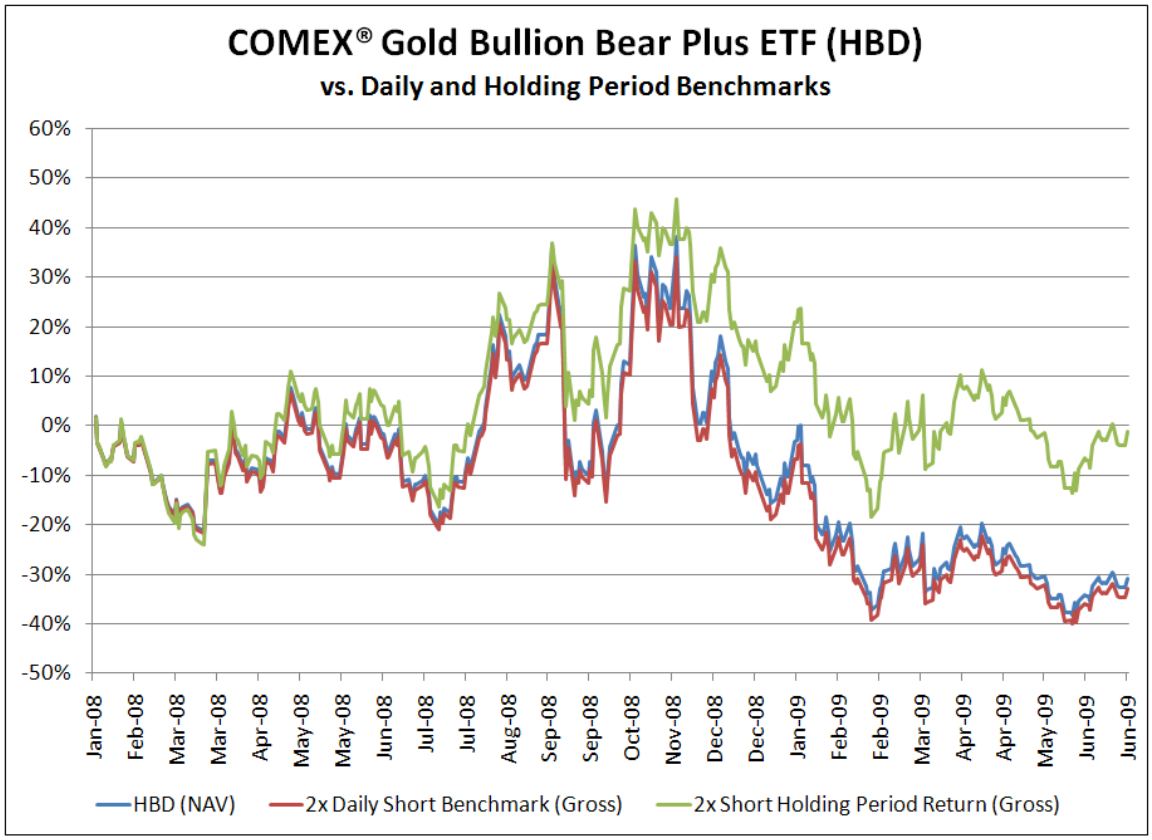


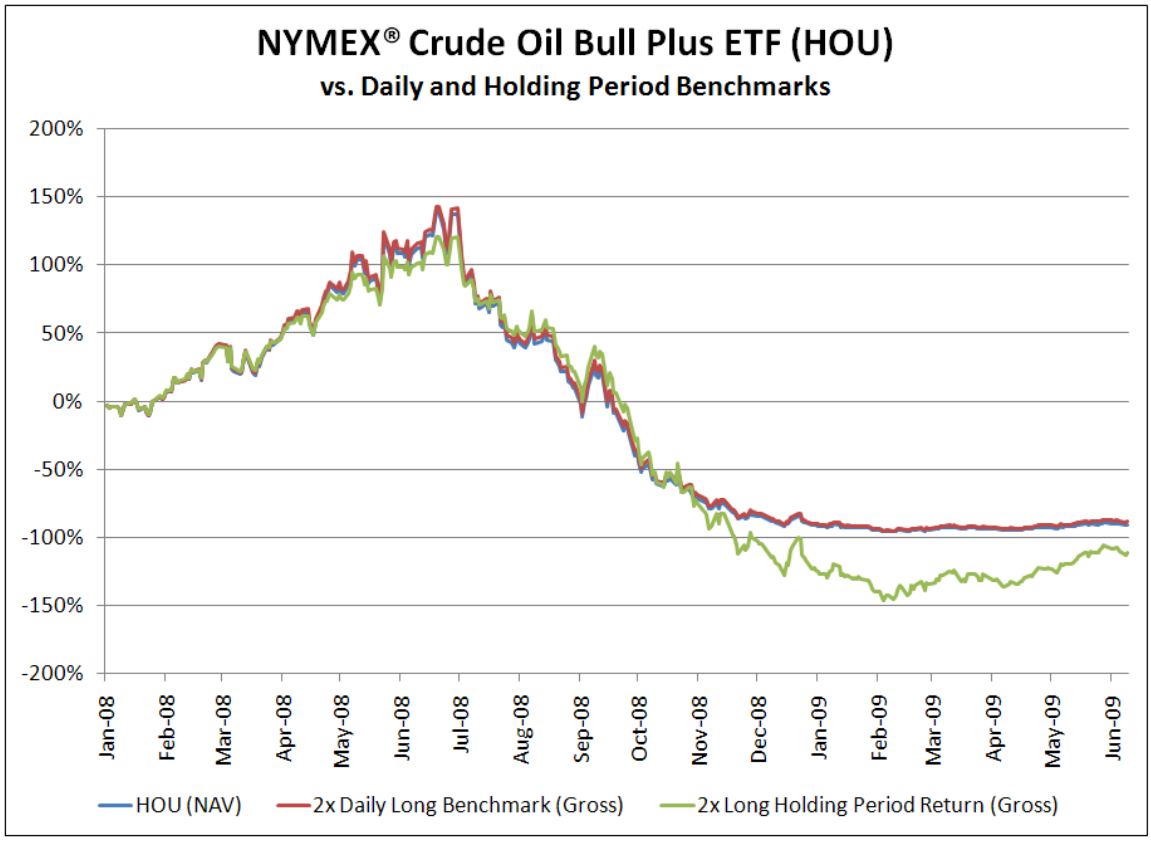


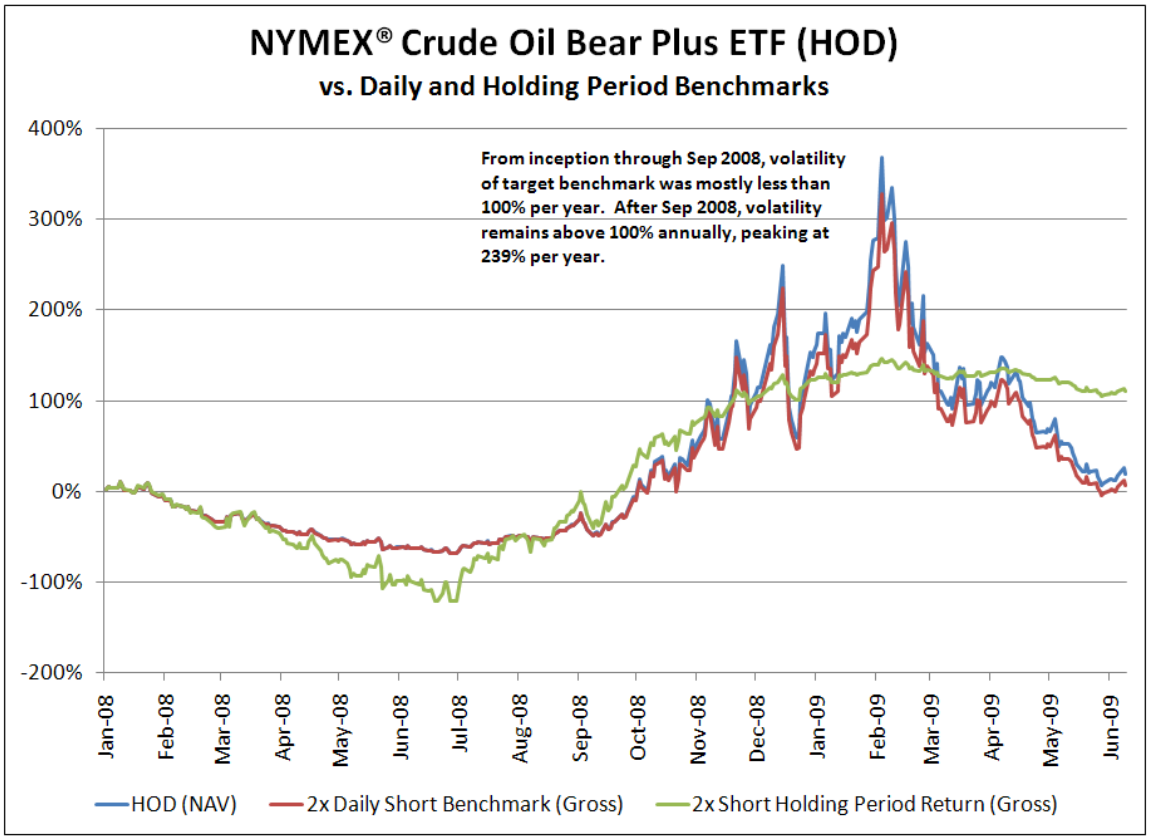


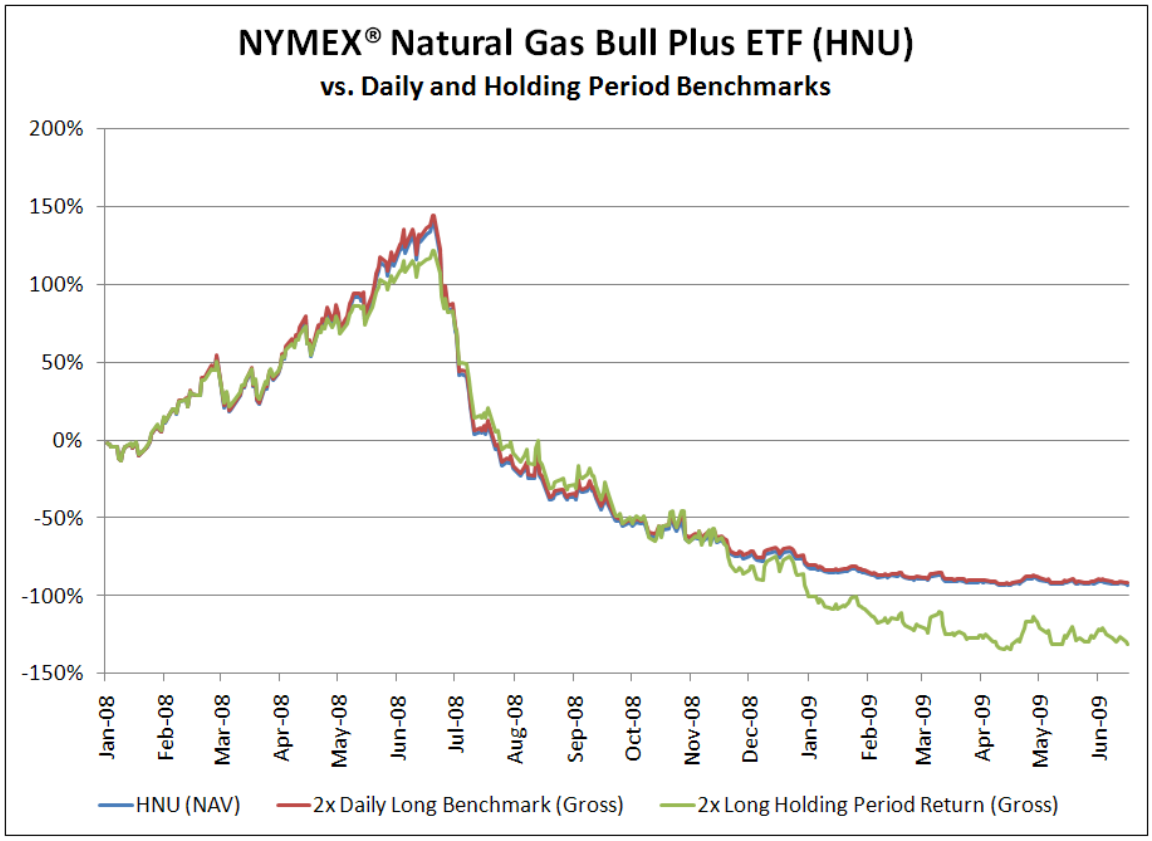


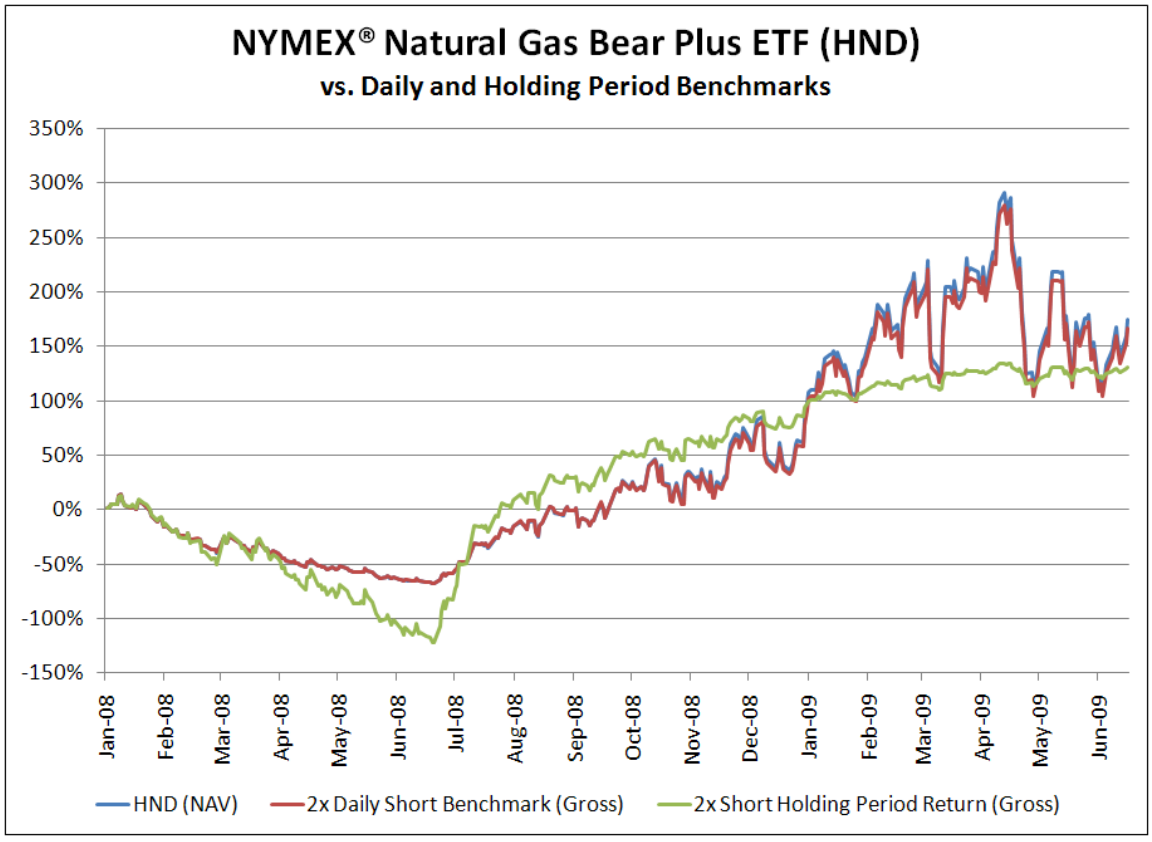


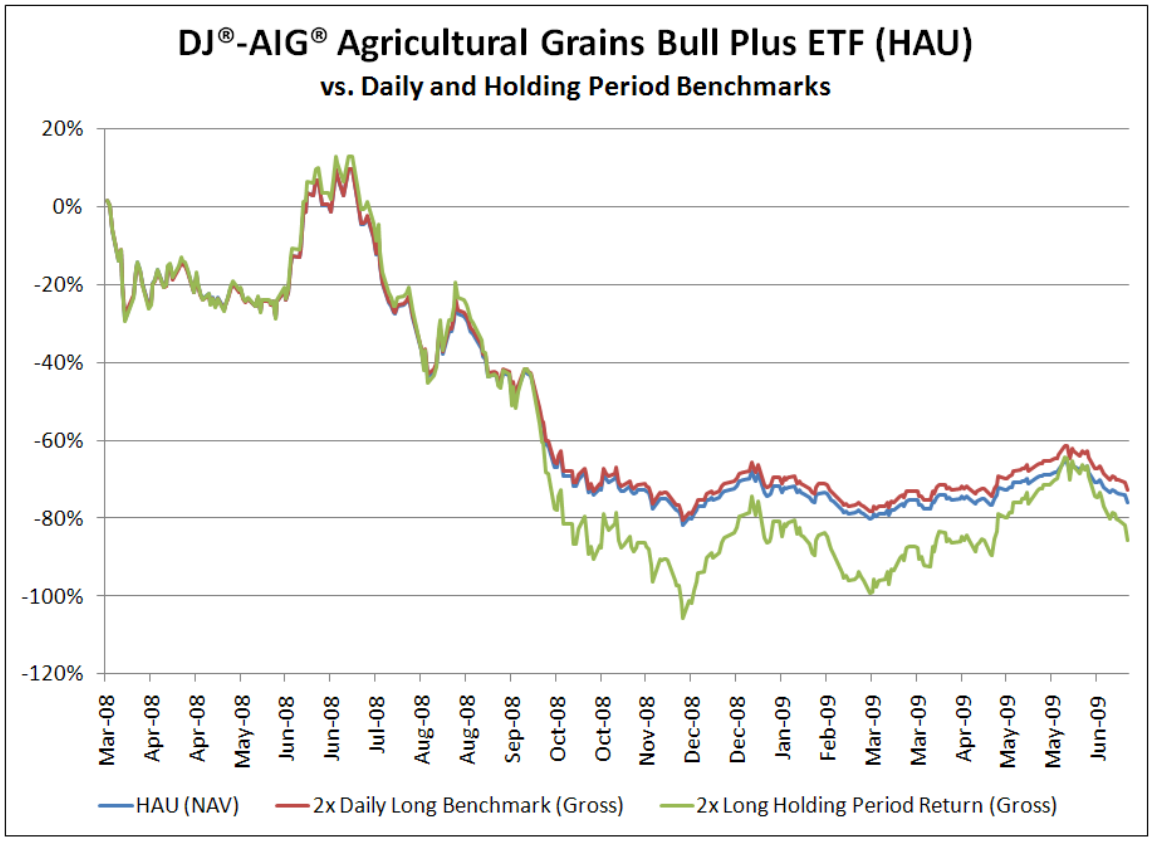


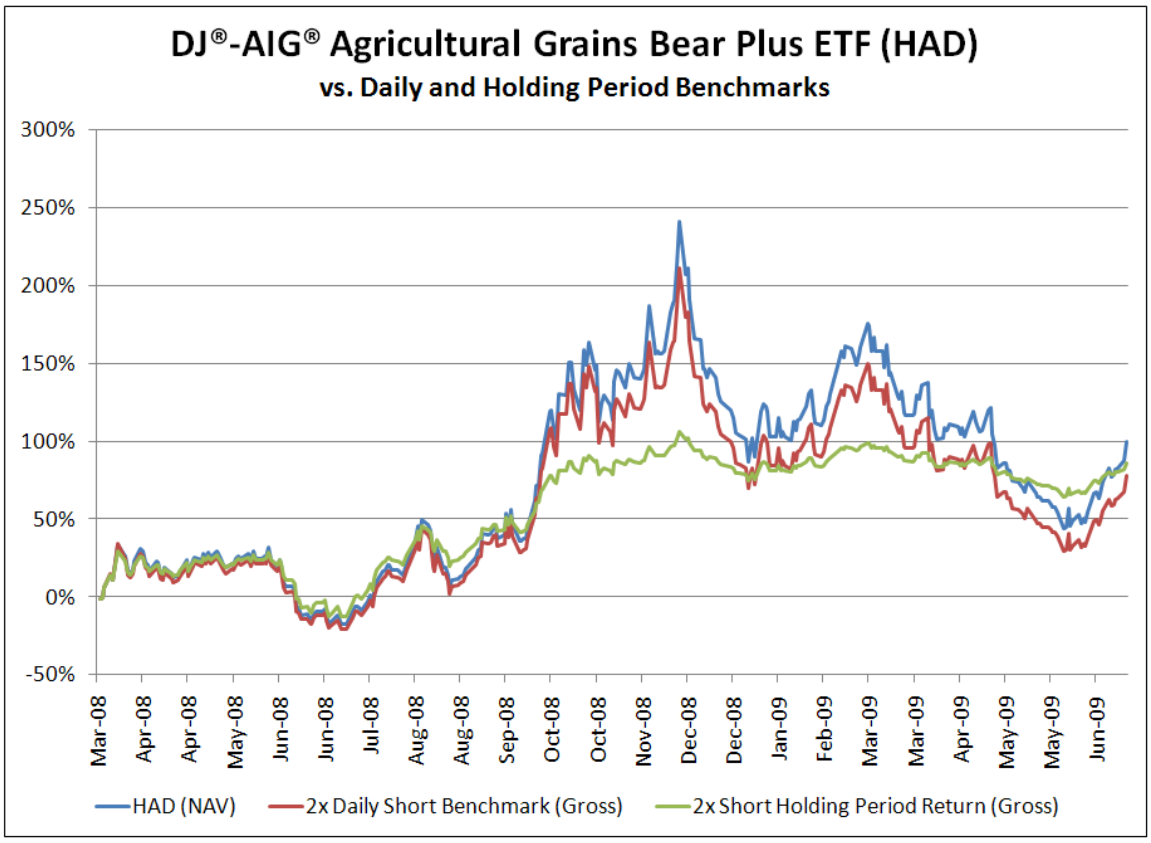


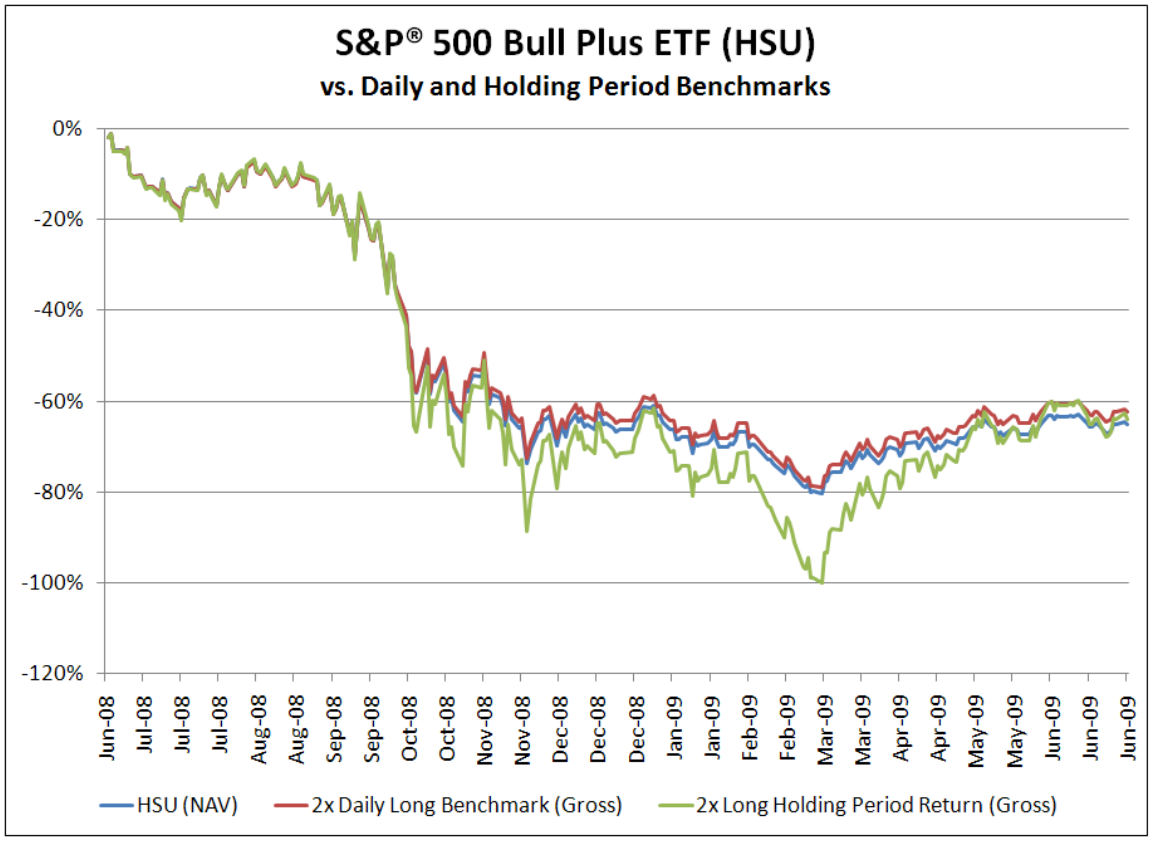


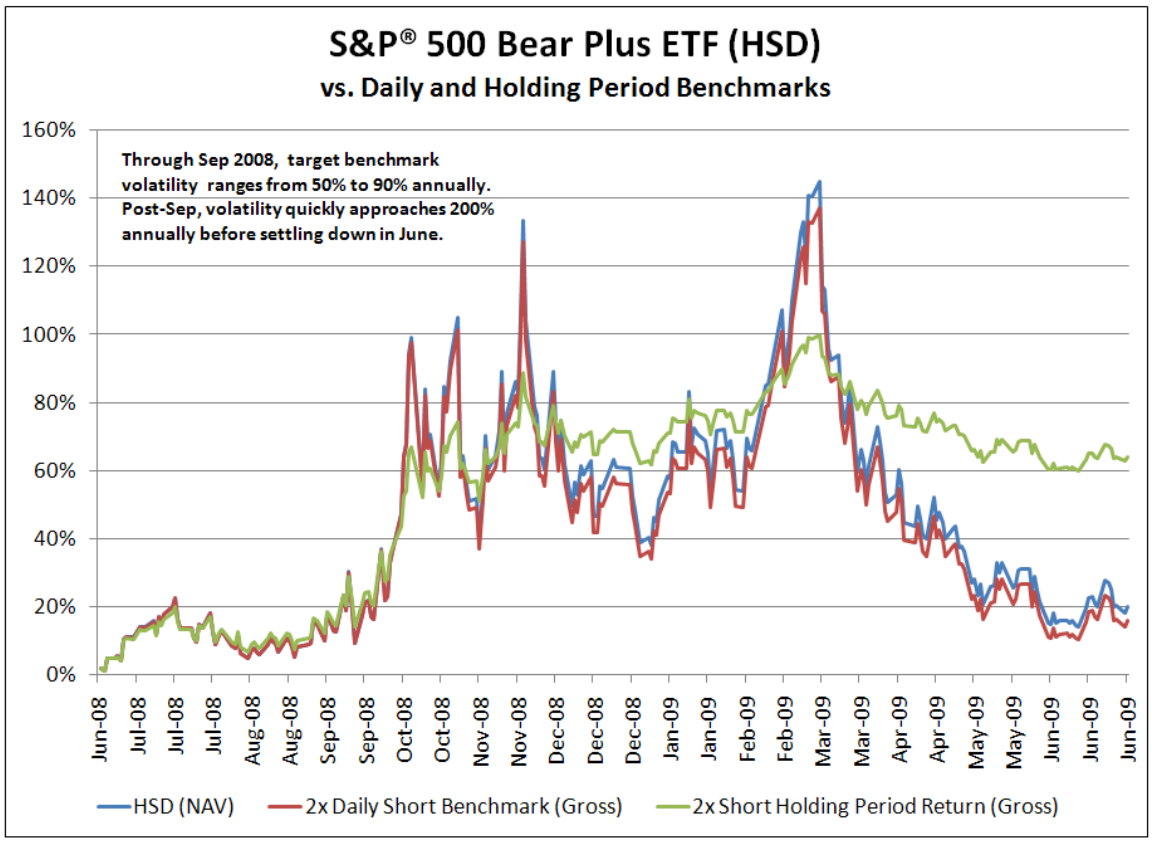


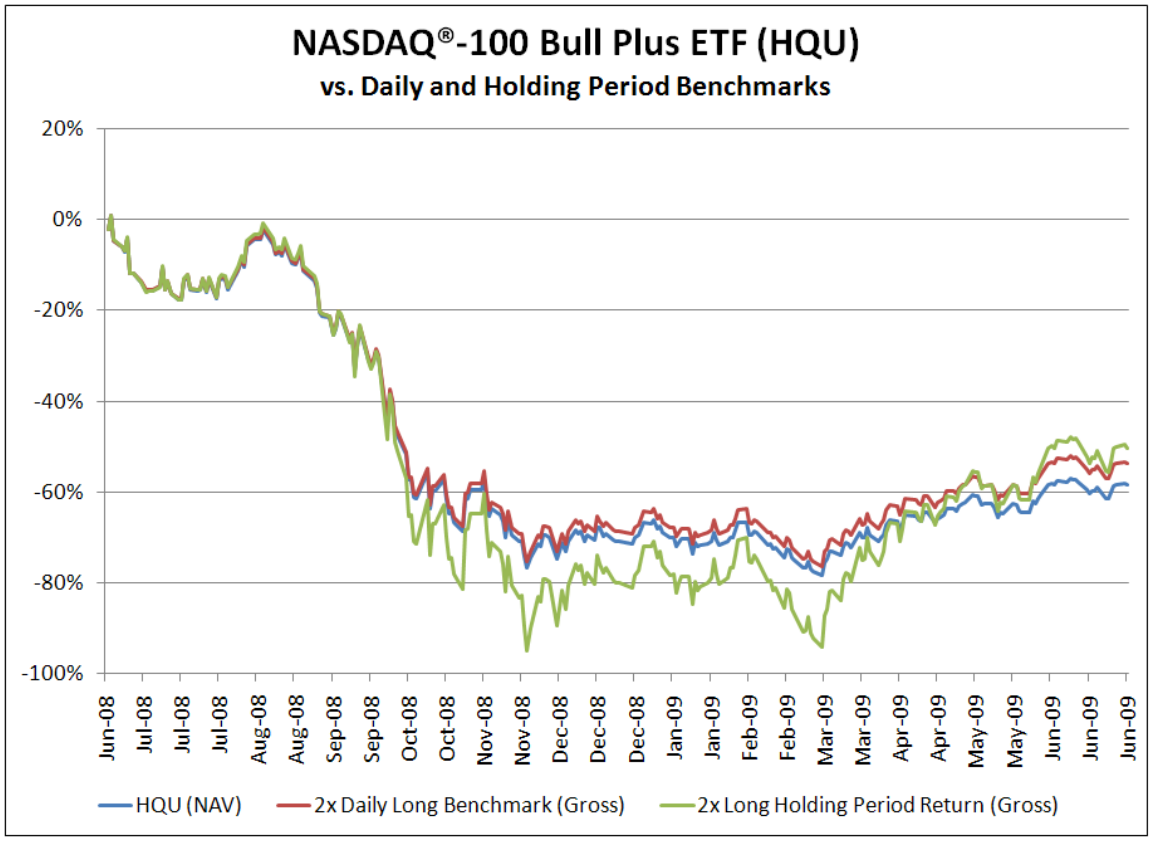


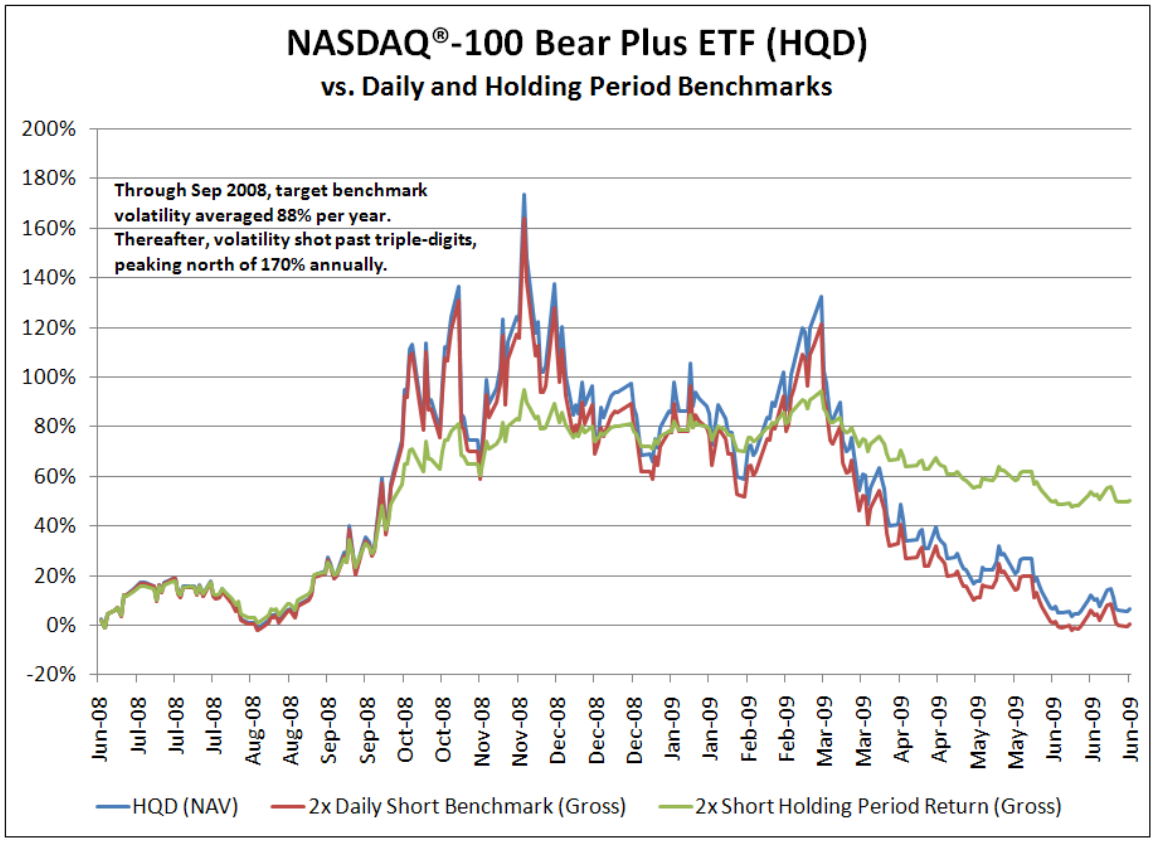


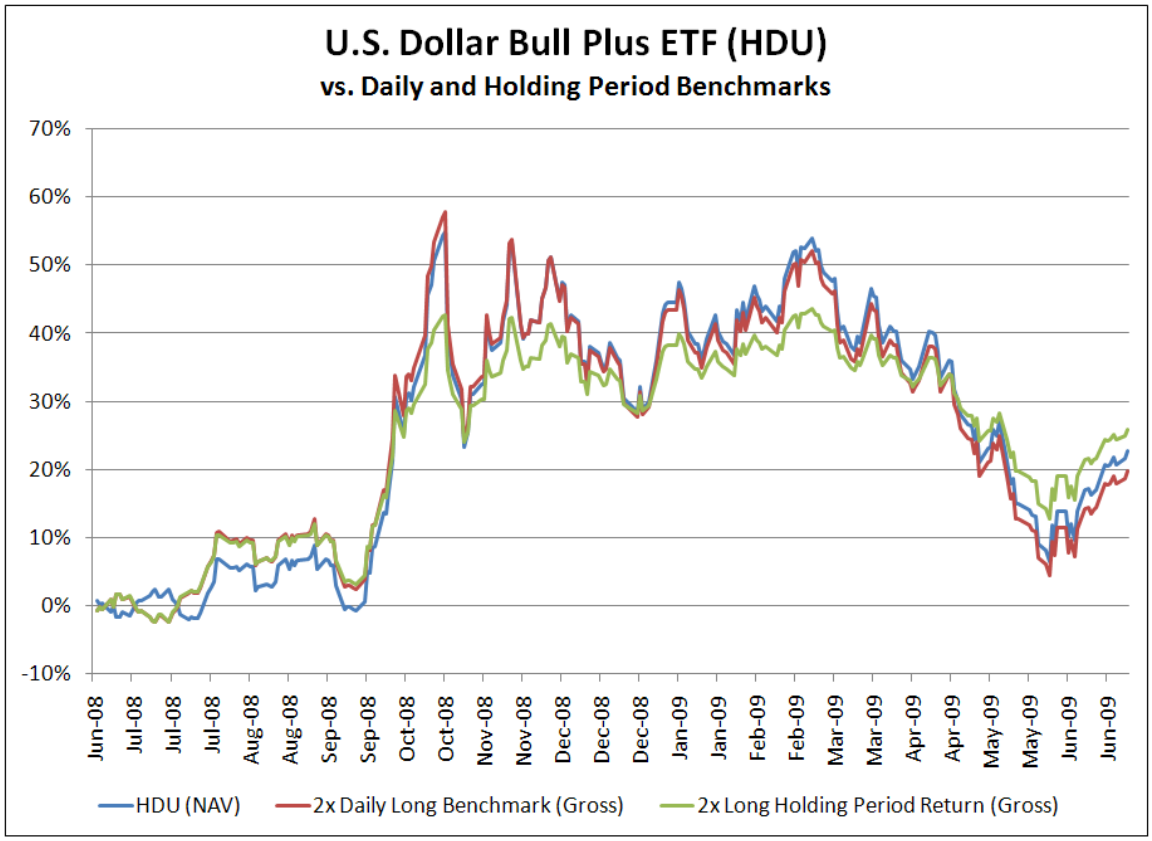


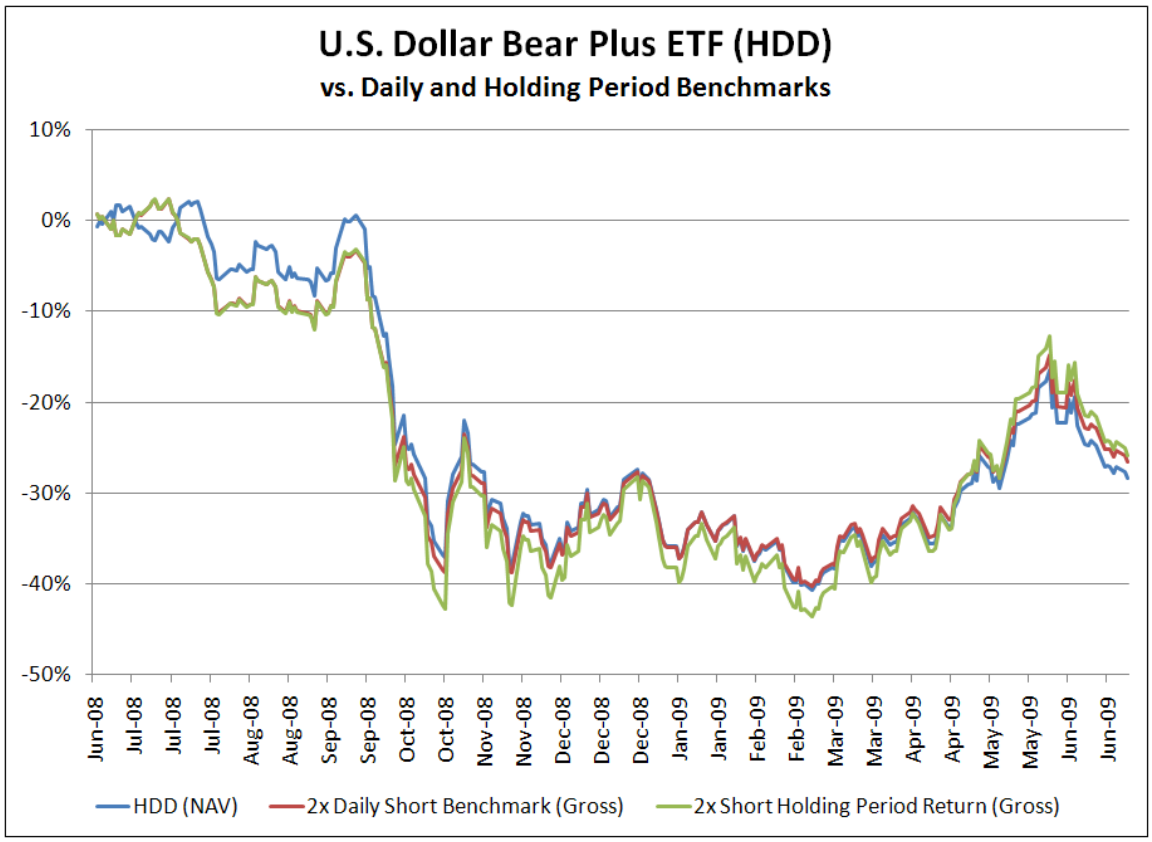


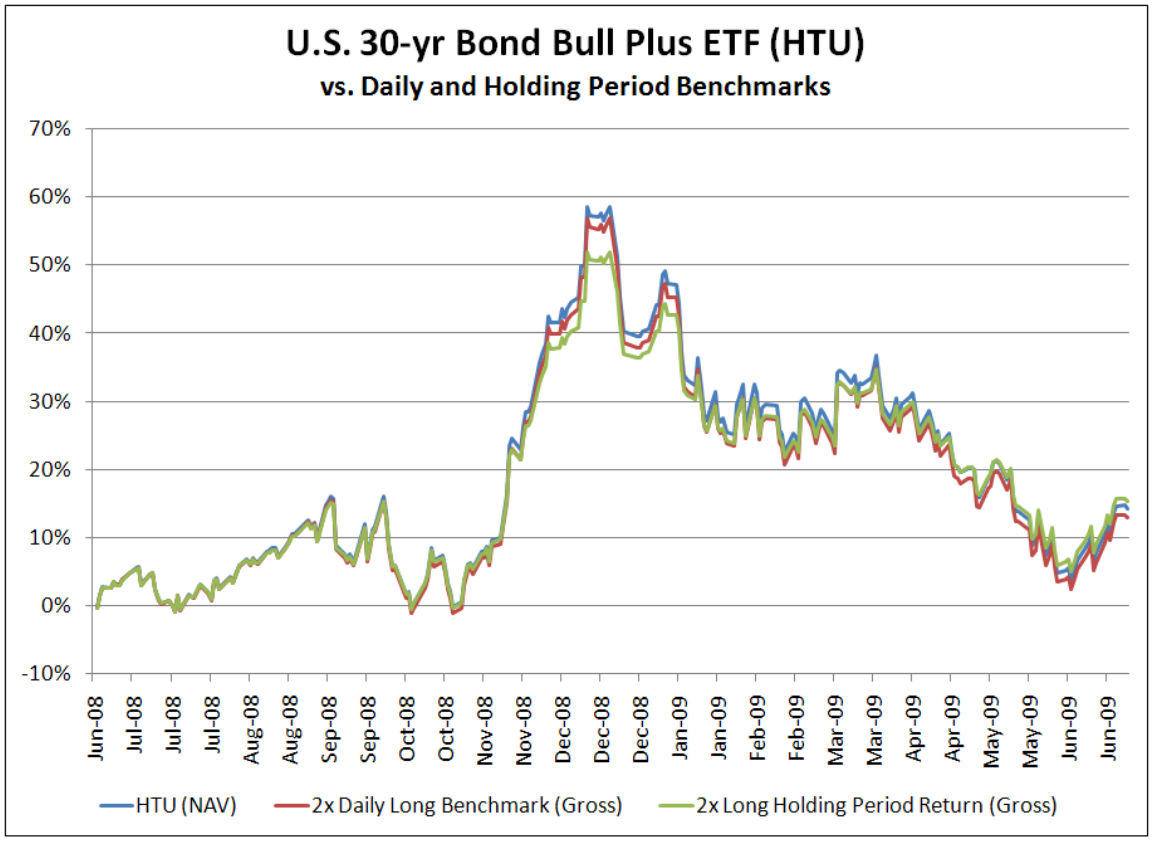


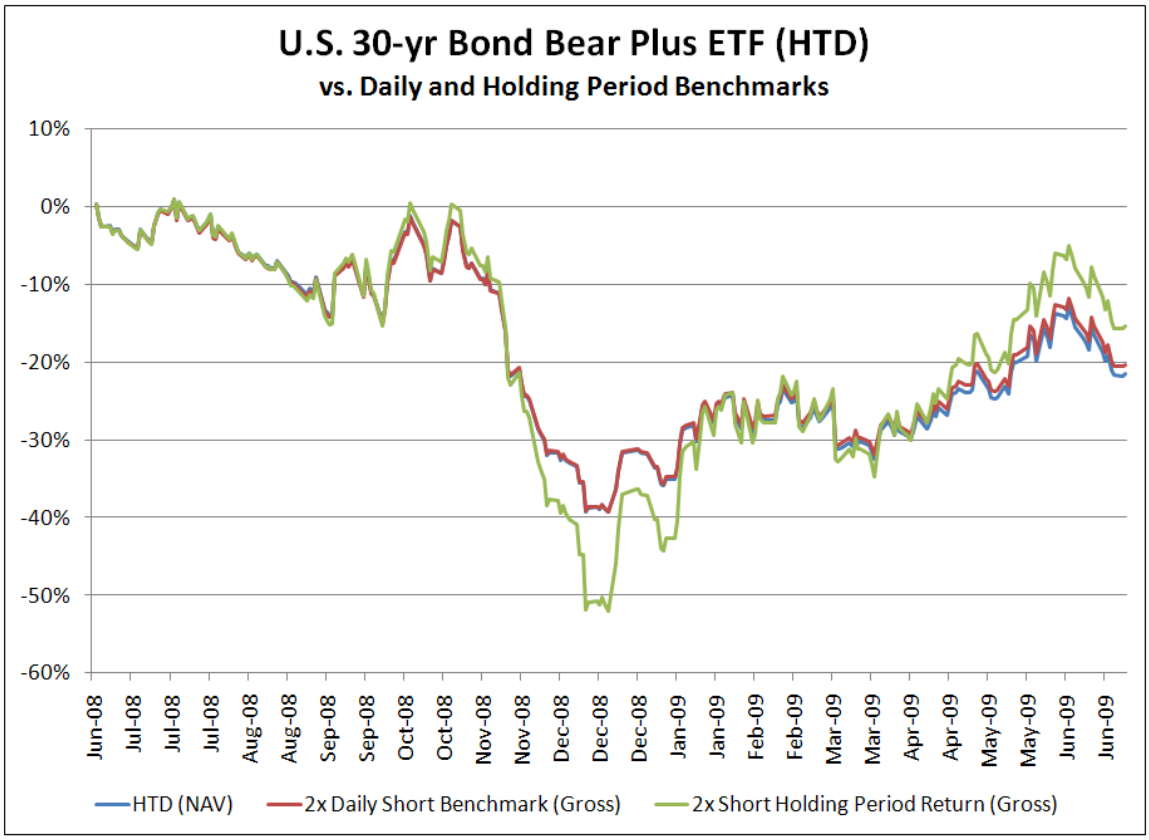


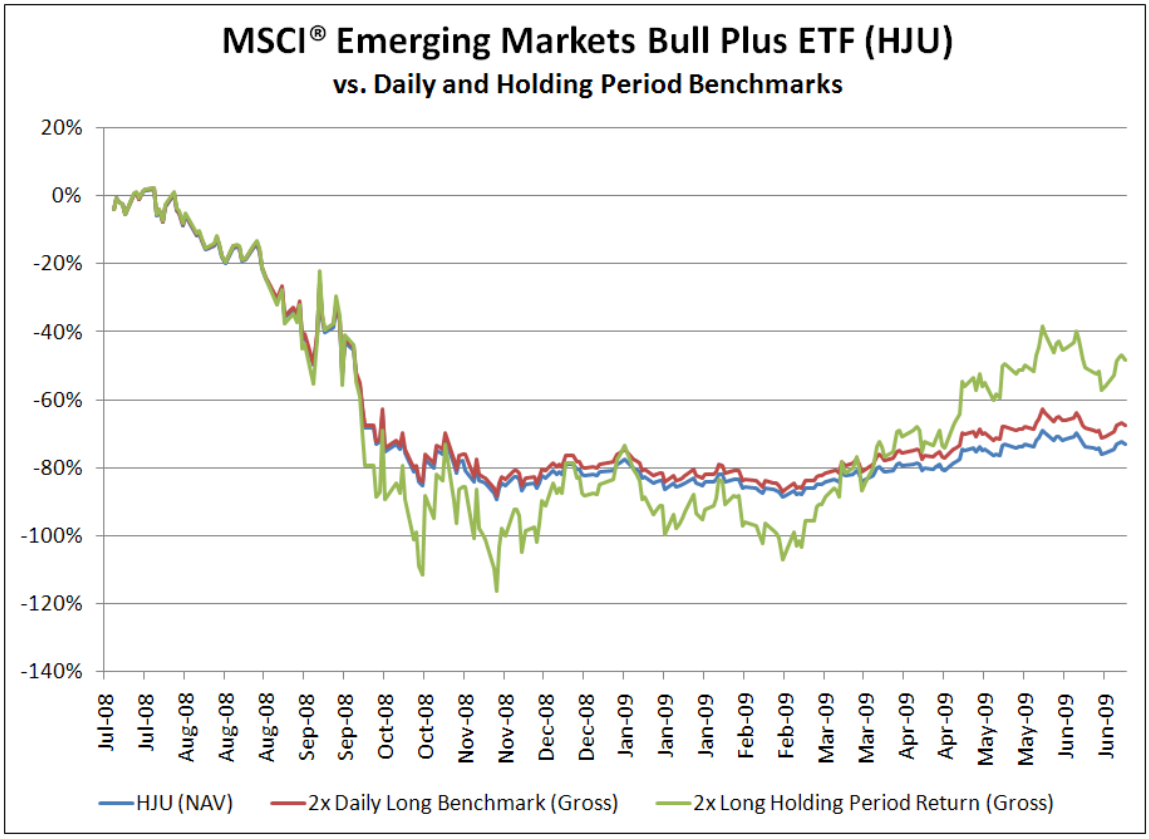


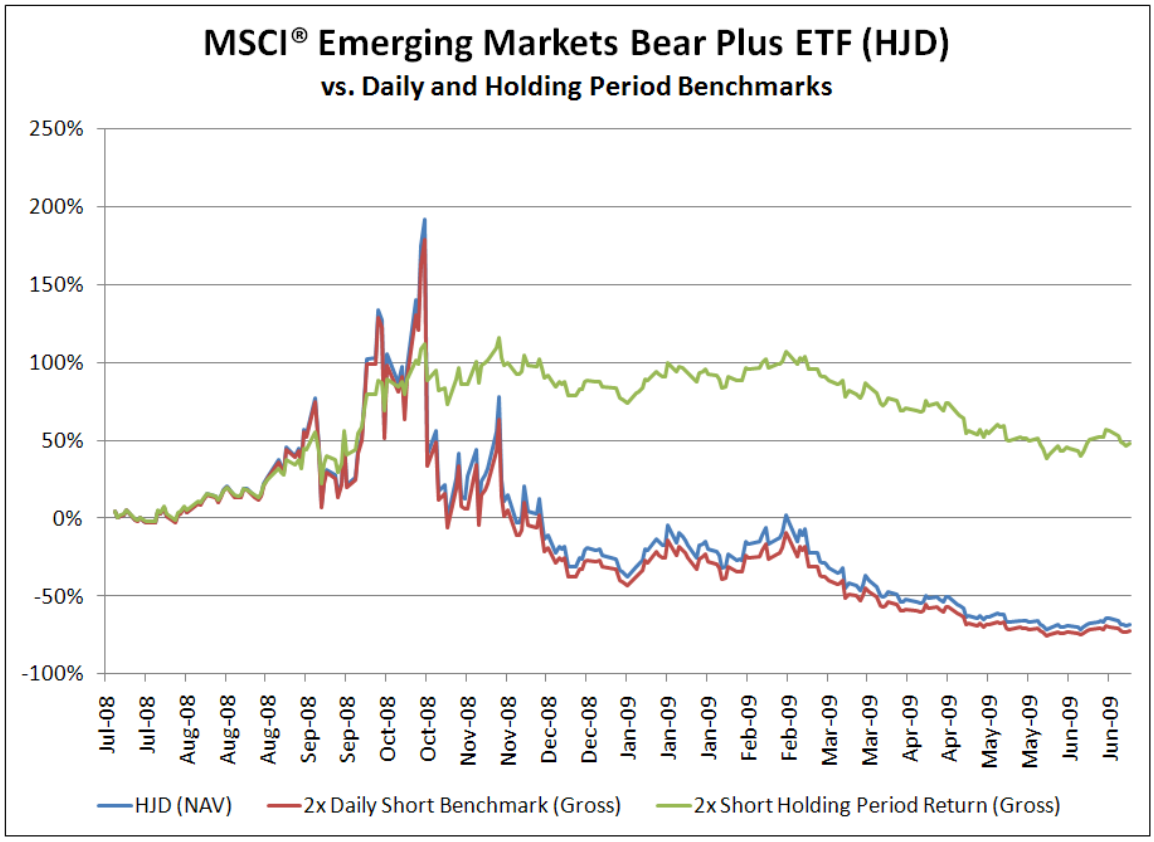












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