ETFS Research

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ETF Volatility: Truths and Misconceptions

High Level Observations

- ETFs have been unfairly targeted as the cause of market volatility
- ETFs tracking the ASX 200 have successfully stayed in line with the volatility of the benchmark
- ETFs can cause movements in the underlying market but so do active funds and investors buying securities directly
- In nearly all cases ETFs match the volatility of the market they track and this is what should be expected from an index tracking fund.

Introduction

ETFs are growing in popularity in Australia as investors understand that gaining exposure to certain asset classes and regions can be done easily and cost efficiently through ETFs as opposed to other more traditional vehicles.

Lowering the cost of running portfolios and reducing risk by investing in funds which hold multiple companies (normally thirty or more) has become the foundation of prudent portfolio management. This coupled with the ease with which investors can now get exposure to certain asset classes and regions, has seen ETFs become the fastest growing product type in Australia, with over $37b in FUM, and this is likely to accelerate. However, with this growing adoption of ETFs has come various negative criticisms with one of the most consistent being that ETFs are causing market volatility and reacting differently to the underlying securities they track.

The reality is that, in nearly all cases, ETFs do what they're supposed to do, which is to track the underlying basket of securities set by the index. If the underlying market is volatile the ETF should be volatile and, if the ETF isn't exhibiting the same level of volatility as the underlying, investors should be very wary. Ultimately the ETF is just a wrapper for the securities underneath, so it should transmit the characteristics of those securities faithfully.

Additionally, it is worth considering that having a fund that is open ended and trading during market hours has huge benefits in terms of investors' risk mitigation. During the GFC there were many hedge funds around the world where the sell price wasn't transparent. It would often take several days/weeks more than was expected to be provided and, often, investors weren't even able to sell their position as the funds "gated" investors i.e. they put a halt on redemptions. This wasn't the case for ETFs, with "gatings" still being a very rare event. Most investors nowadays don't consider such risk aspects but nothing was more important to many investors during the GFC than having the ability to sell.

Below we explain the principals around how ETF market makers set a price in the market and then look at some real examples to see how this played out in reality. The evidence shows that the main benchmark Australian ETFs (SPDR's STW and iShares' IOZ) traded with competitive spreads consistently through the past year and were hardly affected by the volatility in the US in early February. Additionally, the ETFs were far less volatile than many of the individual securities they track.This is exactly what you would expect from a diversified basket, and should go a long way to reassuring investors that the concerns around ETF volatility are misplaced.

Furthermore the myth that the ETFs are the sole cause of moving the underlying markets from some exposures (usually small cap or emerging markets, where liquidity is low) is debunked.

ETF price discover and volatility - theory

There are four main aspects used by ETF market makers in making a price.

1) *Basket Costs*

The basket cost refers to the cost for the market maker to buy the underlying securities in the index. As ETFs track an underlying basket the market maker refers to the cost of buying the underlyings at all times. So, if the underlying basket will cost the market maker fifteen basis points (0.15%) to buy/sell then the market maker will begin with a spread of ten basis points on both sides of the mid point (twenty basis points in total) to reflect this cost.

2) *Creation/Redemption Costs*

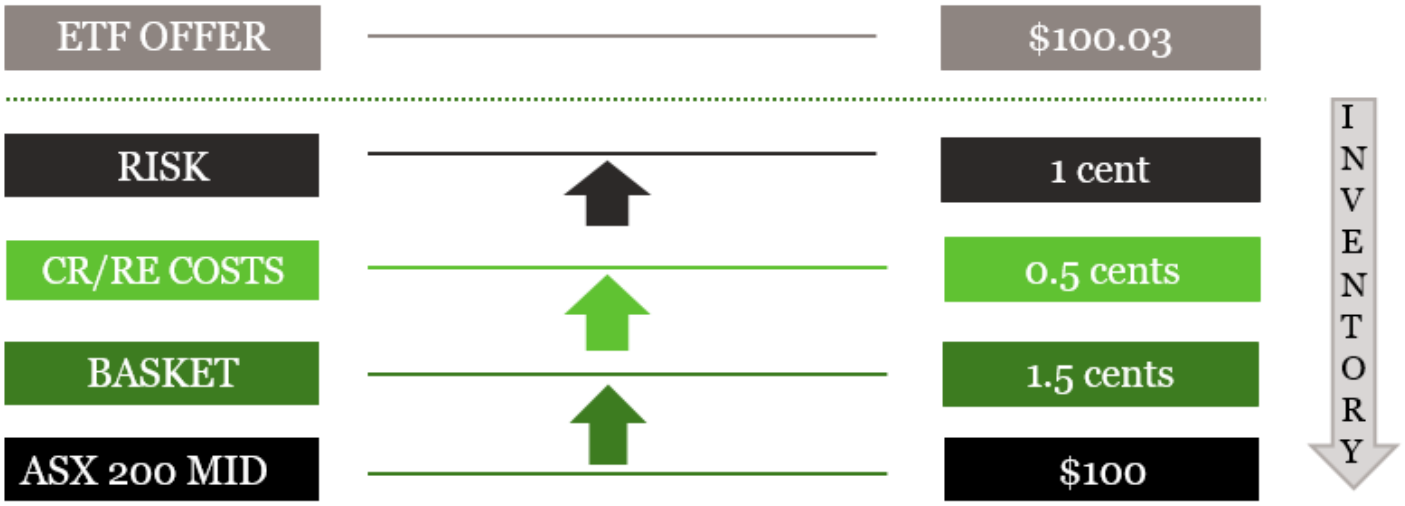
The creation and redemption costs are the costs that the market maker faces from the fund manager. These costs normally relate to custody fees the fund manager pays to their custodian, that is thenpassed on to the market maker as they are trading costs. Depending on the underlying securities being tracked, as well as any agreement that the market maker may have with the fund manager, this usually ranges from zero to five basis points (0.05%) or more. Again these would be reflected in the spread the market maker provides.

3) *Risk/Profit*

The risk/profit part of the spread is the hardest to quantify for an external party as it is impossible to know exactly the amount of risk the market maker wants to take at any time, or even how they calculate the level of risk they have. However, ETF market makers are one of the most sensitive types of market maker to risk and how it can affect their pricing and, where possible, will add a small buffer to protect themselves from aggressive market moves and to make a small profit from their transactions.

4) *Inventory and Competition*

Finally, the market maker's inventory and the level of competition the market maker faces are both "spread compressors".These factors increase the probability that the market maker will reduce their spread (at the cost of the risk/profit margin) in an effort to either off-load inventory or to ensure their price is more competitive than others and thus win transactions.



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Bringing this together

When looking at the individual components, the main area where volatility will spike, and therefore the bid/ask spread will increase, is the basket costs. If the VIX (the US volatility indicator widely used as a general view on volatility) jumps from 15 to 45, you would expect a similar three-fold jump in volatility (at least) for any ETF tracking it. It is a common misconception that the ETF will not be as volatile as the underlying market and is cushioned from wider market vagaries. This is not the case. The ETF should, at all times, exhibit exactly the same level of volatility as the underlying market.

Many investors expressed shock when ETNs (Exchange Traded Notes – similar to ETFs but with no physical backing) tracking the triple leverage inverse of the VIX dramatically dropped in value when the VIX increased by 300%+ over a few days in early February 2018. Of course, any product faithfully tracking the three times opposite of an index that jumps by 300% + will sustain heavy losses and the ETN faithfully passed that on.

The creation and redemption cost have little impact except to add to the spread. They are unaffected by volatility.

However the risk section will be impacted by volatility and this is because, in times of heightened market volatility, the risk that a market maker's price is wrong is commensurately higher too, so they widen the spread to protect themselves. This is the same as with single stock and options market makers so is not the exclusive domain of ETF market makers.

So how does this play out in reality?

Below is an illustration of the spreads of the ASX 200 future, State Street's ASX 200 ETF and the iShares equivalent from January – March 2018.

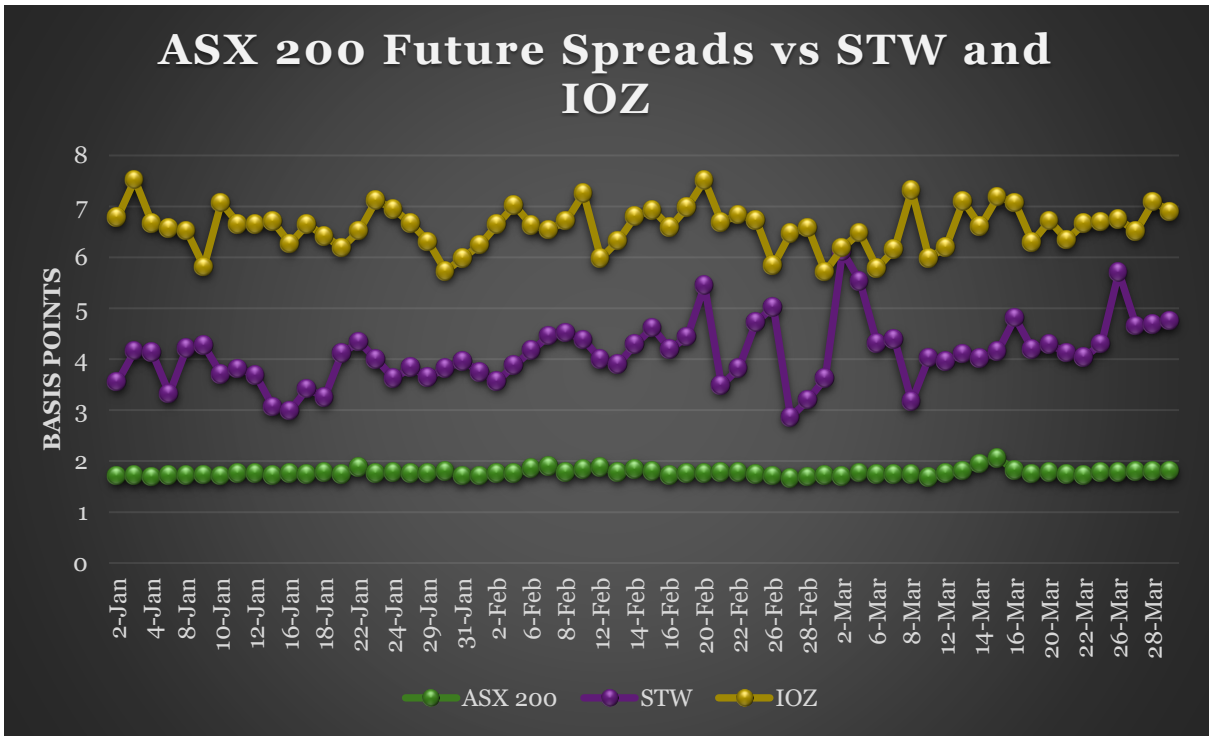

Chart 1: ASX 200 Future Bid/Ask Spreads vs SPDR's ASX 200 (STW) and iShares' ASX 200 ETF (IOZ) for period January to March 2018. Source - Bloomberg

Visually it is easy to see that the two ETFs have wider spreads than the future. This is usual in almost every market as the domestic benchmark future is normally very heavily traded and, therefore, has many market makers and other participants engaged with the order book, thus creating extremely tight spreads versus the ETF equivalents.

It is also easy to see that STW's spread is better than that of IOZ. This is also normal where there has been a long existing incumbent ETF where the ETF liquidity is pooled, in this case STW which launched at the beginning of the century.

However the most crucial observation is that over a period of months, both ETFs show very consistent spreads with neither ever breaching 9 BPs (using a rolling average – bid/ask every five minutes over fifty intervals).

Even during the US volatility spike in late January/early February 2018 (see Chart 2) the spreads of the two ETFs continued to remain in line with that exhibited by the ASX 200.

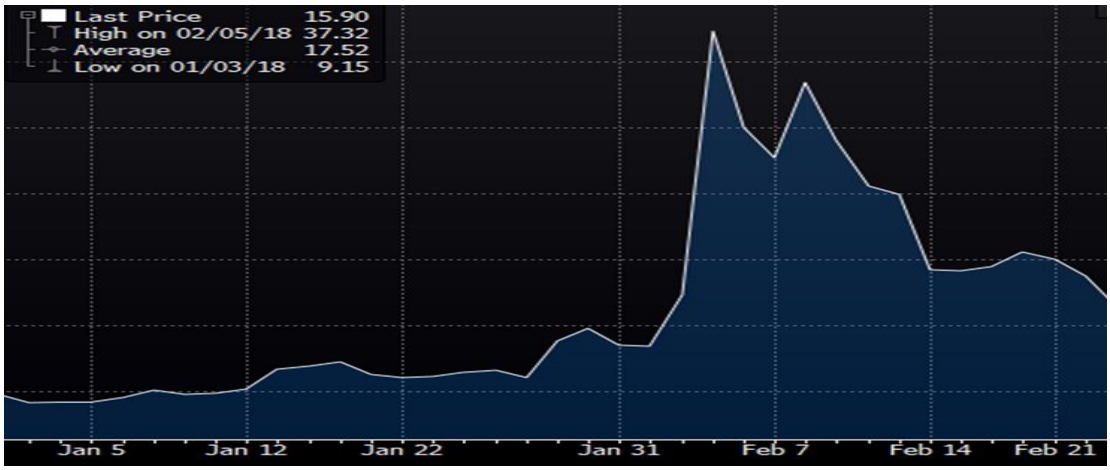

Chart 2: The VIX Index Spiking In Early February 2018. Source: Bloomberg

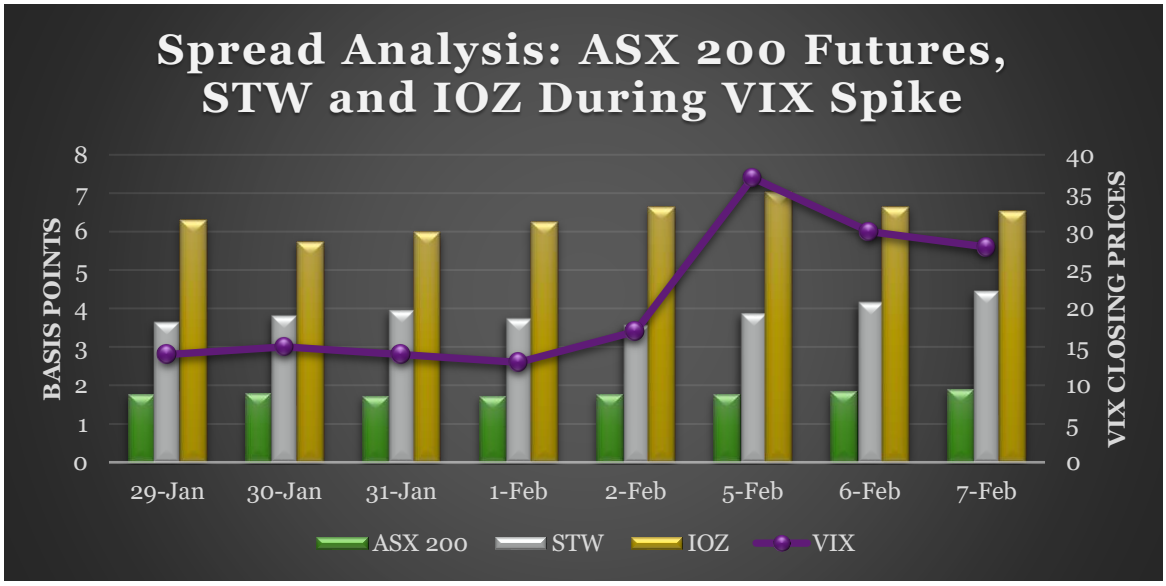

Chart 3: ASX 200 Futures Average Bid/Ask Spread vs STW and IOZ During Recent Volatility Spike for period January to March 2018. Source: Bloomberg

The ETFs did exactly what they were meant to do, which is track the underlying components faithfully, thus providing a listed vehicle that truly transmits all components of the index it tracks.

A further point to note is that, over the same three-month period, the bid/ask spread on STW remained highly competitive and was far tighter (equals cheaper) than many of the companies that are in the ASX 200. This is important as the ETF covering the ASX 200 is a weighted average of the securities within it, so should reflect a part of every company's own spread, and on balance, be more competitive than many of the companies within the index. The chart below shows this by comparing STW with JB Hi-Fi (a mid-cap stock) and Chorus (a smaller cap stock). Again, STW has done exactly what it should have done and reflected the spread of the two hundred companies within the index versus being overly influenced by one or two.

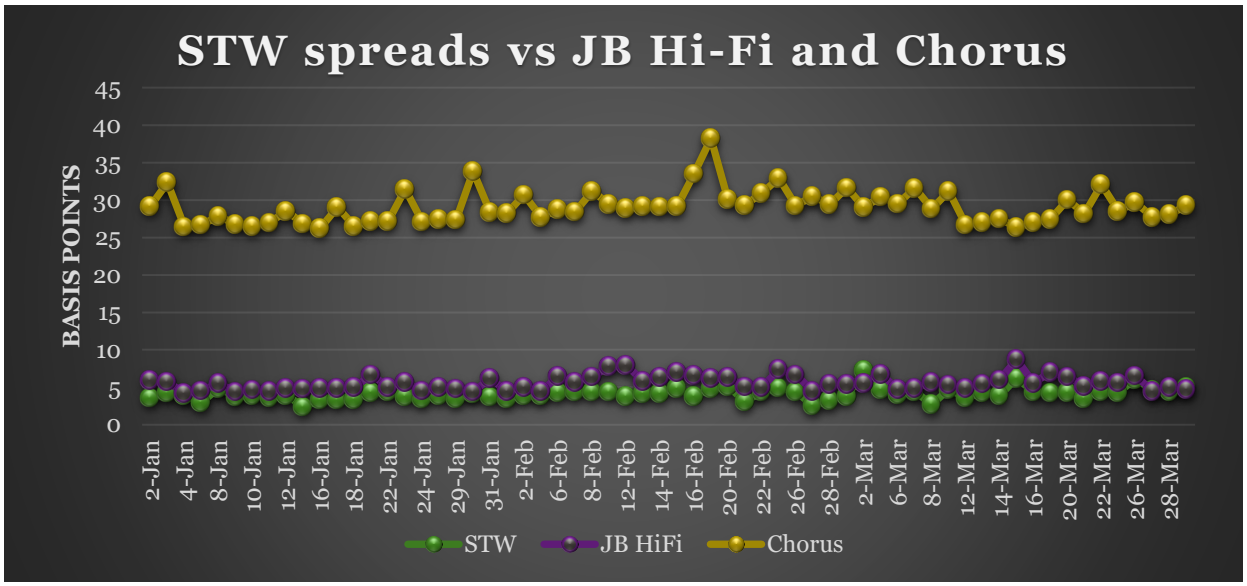

Chart 4: STW Average Bid/Ask Spread vs JB Hi-Fi and Chorus. Source: Bloomberg

Are some ETFs so big they're causing market volatility?

A closely related accusation to the above discussion on general ETF volatility is that certain ETFs are so big, relative to the underlying market they track, that they can move the market. The assertion is that many investors buy (or sell) the ETF covering a certain market/theme and in doing so, force automatic buying of the underlying securities by the market makers who need the securities to give to the ETF provider to create new units.

In Australia the size of ETF trading is very low compared with other regions so it's unlikely that any ETF has an effect on the underlying market it may track. However, in the US there are several ETFs where this may be the case. The truth is that where the demand for the ETF is high versus the standard trading volumes for the underlying securities, there can be movement on the underlying securities over and above their normal range. This movement is because the underlying market needs to absorb the additional demand. Market makers achieve this by making the price of the securities more expensiveas is the case in any demand/supply situation where demand exceeds supply and therefore the participant with the supply can demand a higher price.

Crucially, this is not just the exclusive domain of ETFs, who have taken far too much of the blame for this. As mentioned several times, the ETF just tracks a basket of securities. If the ETF didn't exist, the investors who have the same demand would elect to buy the same, or similar, securities either as a direct basket or via an active manager's fund. This is in fact, exactly what is happening every day.

Investors interested in a region or theme may elect to buy a basket of securities, or buy an active fund or buy an ETF. All three will have an almost identical effect on the underlying market. The only difference is that ETF are listed and therefore transparent for all to see.Due to this they are targeted as the sole cause, precisely because they're visible and the causal link between the ETF and the underlying securities is easy to see i.e. high levels of ETF buying must equal high levels of underlying security buying. On the other hand, it's not

easy to discern what is causing non-ETF related purchases, as there is nothing to indicate the motives behind other buying. Put simply, ETFs are blamed as they're easy to point the finger at. In actual fact, much of the volatility can be caused by activity that has nothing to do with ETFs.

Putting this in even starker perspective, in the US market, where ETFs trade the most in the world, they still only make up on average, 25% of the trading volumes. Meaning 75% of trading volume, three quarters of the market activity, has virtually nothing to do with ETFs at all.

Summary

ETFs are becoming one of the most popular product types in Australia. However, they have been targeted by many as creating volatility in the market. In almost every case this is not the case and ETFs do exactly what they're designed to do, which is track the companies the ETF follows as closely as possible. Crucially, in Australia, the evidence shows that from January – March 2018 the two ETFs tracking the ASX 200 fulfilled their mandate and tracked the index. They certainly didn't cause volatility and were demonstrably more competitive in bid/ask spread than many of the companies within the index.

ETFs have been unfairly targeted because they threaten many traditional product sets in asset management and, because they are transparent and trade on exchange, they become easy to attack. Most of the evidence shows that the attacks are unfounded and in fact, ETFs continue to present a fantastic option for investors where liquidity, access, cost and transparency are important foundational principles.

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