FORTEM CAPITAL

FRIDAY NIGHT 'LIGHTS

Leveraged and Short Exchange Traded Funds (ETFs)

2nd September 2016

This week we take a brief look at leveraged and short ETFs and consider the pros and cons of each, both of which in our opinion have similar inherent flaws for the medium to longer term investor.

The leveraged ETF provides X times exposure to an underlying investment. Taking the FTSE 100 TR Index as an example for this piece, traditional long only ETF providers such as Vanguard or iShares all offer tracker ETFs. The leveraged ETF therefore must provide an investment exposure of greater than 1:1, obviously. There are numerous examples out there, which we won't name, but they all follow a similar investment objective. That is, on any particular day, they will provide X:1 investment exposure to an underlying investment. So a 3:1 leveraged ETF on the FTSE should return 3% before fees, should the FTSE be up 1% on a particular day. All of this seems pretty obvious, so what are we getting at? Well the analysis below looks at how the funds have to rebalance their holdings every day, such that the daily X:1 investment return holds true and what impact that has on returns for an investor holding the fund beyond just the one day. It might just surprise you what actually happens.

The best way to illustrate that is by way of numbers and before you roll back your eyes and discard this piece, bear with us, sadly for us we find it quite interesting and hopefully you will too.

Day 1
Fund investment objective is 3:1 investment exposure
Fund receives £100 from investors, borrows £200 from capital markets and buys £300 of stock
Fund NAV: £100 [£300 of stock - £200 loan]

Day 2
FTSE appreciates by 3%
Investments: £309 [£300 * 103%]
Loan: £ (200)
NAV: £109 [£309 - £200]

At this point the investment exposure for the following day is no longer 3:1, but 2.83:1 [£309 / £109), so the fund must borrow an additional £18 and buy £18 more stock. At the end of day 2, ready for new investors on day 3, the fund is then back to 3:1 exposure, [£327 / £109] and holds £327 of stock and owes £218 so the net NAV remains £109 [£327 - £218]

Let us now take three hypothetical scenarios on day three and then see what the investment 'experience' has been for both investors who invested on day 3 and indeed those who invested on day 1.

	Scenario 1 FTSE flat	Scenario 2 FTSE -3%	Scenario 3 FTSE +3%
Day 3 NAV	£109	£99.19 [£109 * 91%]	£118.81 [£109 * 109%
Day 3 NAV Return	0%	-9% [£99.19 / £109 -1]	+9% [£118.81 / £109 -1]
Day 1 -3 FTSE Return	+3%	0%	+6%
Day 1 – 3 NAV Return	+9%	-0.81% [£99.19 / £100 -1]	18.81% [£118.81 / £100 -1]
3 : 1 under overshoot	0%	-0.81%	+0.81%

The highlighted numbers above indicate the bleed / gain from the daily rebalancing mechanism of these types of ETFs. Hopefully it is clear to see that over the medium to longer term, particularly in volatile markets the investment return received from holding a leveraged ETF can become significantly out of kilter with the 3 times performance of the FTSE 100 TR Index.

Indicative Levels – 6yr	
FTSE/S&P 5% step 60% EKIP	8.00%
FTSE 4% step 65% EKIP	8.00%
FTSE/S&P 60% digital 60% EKIP	41.00%
MSCI World Supertracker 70% EKIP	168.0%
S&P USD Supertracker 60% EKIP	180.0%
Topix GBP Supertracker 65% EKIP	177.0%

Rates (bps)	Current	Week Chge
GBP 1yr	47.40	-0.60
GBP 3yr	46.20	1.10
GBP 5yr	53.70	3.50

Equity Indices (%)		
FTSE 100	6837.94	0.00%
S&P 500	2180.35	0.52%
Nikkei 225	16925.68	3.45%
Eurostoxx 50	3046.46	1.20%

Currencies (%)		
GBPUSD	1.3338	1.53%

5yr Credit Spreads (bps)		
Citigroup	76.82	1.45
Credit Suisse	124.36	-2.11
Deutsche	210.93	-7.42
GS	94.74	1.52
HSBC	68.59	-1.96
JPM	59.31	-0.67
MS	91.55	1.70

Commodities (%)		
Gold	1323.59	0.18%
Oil	43.78	-8.10%

3m Implied (vol pts)		
FTSE 100	13.88%	0.62%
S&P 500	12.96%	0.79%
Nikkei 225	21.21%	0.83%
Eurostoxx 50	19.96%	-0.04%

5yr Implied (vol pts)		
FTSE 100	19.80%	0.10%
S&P 500	22.69%	-0.31%
Nikkei 225	20.08%	0.30%
Eurostoxx 50	19.80%	0.11%

Source Bloomberg / Partner Banks
Data as at 2nd Sep, 3.00pm

Upcoming events	
7th Sep	Eurozone GDP
8th Sep	RICS House Price balance

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Short ETFs operate on a similar basis; in that they operate a daily rebalancing mechanism even for 1 times short exposure given that in reality without daily rebalances losses could in theory be infinite in a continually rising market.

Day 1
Fund investment objective is -1:1 investment exposure to FTSE 100 TR Index.
Fund receives £100 from investors, short sells £100 FTSE 100 Stocks and enters into a stock loan arrangement, borrowing the stock to cover the stock sale and posting £100 as collateral
Fund NAV: £100 [£100 + £100 stock sale - £100 stock loan collateral]

Day 2
FTSE appreciates by 3%
Investments: £97 [-£100 * 97%]
Cash: £100
Stock Loan: £ (100)
NAV: £97 [£97 + £100 - £100]

This time, the fund in order to maintain its -1:1 investment objective on day 3, buys back £3 of FTSE 100 Stocks by unwinding £3 of the stock loan arrangement and receiving £3 of collateral back. The fund is then short £97 of stock, holds £97 in cash and has £97 in collateral posted with the stock loan counterparty.

We will then run the same scenario analysis as we did for the 3 times leveraged ETF to see the investment returns over the 3 days.

	Scenario 1 FTSE flat	Scenario 2 FTSE -3%	Scenario 3 FTSE +3%
Day 3 NAV	£97	£99.91 [£97 * 103%]	£94.09 [£97 * 97%]
Day 3 NAV Return	0%	+3% [£99.91 / £97 -1]	-3% [£94.09 / £97 -1]
Day 1 -3 FTSE Return	+3%	0%	+6%
Day 1 – 3 NAV Return	-3%	-0.09% [£99.91 / £100 -1]	-5.91% [£94.09 / £100 -1]
-1 : 1 under overshoot	0%	-0.09%	+0.09%

Again, as one can see, even with an unleveraged short daily rebalancing ETF, due to the nature of the rebalancing mechanism, the fund performance can deviate from the -1:1 performance objective over the medium to longer term.

In summary, the advantage for these products are that they offer a convenient and often cost efficient way of implementing intra-day investment views, but beyond that the disadvantage could be that they have the potential to deviate significantly away from the underlying investment performance.

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