

September 2020 Newsletter

Dear Investor,

The Global Volatility Summit (“GVS”) brings together volatility and tail hedge managers, institutional investors, thought-provoking speakers, and other industry experts to discuss the volatility markets and the roles volatility strategies can play in institutional investment portfolios. The GVS aims to keep investors updated on the volatility markets throughout the year, and educated on innovations within the space.

1798 Lombard Odier Investment Managers has provided the latest piece in the GVS newsletter series.

Cheers,
Global Volatility Summit

11th Annual Global Volatility Summit

We are excited to announce the first ever Virtual Global Volatility Summit taking place from September 21 to September 23. Virtual GVS consists of thought-provoking panel discussions with managers and investors around the globe as well as a timely keynote from Demetri Sevastopulo (Washington Bureau Chief, Financial Times).

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Investing in volatility: the recipe for success

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July 2020

Why relative value volatility works.

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At a glance

- Volatility trading can be a lucrative endeavor, but the ability to generate consistent, substantial returns through entire market cycles has been extremely challenging. The tepid volatility environment of the past several years, combined with the whipsaw experienced in the first quarter of 2020 has only exacerbated this challenge. As a result, we have seen the number of successful managers in the space shrink, with a number of high-profile manager closures. Critically, this diminishing number of skilled players coincides with a substantial increase in the volume of derivatives, and the opportunity set for those remaining managers is ever more robust. This paper will outline the recipe for what we think makes a manager in the space successful.

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There is a significant opportunity arising from technical price inefficiencies across the derivatives market.

Introduction

“There are decades where nothing happens; and there are weeks where decades happen.” This quote from Lenin resonates strongly given how much the world seems to have changed in the first half of 2020. At Lombard Odier, within our 1798 Alternatives platform, we aspire to leverage our strong institutional infrastructure with strategies that are uniquely positioned to compete in an environment where there is an attractive combination of an abundance of opportunities and relatively few managers willing or capable of exploiting them. Through this lens, volatility and derivatives quickly came to mind. The volatility market's abundant number of mis-pricings result from the fact that many investors operate with restrictive mandates (such as hedging) and there are fewer and fewer arbitrageurs capable of exploiting them.

Hedge fund strategies focusing on derivatives and volatility can offer a truly diversified and often negatively correlated exposure to a broader portfolio. Further, the underlying markets are often structurally inefficient. Yet even with these abundant inefficiencies and non-correlation characteristics, the number of successful managers focused on this opportunity set has remained small and investors remain often very prudent as a result. In our opinion, there are clear reasons as to why the barriers to entry are substantial, but a manager with the right skillset (broad experience, discipline, technicality and a focus on relative value) can deliver very attractive returns, particularly in periods that are more chaotic, where traditional strategies struggle. As such, we are bullish on relative-value volatility strategies being a key

allocation in any portfolio of managers looking for a diversifying, true, alpha source.

The market place has many managers that will be categorised as long volatility. These are managers that use the derivatives market to express an inherent structural bias: investors whose perspective is influenced by a negative structural bias are attracted to the volatility market largely for its capacity to express a convex (but expensive to carry) hedge to a market dislocation. Conversely, there are managers categorised as short volatility. These are attractive to bullish investors who are drawn to the positive carry and the return-to-the-mean aspects of selling volatility/protection.

There is not huge complexity to run either strategy and, unfortunately, they each tend to perform poorly in the long-run: long volatility biased portfolio managers tend to experience a slower, more drawn out demise, and short biased volatility investors will see their end come more abruptly. True relative value volatility investors are rare. Those who possess an expertise across a wide variety of trade opportunities (to focus on attractive trades only), and can combine analytical work with deep understanding of market flows are unique. Participants who are able to combine those trades and monitor them in a robust portfolio are exceptionally hard to find. Fortuitously, the recent launch of our 1798 ADAPT Strategy has coincided with a regime for higher volatility and what we believe to be a very strong opportunity set for several years to come.

Investing in volatility: the recipe for success

Why is volatility lucrative

Pre 2008

Large sell-side banks have always liked the volatility space. It is a high margin business and a real money machine that can generate substantial profits. While on the surface, banks loved it, they probably did not make money every year because of the hidden toxicity/convexity, but maybe they made money nine out of ten years. Then the world changed: it became both more expensive and harder to keep risk on the banks' balance sheet (Volcker rule, change of culture). Banks could not monetize these positions as easily and they started leaving money on the table. Their business model changed. End users were using it to help their bottom line. Specialists were hiding behind balance sheets of banks.

Today

Large sell side banks don't take risk, they are just distribution agents. End users only care about directionality and the final payout, so pricing parameters can vary widely around their fair value. Specialists have been weeded out, and only the most talented players in this space can survive.

Every investment in derivatives includes a sensitivity to a combination of parametric exposures (such as volatility, correlation, dividends, etc.), but many investors disregard most parameters (often with a myopic focus on the final payout/protection) and as a result the derivatives market can become inefficiently priced. In fact, today derivatives are primarily used to design an optimized directional exposure: structured products for retail clients, hedges for asset managers, financing for corporations, regulatory needs for banks, overwriting for pension funds, and the list goes on... Yet these massive trades also create supply-and-demand imbalances for their pricing inputs, or parameters (such as volatility, correlation, dividends, etc.) Furthermore, evolving economic conditions amid an ultra-low rate environment of the last several years has generated a frenetic search for yield. Amongst popular new strategies, the so-called "short volatility trade," like auto-callable notes of equity replacement strategies, have become one of the most widely used yield-generating trade, and has created a massive supply of long volatility and long convexity, hence an opportunity that few investment professionals are equipped to capture. For non-specialists, the complexity and lack of transparency of derivatives means these pricing parameters are often disregarded, and, thus, can deviate widely from fair value without affecting the behavior of the end-user.

Volatility is obviously a key component of any derivative instrument as it is one of the most important inputs to properly model its pricing. Although many assume such a critical input is universally understood, the various participants often observe through different lenses. Volatility is assessed by some investors with a very strong fundamental lens as directly linked to credit and equity, and economist Robert C. Merton's intuition was that a company's equity could be treated as a call option on its assets, thus allowing for the application of Black-Scholes option pricing methods. However, some investors see volatility through a very quantitative lens, while others invest in volatility almost as a macro substitute. They forecast volatility almost in isolation, based on historical trends and their macro assessment of the future.

Why the opportunity is strong and sustainable – volumes growing

The prevalence and magnitude of the opportunities in derivatives and market volatility have grown over the past decade. There have been major changes within the financial industry due to increased regulations, an evolving economic environment, and an abundance of new entrants. These shifts have created dislocations, resulting from an imbalance of demand and offers in derivatives, particularly around pricing parameters.

Volatility and derivatives end up with multiple mis-pricings. While some investors that should participate do not, others partake despite a very myopic lens. They are structurally impaired and do not consider derivatives in isolation or fundamentally, but rather are focused on a specific component of the derivative instrument, disregarding the rest of its characteristics. Many participants invest with a macro angle, without much consideration for the complexity of the investments they make.

As a result, there is a significant opportunity arising from technical price inefficiencies across the derivatives market. Prospering from it requires the ability to identify, understand and trade successfully around parametric dislocations generated by supply-and-demand imbalances resulting from oversized derivatives flows. This is true both within markets and across markets, benefitting from flows coming from market participants with different abilities, desires, constraints, incentives, market access, priorities, timing, biases, interests and utility functions, in a universe marked by a relative scarcity of sophisticated arbitrageurs.

- In 2019, global listed futures trading volumes grew by 20%, to reach 19 billion contracts.

- In 2019, global options trading volumes grew by 15%, to reach 15 billion contracts.
- On the OTC side, which is really the underwater side of the iceberg, the outstanding notionals went from 6.5 trillion to seven trillion between the second half of '17 and the first half of '19.
- Volumes in March 2020 lend to the fact that 2020 annual volumes will surpass that of 2008.

Why the opportunity is strong and sustainable – fewer participants with greater barriers to entry

The derivatives market is growing in size and complexity, but value at risk in banks is not growing, and the number of players who participate in structuring these trades, either on the buy side or on the sell side, is not growing.

The increasing regulation on major financial companies, such as the Volker rule, reduced the number of market participants able to capture this alpha. Bank-owned proprietary desks, which had played an important role historically, disappeared. Besides, new balance sheet constraints and costs are limiting sell-side trading desks banks' appetite, making them unable to trade these dislocations significantly. Ever more constraining risk scenarios, low risk tolerance and new culture are reducing their free will.

The opportunity set is dynamic and market instruments evolve through time. Many sophisticated investors will tend to have a limited expertise because the complexity acts as a barrier to entry and because it is difficult to aggregate different derivative instruments, with very different characteristics, in the framework of a portfolio. The result of being too specialized is that there are at times a lack of opportunities, which leads investors to force their capital in less attractive opportunities.

The breadth of the investment universe is tremendous. First, derivatives exist in all major assets classes: equity, FX, commodities, rates and credit. For each of the asset classes, it is possible to implement many strategies such as: correlation, corporate trades, delta-1 (Dividends, repo...), dispersion, outright volatility, gap risk, product arbitrage, premium, skew, term structure, tail and volatility spreads. Further instruments traded to implement these strategies would include: vanilla options, basket options, rainbow options, barrier options, digital options, quanto options, composite options, conditional options, variance/volatility/correlation swaps, Conditional var/vol/correl swaps, futures, cash equity, TRS, TRF, volatility derivatives futures and options (Vix...) and dividend swaps, futures and options.

Most derivatives traders are experts who are comfortable at trading specific volatility strategies and struggle when these strategies are not attractive. Conversely, while individual derivatives strategies tend to not be very complex, each requires technology (screening, pricing), experience (understanding the behavior in different market environments), networks (liquidity

access, idea exchanges) and monitoring (live portfolio management systems, risk tools). There are very few organizations that have the infrastructure to support a vast set of trading strategies. Often parts of the markets are uninteresting and offer unattractive trade opportunities but investors with a narrower focus might be forced to put capital at work in these less attractive opportunities. Finally, when the investment opportunity set widens, to be able to build a portfolio that is resilient in throughout evolving volatility regimes and remain focused on the most attractive trade opportunities at any point of time, a strategy requires discipline and a clear investment process. This will enable the clear integration of new trades, the clear rebalancing of the portfolio, exiting positions that are less attractive, and evaluating trades objectively regardless of their recent performance. This discipline, which requires a team to possess substantial investment experience and strong analytical skills integrating market dynamics and flows, is only possible if complemented with strong tools that enable clear stress testing of positions as well as the aggregation of trades in the context of a portfolio.

Although an extreme example, Nassim Taleb reminded us of how much these volatility regimes can change and how sometimes the past is a poor indicator of the future. His most famous example does an analogy of the situations of turkeys prior to Thanksgiving. "Consider a turkey that is fed every day," Taleb writes. "Every single feeding will firm up the bird's belief that it is the general rule of life to be fed every day by friendly members of the human race "looking out for its best interests," as a politician would say." "On the afternoon of the Wednesday before Thanksgiving, something unexpected will happen to the turkey. It will incur a revision of belief." Turkeys will definitively experience a large shift in volatility regime.

Why managers exclusive to long volatility or short volatility are challenged

As referenced previously, a focus on either long or short volatility has prevented many potential arbitrageurs from coming in and benefitting from opportunities as the markets shift. Instead, the derivatives and volatility landscape has been occupied by managers who tend to have a strong tilt to their investment bias. In effect, managers tend to be either long biased volatility, short biased volatility or look to manage this view dynamically.

Long biased managers struggle to build a portfolio that does not have a large negative carry component. This bleed is often too hard to endure for investors and over time, this strategy generates a negative expected return profile. Given the lack of volatility in the last decade, most of these managers have disappeared. Investors have learned that these managers that are long volatility will eventually die of a slow bleed. Investors have realized that claiming to be an absolute return strategy that is long volatility

is impossible, and that a manager cannot do it all (alpha + hedge) and that you don't want to be invested in a manager who is dependent on the environment and subject to timing. People invest in long volatility because they want to hedge, not for alpha.

Conversely, short biased volatility managers benefit from a positive carry component and sometimes sell their strategy as relative value given it shares similar return profile characteristics in good times. Unfortunately, they often have outsized drawdowns in periods of stress.

Finally, many managers look to time their exposure to volatility, often looking at historical ranges as an indicator of positioning. They are particularly subject to changes in regimes of volatility and this has proven a difficult strategy over time as well.

Why relative value volatility works

Starting with the benefits of having a large investment universe, one can build a balanced portfolio that can evolve, adapt, and be innovative within the universe, without style drift. One has to be patient and opportunistic. Remember, there is one reason behind every trade – a derivative flow and a client.

We believe there are 5 major, attractive ways to construct a relative value volatility strategy and trading the related dislocations: Arbitrage, Relative Value, Risk Sharing, Risk Premium & Convexity. The ability and experience to invest in all offers a key structural advantage, as it enables the investor the ability to shift capital in response to market opportunities.

1. Arbitrage

This trading approach primarily involves exploiting relationships between different products based on the same underlying that are linked through a mathematical reality. For example, the VIX is mathematically linked to SPX volatility, yet products based on the VIX can have lives of their own because of their idiosyncratic flows and divergence from what the mathematical relationship would normally imply. In essence, the large variety of investors trading those different instruments each have their own set of characteristics. Those differences generate unbalanced flows and therefore arbitrage opportunities.

2. Relative value

This trading approach primarily involves exploiting relationships between different, though related, underlyings, often by using the same product/implementation. Dispersion is a classic trade example of this investment approach.

3. Risk sharing

Risk sharing is often confused with risk transfer and recycling, yet it is radically different. Risk transfer occurs frequently, is typically standardized and packaged by banks to offset risk that is too large for the street. It is often a consequence of

hedging retail structured products. There is massive crowdedness and negative convexity associated to owning these trades for often limited carry. Risk sharing on the other hand are unique and rare opportunities, that exploit close relationships with a handful of broker dealers. These types of trades are often the consequence of a strategic corporate trade that is too large to carry for a single bank. The structuring of this risk sharing involves a continuous bilateral dialogue and results in owning idiosyncratic risk with often a very favorable risk reward characteristic.

4. Risk premium

This trading approach primarily involves exploiting in a discretionary and opportunistic way the structural dislocations coming from established and long-lasting supply and demand imbalances. Risk Premia, such as the historical expensiveness of implied volatility compared to realised volatility, often have been the subject of academic research.

5. Convexity

This trading approach primarily involves exploiting the dynamic of market parameters such as volatility, correlation, dividends etc. in market regimes that are extremely different from the prevailing market regime. Positions taken with a convexity investment approach usually have very small sensitivities in "normal" market conditions, but these sensitivities will grow in an asymmetric way when the market moves away from the prevailing regime.

Why relative value volatility is difficult to implement

Building up derivatives investment strategies combining quantitative and qualitative approaches require a large investment and various skills sets. A qualified investment team, IT infrastructure, liquidity access and expert teams (compliance, operations, product specialists) are many of the prerequisites needed to perform within this mandate. When combining the factors of (1) low overall capacity and (2) high infrastructure requirements and high structural barriers to entry, it is clear it is difficult for a new management company to launch this mandate as a standalone product/fund. This explains the relative lack of competition and the relatively low AUM chasing this opportunity and alpha.

An investor needs to show a strong willingness to implement this strategy. One needs both the desire and ability to monetize this opportunity, and not many have both. A manager needs to have the proper risk appetite, as banks will not underwrite the risk. It's a complex, sophisticated strategy, so it's not for everybody. It's not scalable, so many on the asset management side will not venture into it.

How to manage the underlying risks of investing in a relative value derivatives portfolio

Managers in this space must deploy both an independent risk oversight in addition to position and portfolio risk management, to best address all the potential issues that exist with derivatives. Risk management needs to be a second line of defense against toxicity, unwanted risk, negative convexity and unwanted correlation.

Greeks (parameter sensitivities) are not a fair representation of the portfolio, as they are not homogenous, and even meaningless in as standalone measurements of risk. Greeks don't communicate P&L in a large regime change. Traditional risk analysis sees Greeks as outputs, whereas more sophisticated managers will use them as inputs to stress test the portfolio. Greeks are a mean, and not the end to portfolio construction.

Risks to consider are both idiosyncratic and systemic.

For idiosyncratic, these cross-sectional risk factors quantify the risks affecting a specific group of positions, to the exclusion of the others. There are 5 different ways to group positions to assess idiosyncratic risk: by corporate (issuer), by sector, by country, by region and by asset classes (rates, commodities, forex, credit & equities).

For systemic risks, these cross-sectional risk factors quantify the risks affecting the entire portfolio in a contagious way. There are 5 different sources of systemic risks: regulatory risk, liquidity risk, positioning risk, correlation risk, and market risk.

The risk management methodology needs a comprehensive and granular process starting with associating a scenario that shocks every parameter in a manner consistent with a stress coming from this risk factor. It should then run every sub-strategy through each scenario corresponding to the key risk factors, and simulate the P&L impact for each sub-strategy, strategy and for the entire portfolio.

Trade examples

- HSBC trades in both London and Hong Kong and whilst they are linked, the volatility of the two securities can at times really trade out of sync, and since derivatives on both markets are both active and liquid it is possible to establish arbitrage situations. This happens because these markets are segregated with different investors, with different flows and different dynamics. In Hong Kong, there is an abundance of structured products targeted at retail investors (warrants, accumulators, decumulators, CBBC). Despite the obvious relationship and arbitrage opportunity, few investors are set up or have the mandate to invest across markets, with the ability to isolate the dislocation in their portfolio.
- Share repurchase programs can be a good source of risk sharing situations. As an example, Apple initiated a large repurchase program and would have given this mandate to a large bank with a lot of leeway to improve execution. A typical example would be the instruction to buy 100 million shares in the next 3 months with certain additional specific constraints. In essence, this will give a lot of optionality to the bank that gets the mandate on AAPL stock. This can be transferred into owning a large long gamma position (that may be too large to hold for a single bank) and this will then be shared with one or two buy side close partners.
- In Hong Kong, corporations "optimize" the FX hedging of their cross border flows by selling volatility via "TARF" structures. This massive supply of volatility (Vega) on a pair that is pegged allows to buy volatility on the other side at levels that are extremely cheap, often below 1%. This would enable the buyer to set up a really convex pay off that will perform not only if the peg breaks, but also just if expectations around the peg change, and this for a very cheap cost of carry.

Conclusion

Investors in all asset classes are increasingly keen on speed of reaction, perhaps to compete with the robot investors. Their investment decisions rely increasingly more on a single source of information - the key performance indicator (KPI), which differs from company to company. A lot of investing is about sentiment. The human brain functions much quicker on sentiment.

The excellent book by Daniel Kahneman, "Thinking, Fast and Slow," brilliantly analyses how our brains are made to react quickly, and act quickly based on information that can be absorbed very quickly. Detailed analytics and statistics demand a very important effort. As a professor of psychology he described an individual named Steve, selected at random from a representative sample, to his students: "Steve is very shy and withdrawn, invariably helpful but with little interest in people or in the world of reality. A meek and tidy soul, he has a need for order and structure, and a passion for detail." He then asked his students whether Steve was more likely to be a librarian or a farmer. According to Kahneman, the vast majority of his students assumed Steve is a librarian. That answer is wrong, because it depends on occupational stereotypes while ignoring "equally relevant statistical considerations." The question is supposed to illustrate the shallowness of our

intuitions about probability. "Did it occur to you that there are more than 20 male farmers for each male librarian in the United States? Because there are so many more farmers, it is almost certain that more 'meek and tidy' souls will be found on tractors than at library information desks."

A derivatives investor should be armed with the most advanced quantitative and qualitative toolset, but in reality the opportunity set has attracted many investors that are equipped only for superficial analysis. Like the students of professor Kahneman, they will jump to quick conclusions, which could prove damaging over the long term. Their performance, not always very attractive, should not distract from the very important opportunity set that exists in derivatives investing. This is even truer now that the volatility regime seems to have shifted to a slightly higher regime, with increasing amounts of dislocations and opportunities.

In an ideal environment, a nimble manager with an institutional framework that has the ability to explore a large breadth of opportunities, understands flows, quantitative and fundamental analysis and knows how to aggregate complex instruments in the context of a portfolio can generate very differentiated and compelling returns.

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