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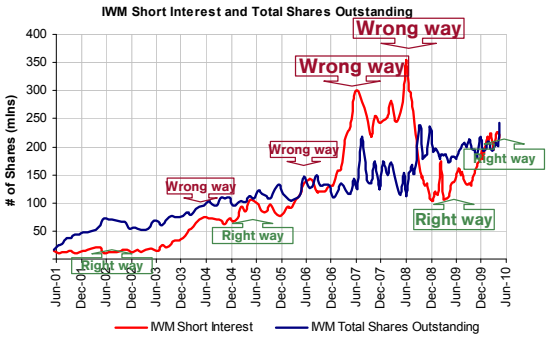
ETF Mythbuster

Can a Highly Shorted ETF Collapse?

Key points

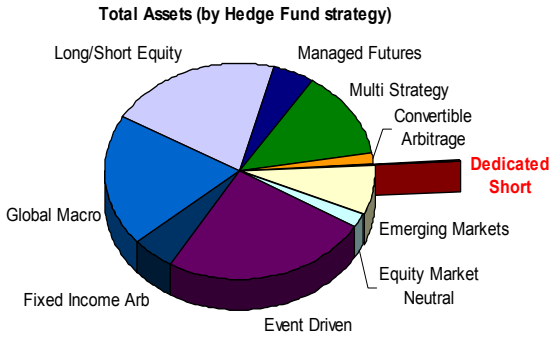
- Recent attention has been focused on the level of short interest exceeding the total shares outstanding in some ETFs.
- This has created a myth that these ETFs could collapse if a wave of large redemptions occurred.
- We find that this level of short interest does happen, and is not unusual – we show how such a situation might occur.
- More importantly, we bust the myth, showing that in fact a redemption initiates a natural self-stabilising mechanism that will correct any imbalances

Exhibit 1: IWM Short Interest a signal for the Russell Index Rebalance Performance



Source: Credit Suisse Portfolio Strategy

Exhibit 2: Most hedge funds are not net-short



Source: Credit Suisse Portfolio Strategy

A conspiracy theory view of short ETF positions

Late in 2010 there was a lot of media attention about a white paper titled "Can an ETF Collapse?". This paper was published on Sept. 15 by Bogan Associates, an independent research shop based out of Boston.

This paper focused on the fact that some ETFs actually have significantly higher short interest than shares outstanding. They deduced that if a large enough redemption occurred in one of these ETFs, it would be left with no net assets. Consequently, this would leave remaining investors owning a fund with no value.

Fortunately, the real world is more complex and self balancing than this simplified "movie verison" of events. In this report, we show why this is another ETF myth that can be busted.

Can an ETF have more shorts than shares? Yes!

So is their initial claim, that ETFs can exist with more shorts than shares, actually true? At first this sounds a like the argument for existence of dark-matter (otherwise the math for what we know doesn't work). But the answer, even though short interest data is delayed, is clearly yes.

In fact, it's not a new phenomenon

High short interest levels in ETFs are not a recent phenomenon. In fact, since 2006 the level of short interest in IWM (the Russell 2000 ETF) has been an important indication of the level of pre-positioning in the rebalance trade itself (See Exhibit 1). Too much short interest indicated there was too many traders doing the trade (and hedging with IWM). Consequently, a higher short interest than shares outstanding heading into the annual rebalance has typically suggested that the index trade would go the "wrong way" (index buys would fall and index sells would rise).

Are these "Shorts" bear-raiding the market?

In addition to hedging index arbitrage positions, ETFs are a popular hedging tool for many long-short investors, especially hedge funds. This explains why ETFs generally have a higher percentage of shares shorted than regular stocks.

Many investors consider high short interest to be a "negative" signal for a stock. But we highlight that, especially for ETFs, it is really more an indication of hedge fund leverage, as most hedge funds are net-long.

- According to hedgeindex.com (click here, see Exhibit 2), dedicated short assets are less than 1% of all Hedge Fund strategies.
- Average hedge fund returns have beta of close to 0.27, implying they are actually net-long.

Whats' Going on in Exhibit 3?

- **Event #1:** 100 ETF shares are created by an Authorized Participant and sold to Investor A.
- At this point, there are 100 shares long and 100 shares outstanding.
- **Event #2:** Hedge Fund 1 wants to short the ETF (perhaps they want to hedge an existing long position), so they borrow the ETF from Investor A and sell it to Investor B.
- Now there are 200 shares long, 100 shares short, and 100 shares outstanding.
- Note that any long holder (such as Investor B) can lend his stock whenever he pleases – he has no idea whether or not the shares he received are borrowed or not
- **Event #3:** Hedge Fund 2 wants to short the ETF also (maybe as part of a pairs trading strategy); they borrow the ETF from Investor B and sell it to Investor C.
- Now there are 300 shares long, 200 shares short, and still 100 shares outstanding.

Therefore, each share short-sale leads to an additional long & short position, settled using the original long positon, which is on loan. This increases open long and short exposures, but does not increase the shares outstanding.

We also caution that the typical short interest ratio metric can be misleading, especially for ETFs, as not only is short interest data delayed, but ETF shares outstanding are constantly changing due to creations and redemptions.

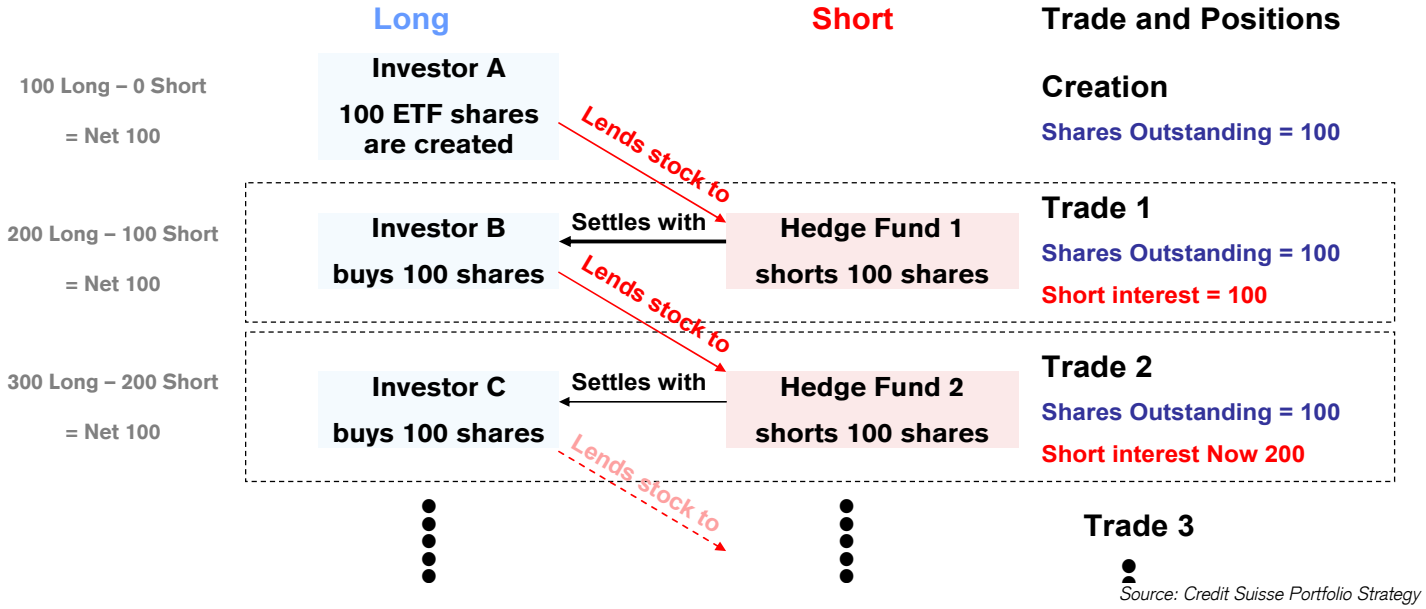
So where do the extra shares to short come from?

In reality the explanation is straightforward, as we show in the example below.

To understand this process, it's important to understand the difference between a long holding and a stock loan, and how they are accounted for by a custodian. Specifically, note that:

- Every share purchase must be settled with a stock.
- Every share purchaser can lend their stock.
- A short seller must deliver stock to the person buying from them. This is done by "borrowing" the stock temporarily from another long holder.
- Any long holder who "lends" their stock still has a long position - even though their "stock" is now lent (just as renting your home means that although you can't reside in it, you still own real estate!)
- Custodians don't record whether the stock used to settle a trade was "lent" or "natural". So in the example below, investor B has just as much right to lend their stock as investor A.
- Note that if these were paper stock certificates, these 3 trades would be settled using the exact same share certificate. And this cycle can continue….

Exhibit 3: **Example of how short interest can exceed shares outstanding**



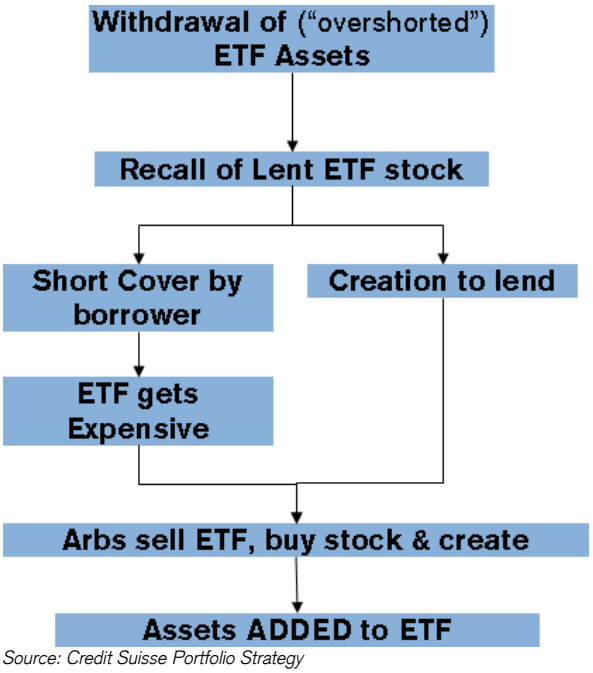
Source: Credit Suisse Portfolio Strategy

Isn't it dangerous to have more shorts than shares?

Not if we consider the Futures market; there are no "net" futures assets for any contract – just a concept of "open interest" (and margin accounts). For every long future there is a short future in existence. And yet that market functions efficiently and, in the case of the SPU, trades over $100bn each day.

For stocks, "margin" exists in the form of collateral buffers on stock loans.

Exhibit 4: **When a large redemption occurs in a heavily shorted fund either additional ETF units are created by the market, or the short sellers are 'squeezed' out.**



Source: Credit Suisse Portfolio Strategy

Other ETF Mythbusters:

We've busted a number of other of ETF myths in the past. For more information, click on the links below:

- Illiquid ETFs cannot be traded in size: The Hidden Liquidity of ETFs
- ETFs have bad tracking error: Tracking Down the Truth
- ETFs have wide spreads and are expensive to trade: Covering the Spread
- Levered ETFs do not performing as they should: Triple Trouble

Can an over-shorted ETF collapse? No!

In the previous section, we showed that ETFs may have more short interest than shares and described how this can occur. It's time to address the myth: Can an ETF Collapse?

Redemption triggers a recall of loaned shares

Unfortunately, the conclusion in the Bogan report ignores two very important market principals that affect ETF trading

– an arbitrage market exists, and

– Redemptions result in a recall of lent stock.

Once these facts are included, the chain of events that would actually follow a large redemptions is:

1. When the large owner redeems or sells ETF shares where a large short interest position exists
2. Their custodian would need to recall the loan, so the sale (or redemption) can be settled
3. The borrower of the stock would need to either:
   a. Close their short position (so they could return the lent stock) or
   b. Borrow from someone else.
4. If the short seller (borrower) closed their short position
   - They would buy ETFs in the market (this may even trigger a "short squeeze" in the ETF).
   - This would make the ETF price rise, making it trade "rich" versus the underlying stocks
   - Arbitrageurs would step in and buy stocks/sell the ETF. Transferring the net short to them.
   - Then at the end of the day, they would "create" units to offset their long stock position with the short ETF position.
   - This would return assets to the ETF provider, boosting the shares in the ETF fund, ensuring it still has assets to back remaining investors.
5. If the short seller (borrower) re-entered the loan market to borrow alternate stock
   - The market is already over-shorted, which typically means the cost of borrowing is high
   - In these instances, different arbitrageurs can actually profit from "creating" ETF shares to loan – earning fees on the lent stock
   - Similarly to above, at the end of the day, the "creation" of units would return assets to the ETF provider, boosting the shares in the ETF fund, ensuring it still has assets to back remaining investors.

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