3Q21

TOPICS OF INTEREST

Verus

Thinking differently

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Introduction:

Today's market environment appears to be an exceedingly challenging one to navigate, and investors are grappling with the question of how best to structure portfolios that not only meet their return targets, but provide impactful diversification and risk management. As interest rates have fallen to secular low levels, return expectations have compressed, and cross-asset correlations have climbed, investors have expanded their collective search for truly uncorrelated assets, which ideally might provide some yield.

In this Topic of Interest paper, we will assess a wide variety of less-conventional investment strategies in both mature and nascent marketplaces, and which may only appeal to a specific set of investors. Instead of analyzing these assets from Verus' preferred (carry, value, momentum) framework, this paper will suggest a different set of lenses. First, it will drill down to the fundamental reasons why people decide to buy or sell things in the first place. Next, it will identify a number of irregular, perhaps lower-capacity investment strategies, and attempt to group them based on shared and dissimilar characteristics. Finally, it will lay out some of the fundamental bets embedded in investing in each space, and therefore, what investing in each space might provide for a portfolio's return and risk expectations. The goal is not to produce a series of concrete capital market assumptions informed by fundamental return drivers and historical volatility and correlation metrics. Instead, this paper will aim to think differently about some of the less-charted parts of today's market landscape and suggest a roadmap.

The carrot and the stick

Back in the mid-1800s, a cartoon began to circulate which depicted a race between donkey riders, in which the winner was in his saddle, dangling a carrot (or turnip) in front of his steed, and the loser was hitting his donkey with blackthorn twigs to urge it forward. Since then, the phrase "carrot and stick" has been used to refer to the combination of reward and punishment used to induce a desired behavior. Said another way, people generally respond to incentives – whether they be positive or negative – and the decisions people make tend to be motivated either by seeking pleasure, or by avoiding pain or loss.

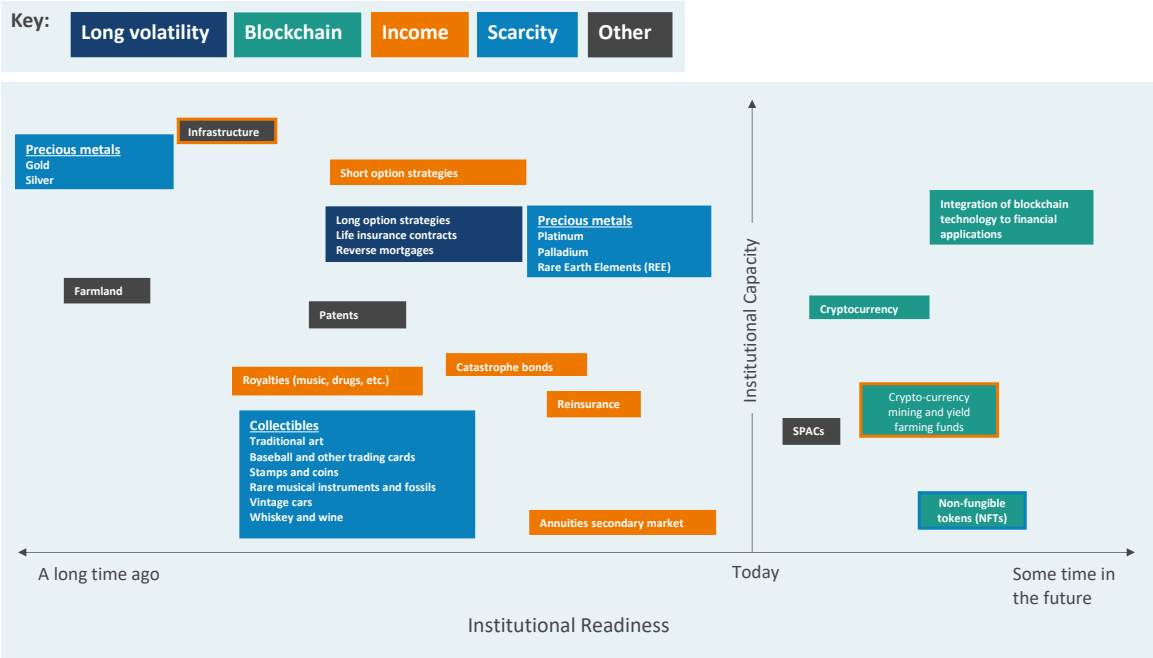
This motivational framework applies to nearly all facets of life, including how individuals and institutions approach constructing their portfolios. For example, one particular institutional investor with low short-term cash needs, a long investment horizon, and an ambitious return target may put together a portfolio comprised of entirely return-seeking assets, while another more concerned with capital preservation may pursue an asset allocation mix ensuring protection from large drawdowns or insulation from the erosive impact of inflation. Both strategies may be prudent given each of those investors' unique return objectives and risk constraints.

The choices people make tend to reflect their willingness (and hopefully ability) to take on specific forms of risk. Within portfolios, investors' appetite for investments which provide truly differentiated cash flows might find them wading into murkier waters. In the next section, this paper will parse into broad groups a series of investment strategies along the less-beaten path, and attempt to characterize these groups based on the qualities they may offer a broad portfolio, from return-enhancement to risk-control, and from more market-correlated to truly orthogonal.

Alternative investment roadmap

This paper will focus on alternative investments whose main characteristics fall into five broad categories: exposure to scarcity, exposure to income-generation, exposure to volatility, exposure to blockchain technology, and exposure to other idiosyncratic risks. Figure 1 below attempts to chart the alternative investments in each category according to their institutional viability, across the dimensions of maturity and capacity. Through the rest of the paper, we will examine the attributes which apply uniquely to each category in terms of approximate return characteristics, risk characteristics, and cross-asset correlations, generally moving from the top-left of the graphic (mature and large enough for institutional investors to consider) to the bottom right (not likely investible today, but important to be learning about nonetheless). In each section discussion, we will outline the distinctive properties associated with investment strategies in each space, dimension the perceived value proposition for investing, and discuss some of the more popular implementation approaches.

Figure 1:[1]



Scarcity

This first section will focus on a group of assets whose value is often associated with their scarcity (whether that scarcity is real or perceived), and within that group, two distinct categories of scarce assets: precious metals, which tend to be viewed in a more traditional investing context, and collectibles, which tend to be priced according to their intrinsic or perceived value.

Figure 2:

Precious metals	Collectibles
Gold	Traditional art
Silver	Baseball and other trading cards
Platinum	Stamps and coins
Palladium	Rare musical instruments
Rare Earth Elements (REE)[2]	Non-fungible tokens (NFTs)

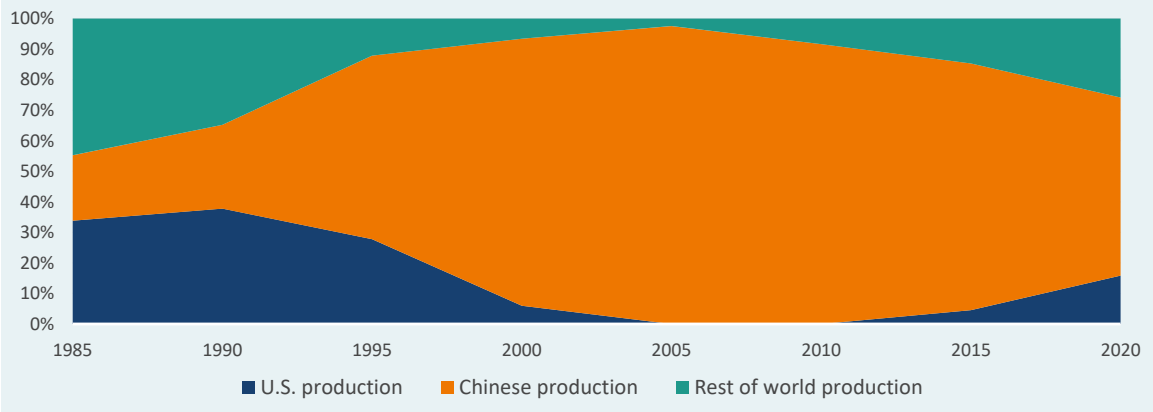
Precious metals

Compared to collectibles, precious metals, specifically gold and silver, are far-more accepted as a part of the investment landscape, and most investors with dedicated commodities allocations have exposure[3]. Gold has been used as a medium of exchange across the globe for

thousands of years, and in the past a wide range of countries have tied their currencies to the value of gold. Switzerland, the last major country to tie its currency to the value of gold, backed around 40% of outstanding Swiss francs with gold as recently as 1999 before joining the International Monetary Fund. Today, gold is viewed largely as a zero-carry asset which may provide some inflation and tail-risk hedging properties. In recent years as interest rates have fallen below zero in real terms, some investors have become more enthusiastic about gold, as the opportunity cost of holding a zero-yielding asset has been reduced. Other investors have built positions in gold due to concerns over the potential impact of extensive quantitative easing from global central banks. Emerging market central banks have also built up their gold reserves, which many analysts have viewed as attempts to diversify foreign reserve assets away from the U.S. dollar.

Aside from gold and silver, investment interest in other rare earths has grown in the past several decades due to their importance within the electronics and defense industries. Rare-earth elements (REE) are critical inputs for thousands of products, from smartphones, computer hard drives, lithium batteries and electric vehicles, to radar and sonar systems. For these elements, such as lanthanum (La) and Cerium (Ce), rarity is not necessarily a result of low global mineral deposits, but rather a result of those deposits not often being found in high concentrations (making extraction costly) and because the elements are generally mixed together or with radioactive elements (making refinement costly). Since the early 1990s, China has grown to dominate the production of these rare earths, and the Chinese government has begun to limit the amount of REEs that it allows to be produced and exported, supporting prices. Ongoing tensions between the U.S. and China have shone the spotlight on the fact that the global rare earths markets are heavily dependent on China, though recent increases in production in the United States, Myanmar, Australia, Madagascar, and several other countries has loosened China's grip on the market.

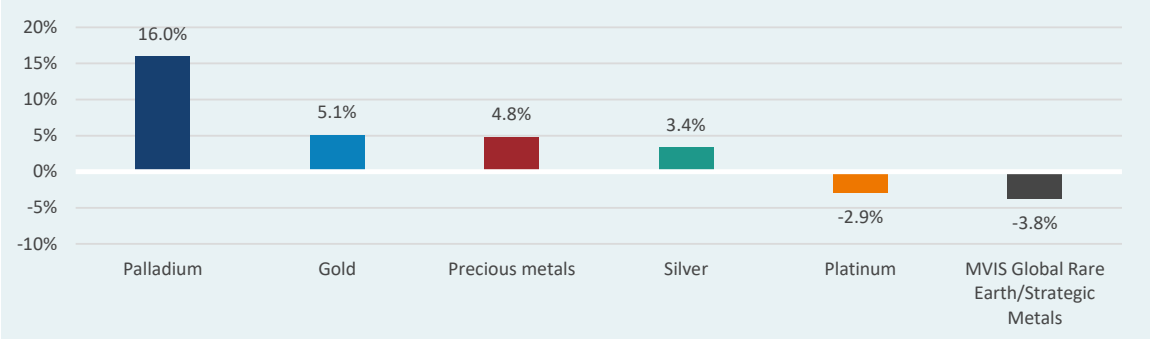
Figure 3: SHARE OF GLOBAL RARE EARTHS PRODUCTION



Source: Elements Newsletter, as of 3/30/21

Most investors interested in the precious metals space are attracted by the capacity of gold specifically to provide downside protection in turbulent markets, some degree of inflation protection, and in certain cases, shelter from the erosion in value of fiat currencies through time. Gold is generally viewed as a very expensive way to acquire downside protection, relative to say, U.S. Treasuries, although today's lower yield environment may impact that calculus on the margin, and due to their fixed-USD-denominated coupons Treasuries are not a strong inflation hedge. Relative to rare earths and strategic metals however, gold has posted relatively strong performance: since the end of 2007, gold has generated an annualized return of +5.1%, significantly outpacing rare earths and strategic metals (-3.8%). Only palladium (+16.0%), which is both a key input for pollution control systems in vehicles, and a metal in which supply has failed to meet demand in each of the last ten years, has beaten gold over that time.

Figure 4: ANNUALIZED RETURN SINCE 12/31/2007



Source: Bloomberg, MV Index Solutions, as of 3/31/21, Precious Metals includes gold and silver.

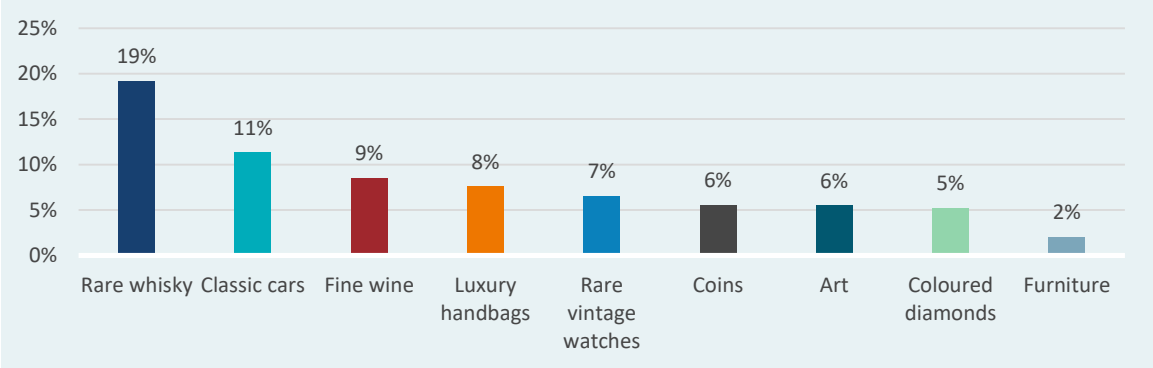
Overall, while interest in the rare earths space has picked up in recent years, this is more likely to be driven by geopolitical concerns and the dominance of a few players within the global supply chain, and to a lesser extent by the degree to which these metals may become crucial inputs in new-age technology. If the goal is to hedge downside and inflation risk, gold may offer less costly protection than rare earths (which would represent a more tactical bet given supply-demand dynamics), and there may still be more attractive insurance policies within other asset classes. Next up, collectibles.

Collectibles

In the collectibles space, buyers are typically driven to make purchases either because they believe that the asset they are buying will appreciate in value over time, or because they have associated the asset in question with some degree of sentimental value. Collectibles tend to be characterized by actual scarcity (as opposed to scarcity driven by the logistical challenges of extraction and refinement), and as a result, ensuring they remain in mint condition is imperative to preserving their value through time. Depending on the nature of the asset, this maintenance can be prohibitively expensive. For example, storing a medium-sized Basquiat

painting in the Geneva Freeport[4], an art storage complex in Switzerland, would cost roughly $1,000 per month. Storage costs for the world's most expensive paintings are relatively low - Basquiat's highest-priced painting, *Untitled*, sold for $110.5 million back in 2017, and paying $12,000 per year in storage costs would equate to a one basis point carry cost per year. However, most auction sales occur at much lower price points, and for a million-dollar painting, $12,000 in annual storage costs would represent a 1.2% annual charge. Aside from these maintenance costs, buyers need also to contend with dealer mark-ups in the acquisition process, insurance costs, counterfeit risk, and the risk that the asset's appeal today may not withstand the sands of time. All this considered, it might be helpful to view collectibles as assets which have an embedded negative exposure to volatility[5], and which are associated with negative carry. Some collectibles have delivered attractive returns over the last ten years, though of course past performance should not be considered indicative of future results.

Figure 5: 10-YEAR ANNUALIZED RETURNS



Source: Knight Frank Wealth Report, March 2021, data as of Q4 2020 except for furniture (Q2 2020)

The T206 Honus Wagner, which has been dubbed the Mona Lisa of baseball cards, was originally listed at $50 in Jefferson Burdick's *The American Card Catalog* back in 1933, and later sold for $2.8 million in 2007. Obviously, Honus Wagner-esqe returns are located in the far-right tail of the probability distribution, and assuming no sentimental basis underpinned her investment, the investor must expect that the price appreciation of her collectible over time will at least pay for the negative carry associated with the investment (insurance, storage), as well as compensate for the risk that an unforeseen event impairs or destroys the fair value of that asset. Should an investor decide to allocate to collectibles, there remain significant barriers to entry. Due to the nature of the markets (being fragmented by asset type), institutional capacity is constrained, and most transactions take place through direct communications with dealers, or through centralized auction houses. Both routes typically involve significant mark-up costs. In recent years, several companies have worked on democratizing access to certain collectible markets (for example Masterworks in the art space) by constructing artwork portfolios, securitizing those portfolios, and selling the created shares to retail investors. While these types of vehicles do provide access for certain

investors, that access tends to be expensive. Masterworks most recently charged a 1.5% and 20% fee structure[6], and when paintings are sold, there are commissions (which have been around 5% on average) and performance fees which further erode the investor's total return.

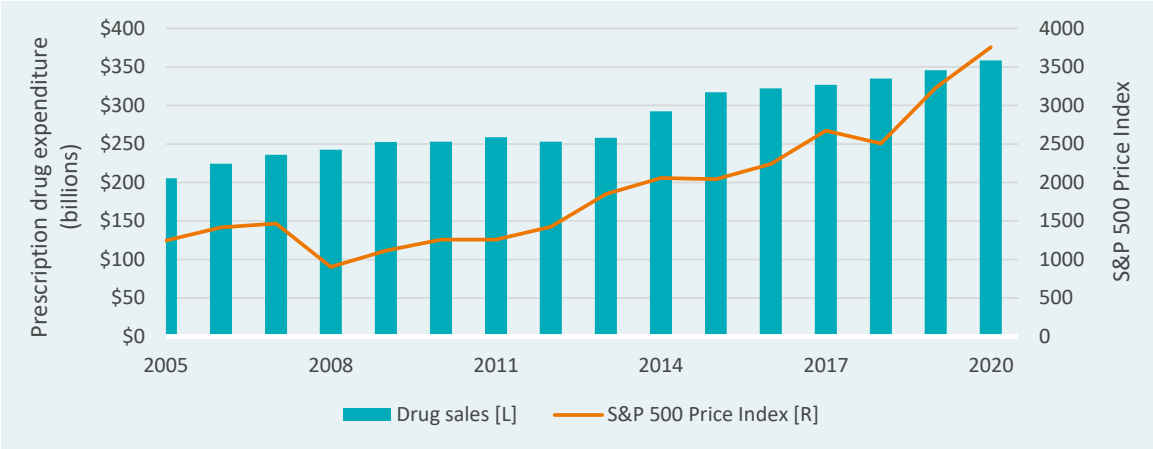
Investors should understand that while collectibles can offer appealing returns over time, they should be viewed as illiquid, taxable, negative-yielding (accounting for inflation, storage costs, and insurance premia), assets which face event risk which is likely skewed to the downside. In light of these risks, we believe there are far more compelling opportunities for investors, in particular institutional investors for whom the relatively small size of the addressable opportunity set will generally pose a challenge.

The first few sections focused on assets typified by scarcity, which investors tend to buy either for protection (from downside or inflation), or for intrinsic reasons. These assets tend to be costly in that they often require storage costs, offer no yield, and depending on the liquidity of the market, prevent the investor from being able to quickly sell their exposures to take advantage of perceived opportunities. In the next section, we will shift gears and focus on strategies which provide income.

Income-generating and negative carry strategies

Given the secular decline in interest rates since the 1980s, finding adequate total return within the fixed income universe has become a more arduous task, and some investors have pivoted to structured and private credit alternatives[7], which have historically demonstrated the ability to generate yield premia over traditional fixed income assets. Within structured credit, royalty strategies (ranging in focus from music, to medical devices, to new drugs) have become increasingly popular, as they have tended to exhibit lower levels of correlation with the broad equity market.

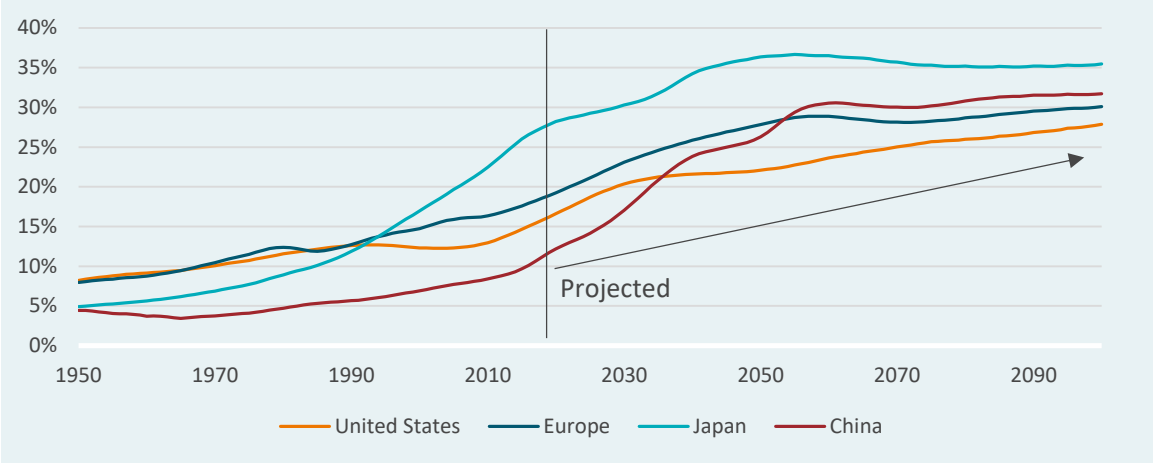
Figure 6:



Source: Centers for Medicare & Medicaid Services (Office of the Actuary), as of 4/30/2020

In the pharmaceutical space, entities which focus on inventing new drugs typically lack the resources to produce and distribute the drugs they invent at scale, encouraging them to enter licensing agreements in which they sell their intellectual property in exchange for an ownership stake in the future payouts. For example, a small company might prefer to receive a large one-time payment in exchange for the right to produce and distribute a highly efficacious vaccine as opposed to being forced to vertically integrate a supply chain and build a recurring payment stream. Because of the relatively significant barriers to entry (institutional investment managers need not only financial, but also scientific expertise to make informed deals), a relatively small number of experienced institutional managers engage in the space, resulting in healthcare royalties which have historically exhibited a significant yield premium over traditional fixed income. Generally, managers in the space have aimed to price their transactions with the goal of generating returns north of 10% but south of 15%, materially above the yield offered by traditional government fixed income securities. Additionally, typical transactions include warrants which allow investors in the royalties to participate in the upside, should the underlying drug exhibit potential for material growth. On the risk side, patent laws (the typical patent has a 20-year duration) limit the potential for other products to come to market and capture market share from the protected drug. Demographics also provide a compelling insulation property – as the global population has aged, government and household spending on healthcare has been increasing, and is expected to continue to rise for the foreseeable future.

Figure 7: SHARE OF POPULATION AGED 65+ (PROJECTED OUT TO 2100)



Source: Our World in Data

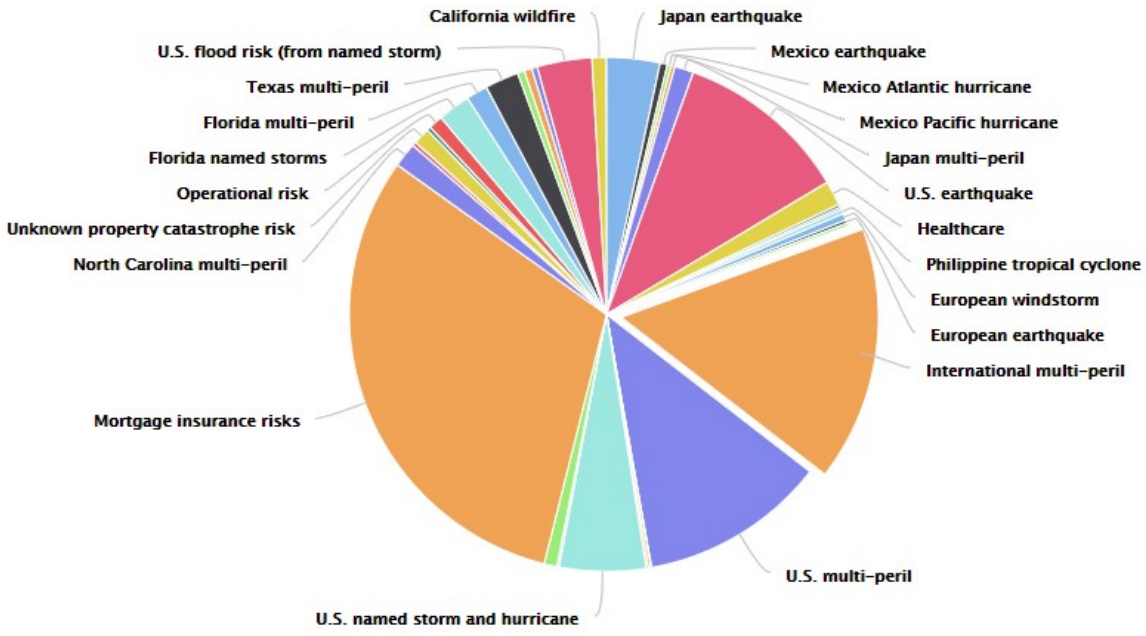
Aside from structured credit, but also under the income-generating strategies umbrella, are insurance-linked securities, which we consider a sub-strategy type within the broader absolute return[8] universe. The properties investors tend to appreciate about insurance-linked securities ("ILS" or reinsurance) are their detachment from traditional sources of risk and return (capital market and governmental forces), which make allocations in the space truly

orthogonal to the typical capital market sensitive portfolio[9]. Mitigating this diversification benefit however, is the fact that investing in ILS typically exposes the investor to the risk of infrequent yet severe downside events over a long-term cycle, meaning timing is important, and proper execution of the strategy can be challenging. Below, we will discuss one such strategy within the space: catastrophe bond investing.

Catastrophe bonds are typically issued by insurance firms seeking to transfer risks related primarily to the impact of natural disasters (tornados, earthquakes, etc.), to other investors, in exchange for a premium. Should a disaster meeting a specified set of criteria occur, the catastrophe bonds will pay the issuer to help cover insured losses. Since its birth in 1997, the catastrophe bond market has grown to a size of roughly $50 billion in terms of outstanding capital, with around $16 billion in securities being issued in 2020, split across property, life, specialty, and other transaction types. Due to the size of the market, and the fact that insurers tend to take on counterparty risk selectively, the strategy tends to be more relationship-driven, lower-capacity, and difficult to execute.

From the investor's perspective, catastrophe bond investing represents the traditional carry trade, given the limited upside potential assuming no disaster occurs triggering a return of capital to the issuer, and the potential for significant downside should that disaster occur. In Figure 8 below, the catastrophe bond and insurance-linked securities market is broken out by capital exposed to specific sources of peril (or catastrophe).

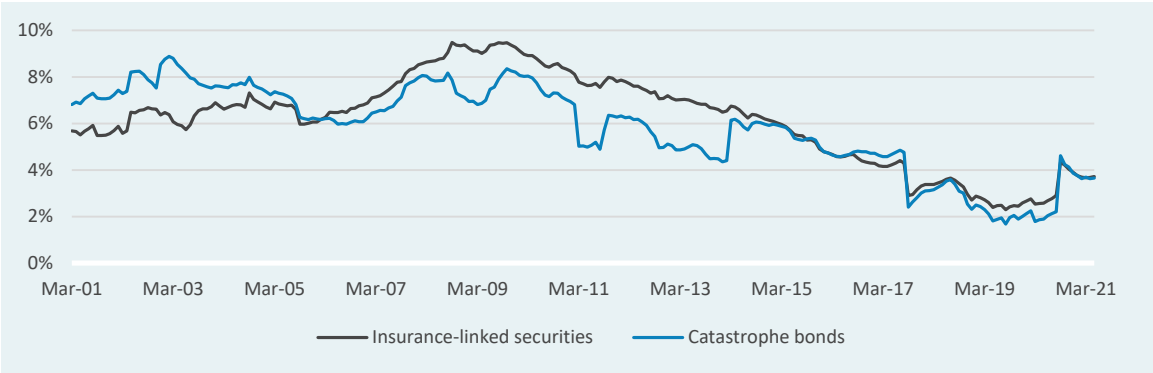
Figure 8:



Source: www.artemis.bm, as of 6/29/21

Historically, insurance-linked security and catastrophe bond funds have targeted a net return of between five and seven percent, but as pictured in Figure 9 below, since the post-Hurricane Katrina surge, annualized returns have trended lower, due in part to increasing expected loss profiles, significant capital inflows, and a secular decline in interest rates.

Figure 9: THREE-YEAR ROLLING ANNUALIZED RETURNS



Source: MPI, as of 5/31/21

From a total portfolio perspective, we maintain a constructive view on the capacity of insurance-linked securities broadly and catastrophe bonds specifically to provide income exceeding that of nominal Treasury bonds in most periods, and to provide diversification relative to both capital markets generally as well as the universe of absolute return strategies. The relatively small universe of funds in the space and the idiosyncratic deal structuring process leaves investors with a smaller opportunity set, making implementation more difficult, and the risk of severe drawdowns, while small, is significant and should be considered thoroughly by the prospective investor.

Some investors have made the crude analogy that investing in short-volatility, income-generating strategies is similar in terms of return and risk exposure to picking up pennies in front of a steamroller. Most of the time, you make a small amount of money, but sometimes, you can lose big. Now we shift focus to the person driving the steamroller, whose risk and return profile is the opposite – most of the time they lose small[10], but sometimes, they can win big. Perhaps the purest form of this strategy would be simply buying put options on the broad market, hoping that the market sells off. In this paper however, we will consider the viability of the secondary market for life insurance.

In the primary life insurance market, the buyers are typically the policyholders as well as the insured person, while the insurance companies are the sellers of those policies. The contracts are generally structured such that the policyholder pays monthly premia in exchange for some payout conditional on their death. In the secondary market however, the buyer of the policy can sell their coverage and responsibility for payments to a third-party investor. Why might a policyholder consider selling their policy?

1. Selling on the secondary market will likely allow the holder to generate a cash receipt exceeding that which they would receive by simply surrendering the policy to the original insurer.

2. If the policyholder desires shorter-term liquidity, selling the policy would provide both a large up-front cash payment, as well as the elimination of recurring insurance premium payments.

3. Life insurance contracts are viewed as long-term assets, and an 85-year-old person who purchased her policy 15 years ago may not need as much protection today, as compared to at the time of policy origination. For this investor, life insurance restructuring may be prudent.

The third-party buyer in the life insurance secondaries market is essentially betting that the present value of the eventual payouts from the policies upon the deaths of the insured will exceed the price paid for the policy, as well as the present value of all future insurance payments. Longevity is the key risk for institutional investors because if the person insured under the policy ends up living longer than the age implied by the pricing of the contract, the investor will have to continue paying insurance premia until the death benefit is paid when the insured passes. Institutional investors have attempted to mitigate this risk through extremely rigorous policy selection processes. Historically, managers in the space have targeted returns of around seven percent per year, but arguably the most compelling attribute of the investment strategy is its fundamental lack of correlation to broader market betas. Before dipping a toe in these waters however, the institutional investor should assess their pre-existing exposure to longevity risk to ensure that an additional explicit allocation to that risk factor makes sense[11]. Additionally, institutional capacity has proven relatively limited historically, which has made allocating within the space more challenging. According to Jonas Martenson at the Stockholm-based fund manager Resscapital AB, the secondary market for life insurance is estimated to have an annual value of policies sold between $4 to $5 billion, which is just a drop in the ocean relative to the total market size of outstanding life insurance, which stands above $20 trillion globally.

Overall, while it appears reasonable that skilled managers may be able to generate attractive risk-adjusted returns net of fees which are uncorrelated to market factors, there remain several important deterrents. First, investors with embedded exposures to longevity risk (such as a defined benefit plan sponsor) may be apprehensive about adding further longevity risk exposure. Second, capacity may be prohibitively low for larger institutional investors. Gradual growth in the size of the secondary market for life insurance may allow for this space to mature within the institutional landscape over time.

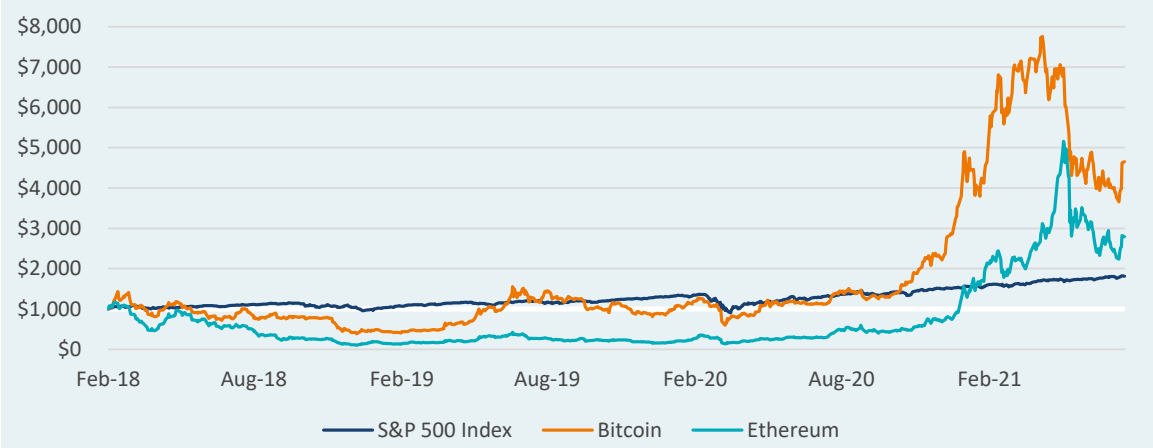
Blockchain

A new technology has recently entered the mainstream, and excitement around its potential to transform the global economy has fueled rampant speculation in a wide range of assets,

including one whose mascot is a dog. The date is February 10th, 2000, and Pets.com just went public under the NASDAQ stock symbol IPET. Opening at $11.00 per share, Pets.com commanded a market capitalization of over $300 million despite managing to bring in just $619,000 in sales. One year later, the company was liquidated. Twenty years later, enter dogecoin, a cryptocurrency made as a joke and reportedly "favored by Shiba Inus worldwide". Dogecoin rose from a market capitalization of $622 million at the end of 2020 to as high as $94 billion by the beginning of May 2021, or roughly the size[12] of Starbucks and Citigroup.

For those intrigued by the crypto-currency space, the dot-com bubble is of course the easy comparison. Back then, investors who were optimistic about how the internet could revolutionize business combined with investors who were scared of missing the next big thing, and bid up any stock with an i- or e- prefix or a .com suffix. Both crowds had a hunch that the internet would be world-changing, and without an understanding of how best to implement that view, they reached out to invest in the most accessible vehicles.

Figure 10: GROWTH OF $1000



Source: Bloomberg, as of 7/26/21

Today, most investors in the cryptocurrency space are expressing their bullish view on cryptocurrency by buying Bitcoin and Ethereum – the cryptocurrencies which have established the largest brands - through Coinbase[13]. Proponents of investing in these two coins might point to the Lindy effect, which posits that the future life expectancy of non-perishable things (like technology or an idea) is proportional to their current age. Bitcoin and Ethereum have been in the public zeitgeist the longest, therefore they should be expected to remain relevant for a longer time from today. They might also argue that establishing long positions in those two coins might put you in a position to front-run continued retail flows into the space. This thesis is predicated on the view that most investors in cryptocurrency are likely to gravitate toward Bitcoin and Ethereum rather than Cardano and Litecoin. The goal of this paper is not to comment on the merits of those arguments, but rather to provide some thoughts on the potential value of the technology underpinning the speculative fervor, and then to outline some of the risks overhanging the broad cryptocurrency space.

Reasons to be bullish on the cryptocurrency and blockchain space:

1. **Cryptocurrencies allows for decentralized storing[14] and transferring of value over the internet**

    a. Currencies are provably fair (in that anyone can audit their entire history), secure, globally accessible, and decentralized.

    b. In some countries, national currencies are battered by high inflation rates. Adoption of cryptocurrency may allow citizens of these countries to broaden their access to capital markets and make it easier for them to preserve their purchasing power.

2. **The value in blockchain technology is independent from the value of crypto assets as currency, because it allows for greater integration of the properties people appreciate about cryptocurrencies, into broader financial applications**

    Smart contracts, which were first introduced on the Ethereum blockchain and are essentially programs or code running on top of that blockchain, allow for cost-saving automation of a wide range of financial relationships.

    a. For example, instead of needing to go to a bank to secure a home loan, someone may be able to use a smart contract to access that capital, conditional on their credit score or some other criterion or set of criteria meeting a defined expectation. The smart contract running on the blockchain will then execute or not execute, depending on whether criteria are met.

    b. Just as each node (participant) in the Bitcoin blockchain verifies transactions, each node on the Ethereum (or smart-contract enabled) blockchain will verify the execution of smart contracts on that particular blockchain.

    c. Therefore, decentralized finance (DeFi) eliminates the need for trusted financial intermediaries (banks) because it can provide a Turing-complete[15] ledger which is publicly available, and not proprietary information internal to a particular intermediary.

    d. Smart contracts on a blockchain could also potentially expand the flexibility and precision of monetary policy. While only about a third of most stimulus checks sent out during the pandemic were actually used to buy goods or services (the remainder being saved, used to pay down debt, or invested), a central bank could theoretically integrate parameters through smart contracts specifying who receives transfer payments, what those funds can be spent on, and time windows during which recipients of funds must spend those funds.

3. **Innovation in market functioning**

    a. Decentralized exchanges (DEXs) function as Automated Market Makers (AMMs) which allow participants to trade cryptocurrencies within pre-funded pairwise liquidity pools (for example, an Ethereum-Bitcoin pool), as opposed to through a traditional order book (which would operate based on bids and asks).

    b. The decentralized nature of DEXs essentially allows for individuals to stake (meaning to deposit as collateral) their own tokens (or cryptocurrencies) in certain pools, thereby providing liquidity to that market. Market-makers (liquidity providers) are then compensated through trading fees within the pool which are distributed based on each individual's contribution to the total liquidity being provided within the pool.

    c. The fragmentation of the liquidity providers across the chain distributes risk in periods of market stress, and could allow for more fluid market functioning. In periods of market turbulence (take for example, the Gamestop short squeeze), traditional brokers often need to halt trading or implement other system delays. With decentralized protocols, market functioning could prove more insulated from broad market volatility, reducing the risk to the consumer that they will be unable to trade (and either incur losses or miss out on expected gains) when markets are stressed.

    d. Blockchain technology could allow for same-day settlement[16], eliminating the gap between trade and settlement dates which would increase transparency around capital ownership, and reduce unnecessary transfer delays and other costs.

    e. According to Case Study 7 in a 2016 Goldman Sachs report titled *Profiles in Innovation: Blockchain*, integration of blockchain technology to KYC and AML efforts[17] could improve data transparency and security, and introduce $160 million in cost savings.

Reasons to be skeptical about the cryptocurrency and blockchain space:

1. **The cryptocurrency space lacks a well-defined regulatory perimeter**

    a. Governments are unlikely to cede monopolistic control over their money supplies

        i. According to a recent report from the Bank for International Settlements, central banks representing 20% of the global population will be developing their own central bank digital currencies (CBDCs) over the next three years.

ii. China is already testing the functionality of their own digital yuan in Hainan Province, and later this month, the U.S. Federal Reserve is planning to publish a discussion paper on the benefits and costs of creating a central bank digital currency[18].

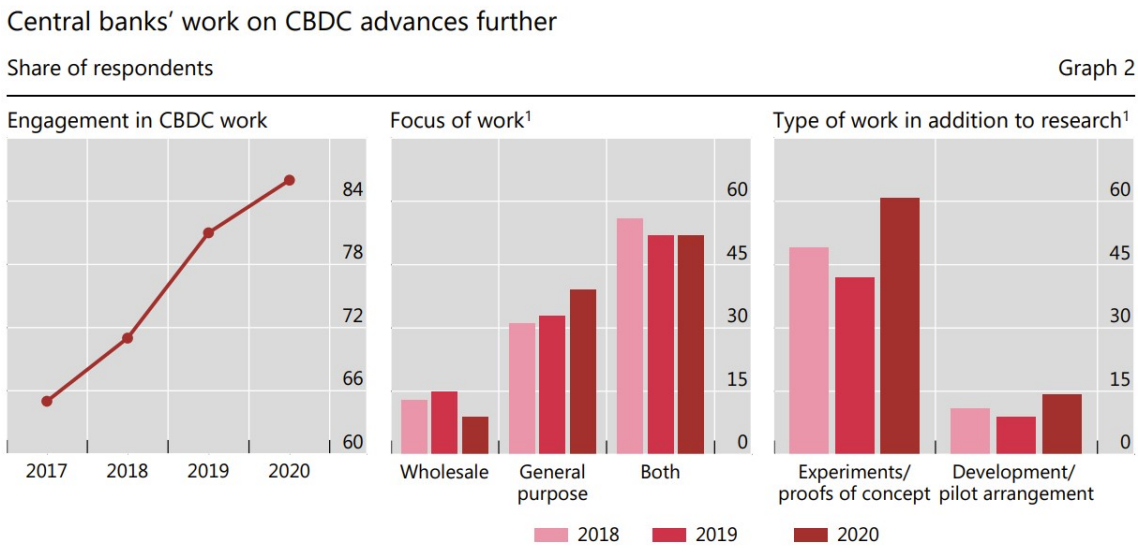
b. The tax implications of owning specific cryptocurrencies, as well as transacting between them, remain uncertain

i. In the most extreme case, the U.S. government could ban transacting in any cryptocurrency which it does not sponsor, perhaps citing the fact that it may enable certain nefarious business dealings.

ii. In a less extreme but still significant case, transactions made between tokens on exchange protocols could be considered taxable events, and cost-prohibitive taxes could be levied on short- or long-term crypto transactions.

iii. The U.S. could attempt to set up a tax mechanism which would force payment for maintenance or "gas" costs on a specific blockchain to be payable in dollars.

Figure 11:[19]



Source: BIS, as of January 2021

Taken as a whole, the opportunities available within the blockchain technology space are interesting for institutional investors, but not yet ready for full participation for most. Many investors will have some exposure already, with small allocations to crypto-related investments included in hedge funds. A small number of others may already have taken the

plunge and directly allocated assets to the space. For most institutional investors, however, the day of explicit exposure to cryptocurrency is still some way off, with continuing infrastructure, legal and regulatory work still needing to be done and with greater familiarity needing to be established. The probability that this does eventually work its way onto the institutional agenda is likely higher today than it was four years ago, but the day of widespread adoption is still probably some way off.

Other strategies

This last section will be focused on Special Purpose Acquisition Companies (SPACs) which have proliferated substantially over the last year as a result of pandemic-related market volatility, increased risks related to traditional initial public offerings (IPOs), and record retail trading volume.

Figure 12: U.S. SPAC AMOUNT RAISED (BILLIONS)

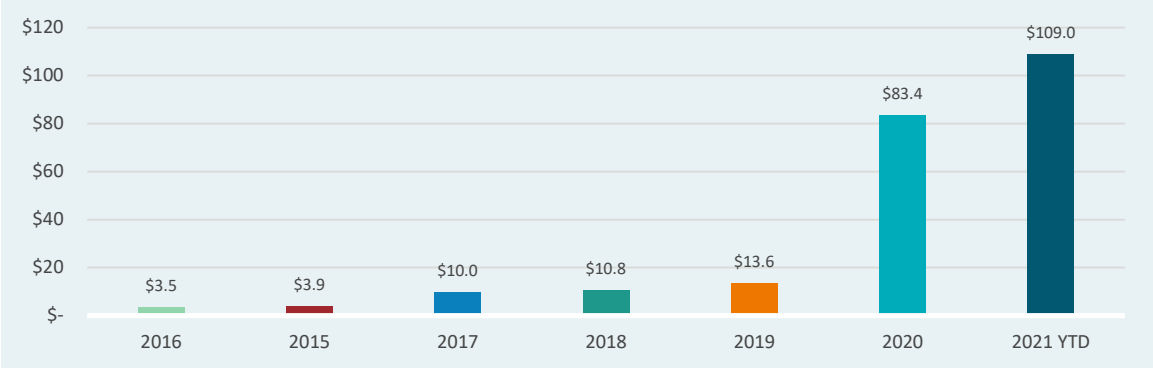
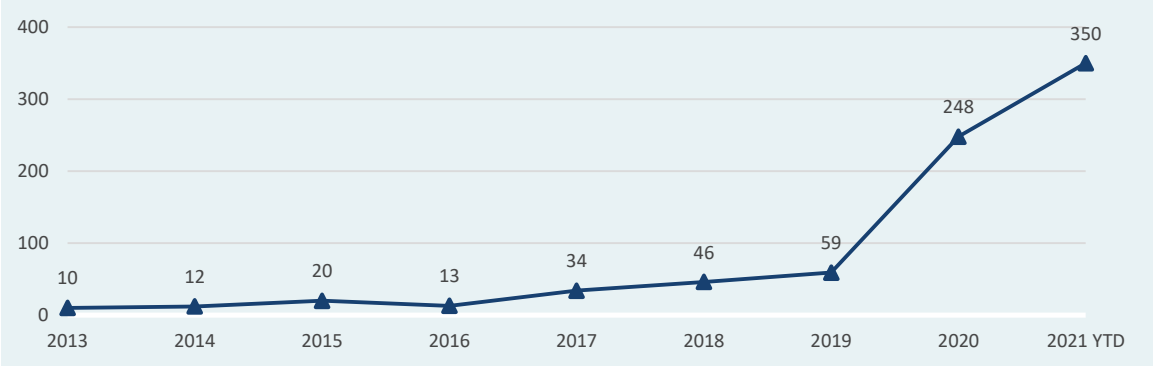


Figure 13: NUMBER OF SPAC IPOs



Source: Verus Private Markets Team, SPAC Research, as of 6/29/21

Essentially, SPACs are "blank check" companies which are formed expressly to acquire late-stage private companies, allowing for the target private company to become publicly

listed more quickly, and avoiding some of the obstacles associated with the traditional IPO process. Although SPACs have been around for close to 30 years, their reputation and legitimacy have been stained by the perception that they represent the "back-door" for taking a company public. However, as more notable investors have entered the space, this reputation has improved on the margin, and could continue to improve.

Looking ahead, it appears likely that the increasing popularity of SPACs will continue to disrupt a wide range of asset classes in the private markets, and those disruptions will be important to watch. Listed below are several ways in which SPACs could potentially transform the investment landscape.

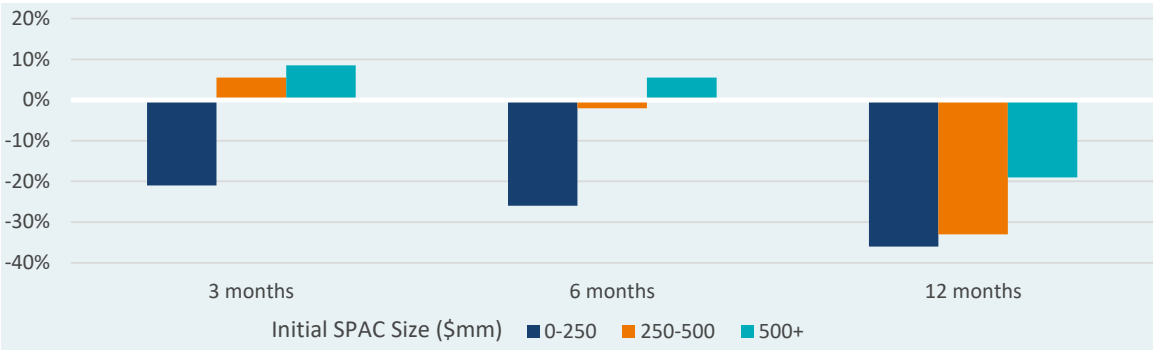
1. In venture capital and leveraged buyouts, the SPAC could serve as a new potential **exit channel** for companies that pre-empts a traditional IPO, generating earlier liquidity for GPs and LPs[20].

2. SPACs have become a **deal source** for private markets and hedge fund managers to invest in through a PIPE[21].

3. In SPACs, milestone-based compensation for the management team is more acceptable and normalized relative to a traditional IPO. This difference could potentially encourage better alignment of incentives and interests between the portfolio companies and the general partner.

On balance, we do not currently view the SPAC market as an attractive opportunity for institutional investors as a specific stand-alone allocation. As shown in Figure 14 below, SPACs have historically experienced significant volatility around a negative return level. While some larger SPACs over the last few years have managed to generate positive returns over the three- and six-month periods post-merger, the return experienced 12 months post-merger have been broadly negative regardless of deal size. It is worth noting in addition that there does not yet exist in the SPAC market a substantive, longer-term performance track record relative to the rather large recent cohort of SPACs – we will continue to monitor developments in the space.

Figure 14:



Source: Verus Private Markets Team, GS Global Investment Research, Dealogic, UBS, as of 7/30/20

Conclusion

In this paper, we have discussed several esoteric investment strategies, which investors may be considering given today's challenging market environment, and which vary greatly in terms of their institutional viability, and unique return, risk, and correlation properties. These spaces are moving quickly and will likely look much different a few years down the road – we will do our best to follow those developments. If you have any further questions, please reach out to your Verus consultant.

Notes & Disclosures

1 *Some investment strategies pictured below, such as non-fungible tokens, fall into several categories. For these strategies, text color and box color are not the same, reflecting the fact that the strategy has characteristics that fall into multiple strategy buckets (for example, blockchain, as well as income, for non-fungible tokens).*

2 *Rare earth elements are a set of seventeen metallic elements (fifteen lanthanides on the periodic table, plus scandium and yttrium) which have become increasingly important components in many high-tech devices.*

3 *In 2021, the Bloomberg Commodity Index targeted a 14.6% exposure to gold, and a 4.4% exposure to silver.*

4 *The Geneva Freeport has been described as the "greatest art collection that no-one can see" and safeguards with prison-like security an art collection which includes about 1,000 Picassos and is worth roughly $100 billion.*

5 *Meaning that their value is negatively correlated with an unexpected change in the status quo, whether that change manifests itself through a storage facility burning down, the realization that the asset which was purchased is counterfeit, or through the deterioration of the appeal of the asset over time. Of course, there is also the possibility that the asset's appeal could grow with time, so the impact of volatility on that vector is less certain.*

6 *Meaning a 1.5% annual management fee and 20% of any profits.*

7 *Structured credit refers broadly to bonds or loans which are linked to cash-flow-generating assets.*

8 *Absolute return strategies endeavor to produce consistent returns uncorrelated to traditional market beta risks.*

9 *Some might argue that some extreme tail risk exists. The Tohoku and Fukushima earthquakes which hit Japan in March and April of 2011 sparked an equity market selloff which reached -20.2% by the end of the year.*

10 *The steamroller operator pays for the fuel to keep steamrolling, while the investor may pay a premium over time to maintain downside protection, through for example, a put option, or for upside participation, perhaps a life insurance contract purchased on the secondary market.*

11 *Consider an investor whose portfolio is comprised of a 50% allocation to tobacco companies and a 50% allocation to life insurance companies. For this investor, the decision to sell some tobacco company stock to buy life insurance policies on the secondary market would result in a less-balanced exposure to longevity risk.*

12 *By size here I mean the number of outstanding coins multiplied by the market price of that coin.*

13 *The irony here is that while much of the supposed value proposition of blockchain technology and transacting in cryptocurrency is the decentralized structure provided, Coinbase utilizes a traditional brokerage model with a centralized order book.*

14 *Some might argue that crypto assets (with very high realized volatility) do not do a great job at this.*

15 *Most cryptocurrencies are built on cryptographic principles and utilize encryption techniques to ensure data protection. Ethereum is considered Turing-complete because the Ethereum Virtual Machine (EVM), the runtime environment for smart contracts in Ethereum, allows users to implement sophisticated logic (write programs or contracts) and can solve any reasonable computational problem (which a Turing machine would be able to solve).*

16 *As opposed to the current "t+1" or "t+2" standard operating procedure within the financial industry.*

17 *Know your customer, and anti-money laundering.*

18 *https://www.federalreserve.gov/newsevents/speech/waller20210805a.htm*

19 *https://www.bis.org/publ/bppdf/bispap114.pdf.*

20 *General partners and limited partners.*

21 *Private investment in public equity.*

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