Citi Global Wealth
Investments

WEALTH OUTLOOK 2023

Anticipating opportunities with alternative investments

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Overview

For risk assets, 2022 was a tumultuous period. Alternative investments were not spared, with private equity, real estate and hedge funds suffering negative returns. Macroeconomic uncertainty, inflation, rising interest rates, recession fears and volatile public equity and debt markets were among the challenges that unsettled these asset classes.

However, we believe that 2022's turmoil may lead to potential opportunities in alternatives over the coming 12 to 24 months and thereafter.

At an asset class level, the long-term outlook for private equity, real estate and hedge funds now looks much brighter than it did at the end of 2021. A more favorable valuation environment coupled with reduced competition from liquid sources of capital should create increased opportunities for alternative investment managers to shine in 2023 and beyond.

In the current environment, we believe private equity, real estate and hedge funds may play an even more important role for suitable investors who are seeking potential returns, yield enhancement, and diversification against risks including inflation.

All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

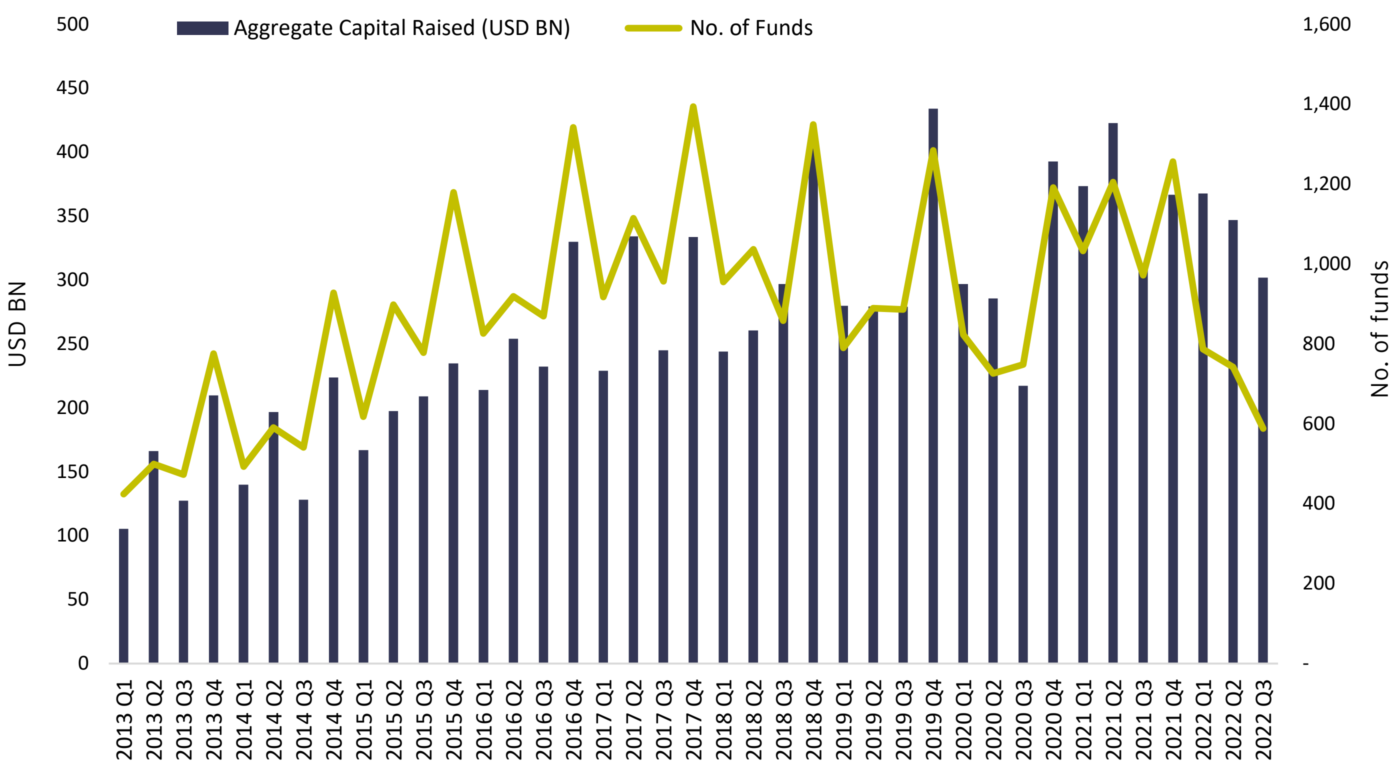
Alternative investment flows in 2022

While alternatives' overall performance may have suffered in 2022, alternative managers managed to attract substantial funds from investors, albeit slightly below 2021's peak levels. That said, the trend was downwards through the first three quarters of 2022. Many managers have told us investors appeared to pull back significantly in the third quarter. They also expected the fundraising slowdown to continue through the fourth quarter and into 2023 – FIGURE 1.

Such fundraising slowdowns often result from investors having become overexposed to illiquid holdings relative to suggested allocations. This happens because the valuations of their allocations to public market asset class investments have shrunk by more than privates during market selloffs.

Nevertheless, many investors keep allocating to alternatives during difficult times. They do so to seek exposure to investments from a range of different vintage years, rather than investing, say, only in the good times. Still, they tend to prefer high quality managers amid turbulence, and such managers thus see more resilient inflows in periods like today's.

FIGURE 1 | PRIVATE CAPITAL FUNDRAISING WORLDWIDE

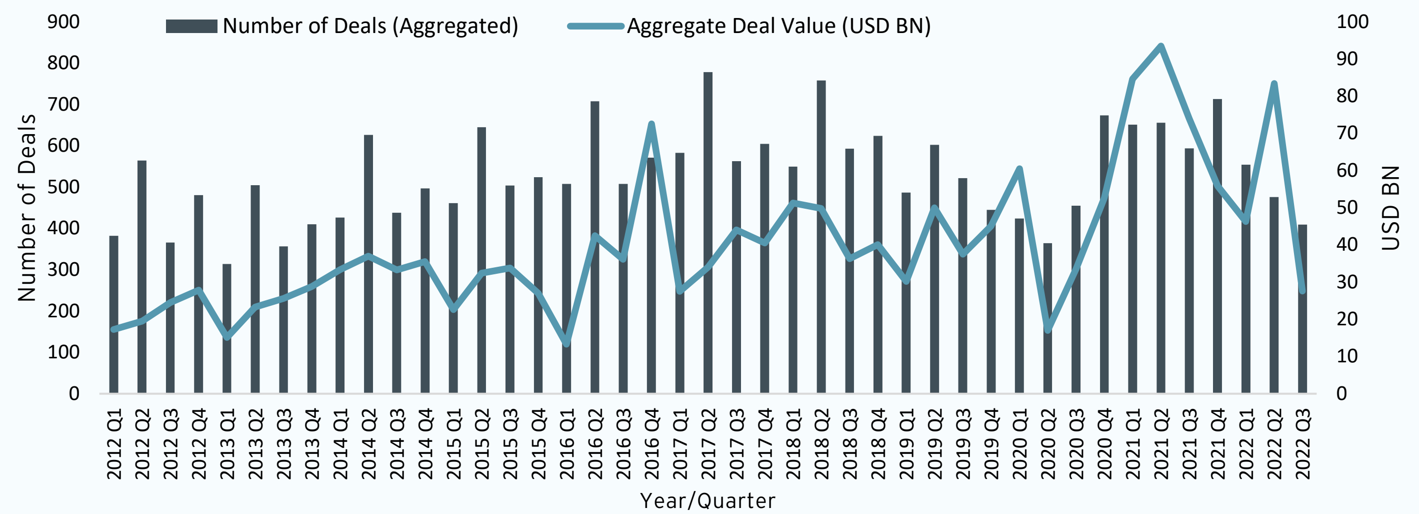


Source: Preqin as of September 30, 2022

Private equity

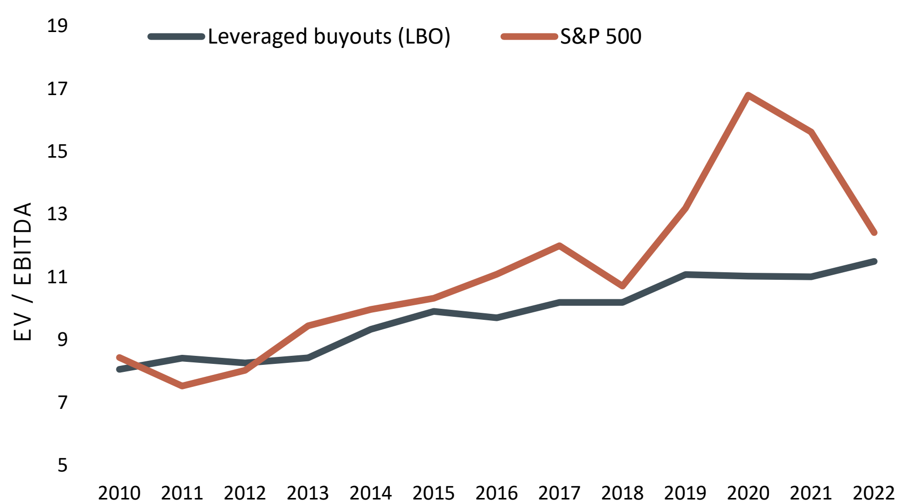
Having reached a peak in 2021, the number of new buyout deals slowed in 2022 – FIGURE 2. This reflects both buyers and sellers adjusting to new pricing and leverage dynamics. Valuations for target companies are expected to fall as a result, due to higher interest rates, which reduce the present value of future cash flows. Also, higher rates mean it is more expensive to borrow, as buyout deals rely heavily on debt. The leveraged loan market – which buyout managers use extensively to raise debt – was effectively shut off in the third quarter of 2022.[1] As buyers and sellers work through new price discovery, we believe buyout managers may be able to enter deals at more attractive levels.

FIGURE 2 | THE DOWNTURN IN BUYOUT DEAL NUMBERS AND VALUE IN 2022



Source: Preqin as of September 30, 2022; Chart shows the number of buyout deals done per quarter over the last ten years and the aggregate deal value in billions of US dollars.

FIGURE 3 | WHERE PUBLIC MARKET VALUATIONS GO, LBO VALUATIONS MAY FOLLOW



Source: S&P Leveraged Commentary and Data, Morningstar as presented in Pitchbook/Morningstar Q4 2022 Quantitative Perspectives, as of September 30, 2022. LBO Multiples use purchase price in the numerator. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Past performance is no guarantee of future results. Real results may vary.

Buyout pricing remained similar to prior years through the first three quarters of 2022 at around 11 times trailing earnings before interest tax depreciation and amortization (EBITDA). By contrast, public equities saw a return toward long-term mean valuations – FIGURE 3. This typically heralds regression in private markets. The cost of leverage has also been modest until very recently, enabling buyout managers to do deals comfortably at prevailing higher valuations.

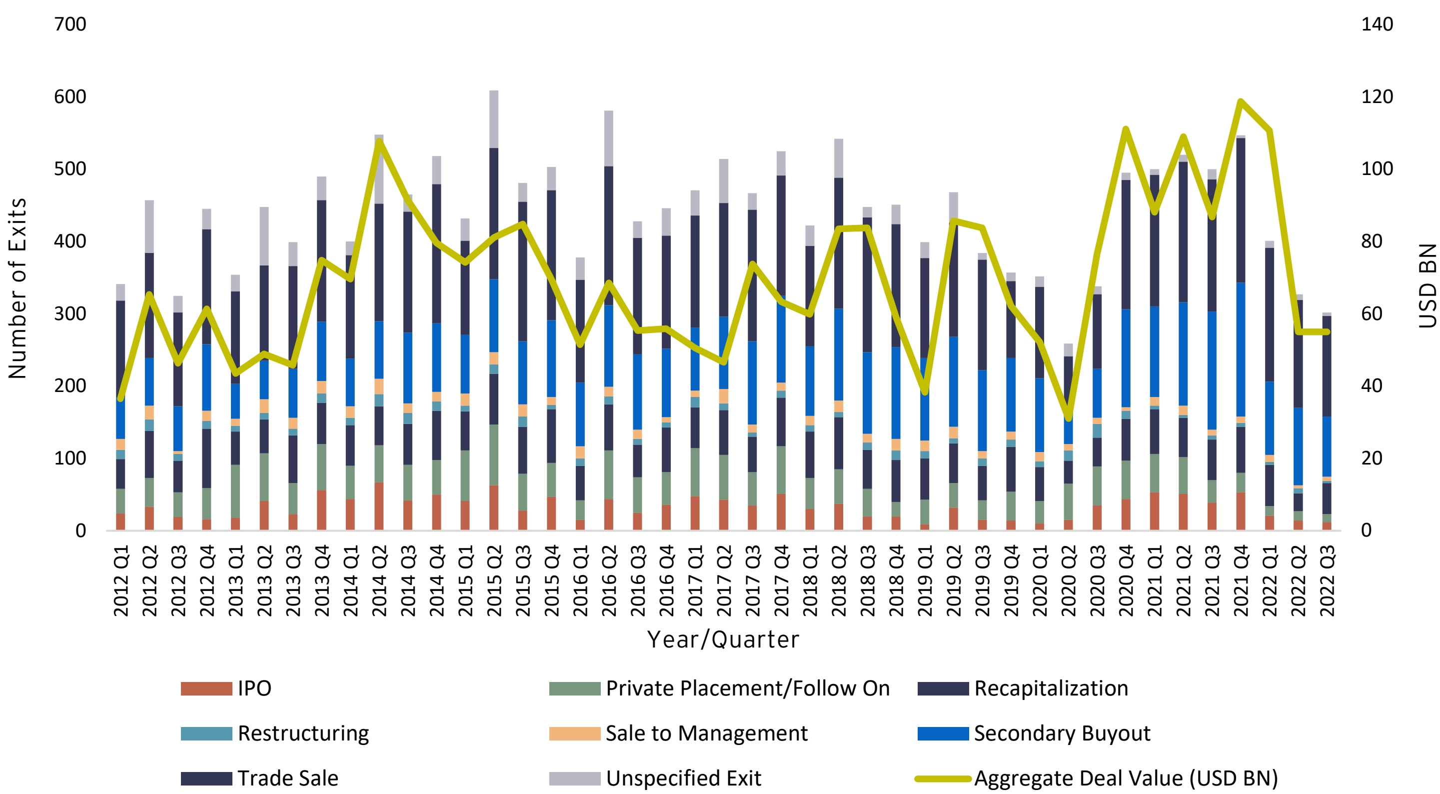
[1] S&P Leveraged Commentary and Data

However, the increasing cost of leverage – coupled with increased uncertainty – will likely exert downward pressure on private market valuations over the coming quarters. Managers dependent on industry cyclicality and large amounts of leverage look most vulnerable to valuation declines.

In 2021, the benchmark rates for leveraged buyout (LBO) lending were near zero, with very low credit spreads. This resulted in low borrowing costs and stress-free interest coverage ratios. As of December 2022, we observe benchmark rates of nearly 4% and wider spreads driving interest costs above 10%. They may rise even more in 2023 as central banks aggressively fight inflation.

For the past nine years including 2022, buyout debt/EBITDA multiples have remained steady at just under 6. The significant increase in rates leads to reduced interest coverage, or how many times profits are sufficient to meet interest costs. It also means higher liquidity risk for investments in companies in cyclical industries if earnings fall. We believe this may lead to increased opportunities for stressed/distressed investors. Private equity overall exit volume has seen greater declines than new deal activity, driven by a steep fall-off in public listings and mergers and acquisitions (M&A). However, sales between private equity firms have remained active in 2022 as such firms seek to exploit poor public pricing conditions for sellers – FIGURE 4.

FIGURE 4 | SALES TO OTHER PRIVATE EQUITY FIRMS HELD UP IN 2022



Source: Preqin as of September 30, 2022; See Glossary for definitions. Chart shows global buyout exits by type.

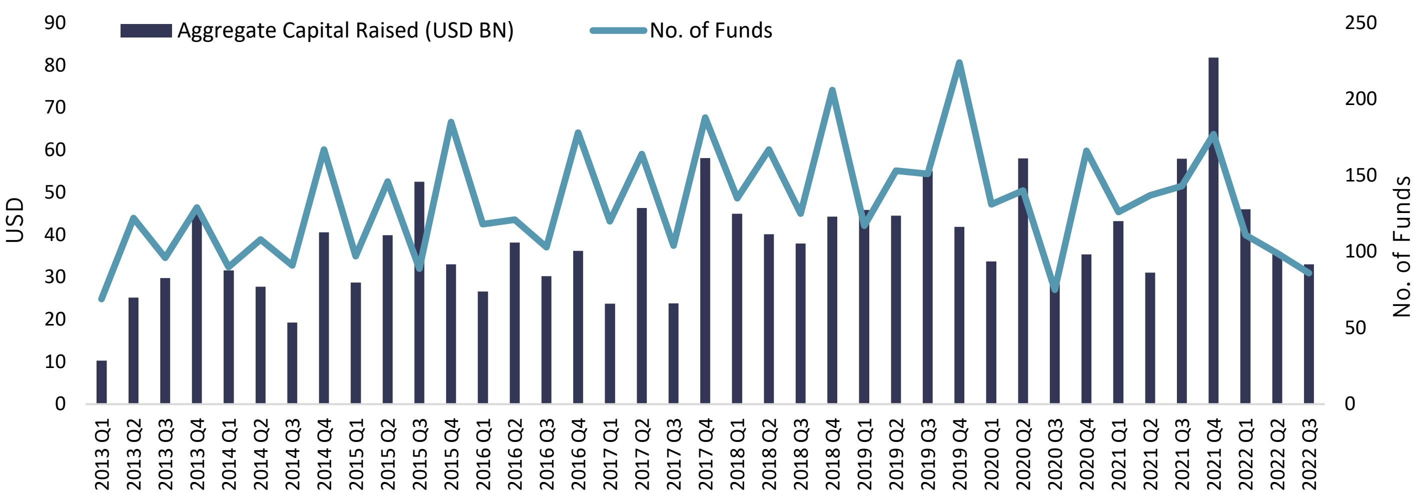
Real estate

2022 presented a unique set of challenges and opportunities for real estate investors. Increased financing costs, expanding capitalization rates, and inflationary pressures presented headwinds. But these conditions also created opportunities to take advantage of market inefficiencies, buy more cheaply and reposition properties to meet shifting consumer preferences.

In addition, powerful trends such as digital innovation, flexible working and delayed household formation have continued to transform real estate. We believe the dynamics that have redefined business processes and models of living, working, and shopping since the pandemic erupted are here to stay, despite recent uncertainties.

Inflation poses a particular challenge for the construction industry. In response to rising costs of labor and construction materials, new housing starts have slumped as real estate developers face greater risk of cost overruns and construction delays. Also, rising interest rates place pressure on debt service. For investors, this environment can potentially reduce returns. That said, continued rent growth in certain sectors like multifamily apartments and e-commerce related industrial properties are positive for investors.

FIGURE 5 | FEWER REAL ESTATE DEALS AND LESS MONEY RAISED IN 2022



Source: Preqin as of September 30, 2022; Chart shows global private real estate fundraising since Q1 2013 to Q3 2022, measured by the number of funds raised and the aggregate amount raised.

Similar to private equity, real estate funds have experienced a gradual slowdown in fundraising activity amid current uncertainty. Through the third quarter of 2022, private real estate fundraising was down 13% compared to the same period in 2021 – FIGURE 5.[2] Going forward, managers seeking to raise capital will likely continue to face difficulties as investors remain cautious about committing capital.

In this environment, we see the industrial and multifamily rental sectors as better positioned to withstand rising rates and inflation. In addition, tenants are showing a preference for Class-A offices incorporating better amenities rather than older office space. The continued corporate shift toward embracing hybrid work and digital technology are key drivers here.

[2] Preqin, as of September 30, 2022

Hedge funds

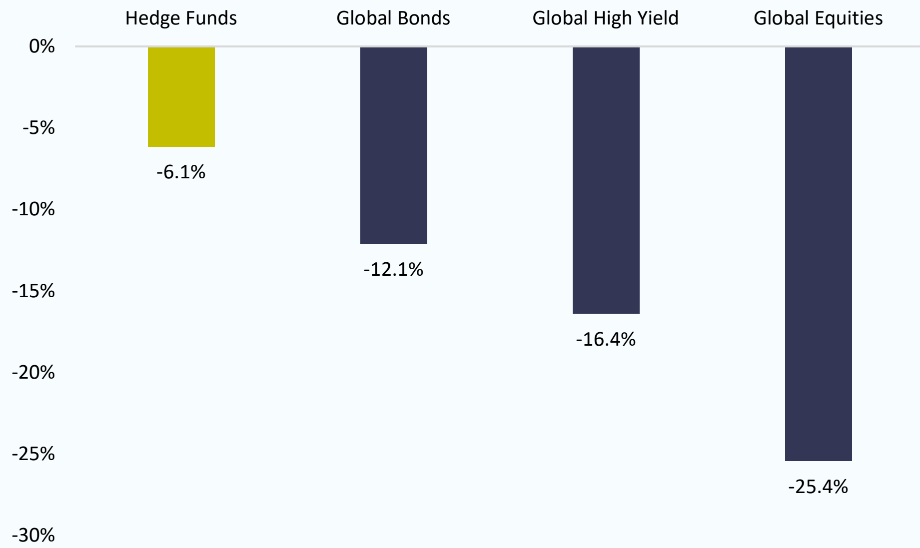
Hedge funds experienced a wide dispersion of returns in 2022. This partly reflects how hedge funds are not a uniform asset class and have many differing objectives. Overall, though, hedge funds preserved capital during the year better than equity and fixed income.

In this sense, the asset class fulfilled its intended role within portfolios of providing diversification to traditional markets.

Looking beyond the aggregate level, hedge fund strategy returns have seen substantial dispersion. Diversifying strategies – those whose returns typically have little or no correlation to other risk asset classes – typically saw flat to positive performance. These include global macro and relative value strategies.

By contrast, directional strategies – those that are correlated to risk assets – generally fell alongside traditional asset classes. These include equity long/short and event-driven strategies.

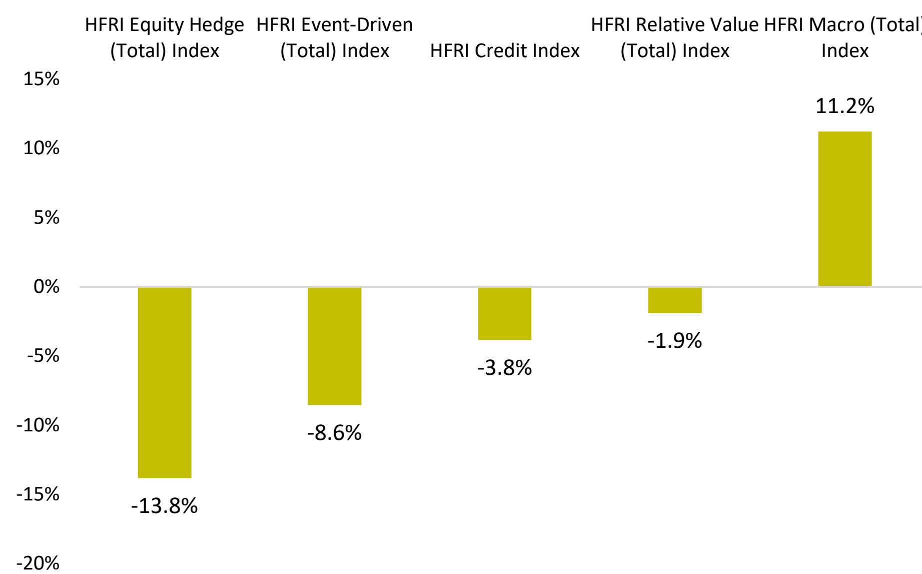
FIGURE 6 | 2022 HEDGE FUND VERSUS LONG-ONLY INDEX RETURNS



Source: Bloomberg, HFRI, MSCI, as of September 30, 2022. Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Real results may vary. See Glossary for definitions.

Chart compares the global performance of hedge funds (HFRI Fund Weighted Composite Index), global bonds (Bloomberg Barclays Global Aggregate Total Return Index Value Hedged USD), global high yield (Bloomberg Barclays Global High Yield Total Return Index Value Hedged USD) and global equities (MSCI World TR Net Index USD).

FIGURE 7 | 2022 RETURNS OF VARIOUS HEDGE FUND STRATEGIES



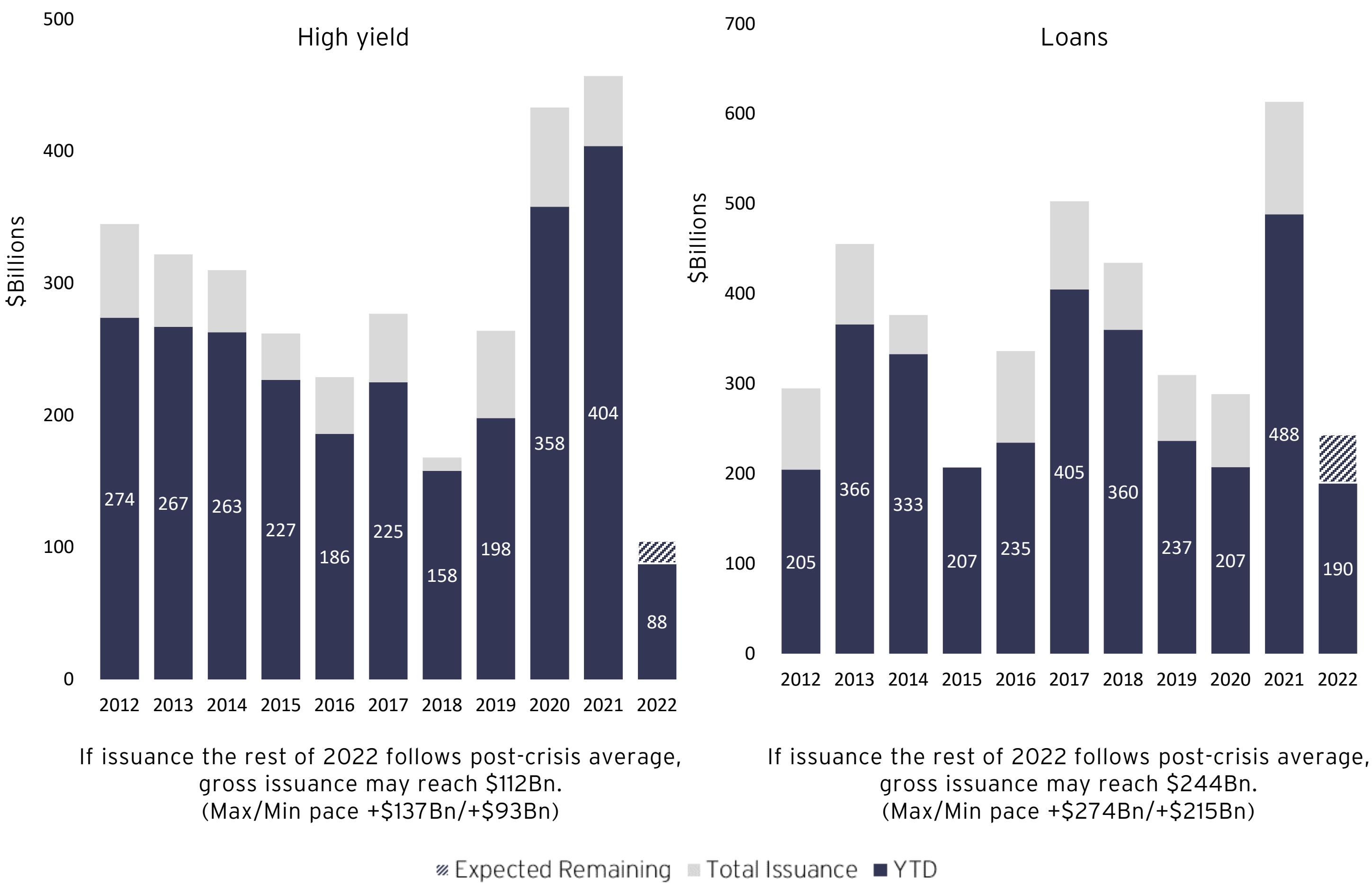
Source: HFRI, as of September 30, 2022; Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Real results may vary. See Glossary for definitions.

Potential opportunities for 2023 and beyond

Putting cash to work in a higher rate environment

Given the rapid rise in yields and the uncertain outlook for corporate profits, both credit and equity markets are largely closed to companies wishing to raise capital. Issuance of high yield bonds and loans through the end of the third quarter of 2022 stood at just 78% and 61% of levels respectively in the same period in 2021 – FIGURE 8.

FIGURE 8 | HIGH YIELD AND LOAN ISSUANCE FELL HARD IN 2022



Source: Citi Research, S&P/LCD, as of September 30, 2022. Charts show issuance of high yield bonds (left chart) and loans (right chart) in 2022 compared to years going back to 2012. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

FIGURE 9 | THE LOAN MARKET LARGELY SLAMMED SHUT IN Q3 2022

Table shows institutional new-issue loan volumes in the third quarter of 2022 for various categories of loan type. It shows the amounts lent in context of the five-year quarterly average, also looking back over the previous decade at previous low points.

	3Q22	Historical comparison	Five year quarterly average
"B" rated	$15.8B	Lowest since 3Q11	$67.5B
Refinancing	$2.6B	Post-GFC low	$27.5B
Dividend recap	$0.0B	Lowest since 1Q16	$9.9B
Sponsored M&A	$13.1B	Lowest since 1Q12	$39.9B
Sponsored	$13.6B	Post-GFC low	$60.2B
LBO	$10.6B	Lowest since 4Q17	$25.3B
M&A	$16.3B	Lowest since 4Q11	$54.5B
Total	$21.4B	Post-GFC low	$96.8B

Source: Leveraged Commentary & Data (LCD), as of September 30, 2022; See Glossary for definitions.

It was during the third quarter of 2022 that leveraged credit markets effectively closed – FIGURE 9. Given such severe syndicated debt-issuance constraints, many companies will need to explore alternative ways of raising capital and extending debt maturities. Specialist active alternative managers can provide capital for a new debt issuance. They can also initiate exchanges of public debt directly with issuers, giving them maturity relief in return for higher yield and/or additional collateral.

When companies cannot rely on public fixed income markets to raise capital, private direct lending funds can step in. Such funds typically provide variable rate loans to the market, mitigating investors' interest rate risk in a rising rate environment.

For example, despite the recent volatility in the technology sector, we believe in the sector's long-term strength. Senior secured floating rate direct loans to technology companies are structured to provide both current income and the potential for capital appreciation from structured debt and equity securities. In addition, adding exposure at the highest levels of the capital structure provides downside risk mitigation relative to technology equity exposure alone.

From a real estate perspective, rising interest rates are making mortgage payments more expensive. The rate on the 30-year fixed mortgage in the US is near 20-year highs. As of December 30, 2022, it stands at 6.59%. As a result, the estimated minimum annual income needed to purchase a house surpassed $120,000 in June 2022, a doubling in just six years. Rising mortgage rates, combined with surging home prices, make home ownership more difficult and multifamily rental more attractive, delaying household formation as a growing number of millennials will rent longer than past generations.[3]

Multifamily rental properties, such as low-rise "garden style", mid-to-high-rise apartment towers, and townhouse complexes, are especially resilient during periods of high inflation given the ability to reset rents more frequently as the short duration leases – typically one year – expire.

In 2022, multifamily rents have risen significantly alongside inflation: the average effective rental rate in the US grew over 10% year-on-year in the third quarter of 2022.[4] Also, longer-term supply and demand are still in balance, though according to the National Apartment Association, the US will need 4.3 million new apartment units in the next twelve years to meet housing demand.[5] The current insufficient supply of housing, coupled with less attainable home ownership and inflation limiting new build, is expected to continue to sustain robust rental demand.

Like multifamily, the industrial real estate sector has stayed resilient despite inflationary pressures. This is attributable to the sector's strong fundamentals, such as the ongoing shift toward e-commerce. Online shopping took a great leap forward during the pandemic as consumers switched even more to ordering online. While e-commerce may eliminate the need for shop floor space, online transactions require three times the warehouse space of traditional retail.[6] Each one percentage increase in e-commerce sales as a proportion of overall retail sales is expected to result in over 65 million square feet of demand for industrial space. E-commerce demand has particularly increased the need for larger, more sophisticated and centrally located distribution centers to enhance "last-mile" facilities for same-day or next-day delivery.

With demand outpacing supply, overall US vacancy rates are historically low at below 4%.[7] These favorable supply- demand fundamentals have contributed to rent growth above inflation, as year-over-year rent growth was 25% as of Q3 2022.[8]

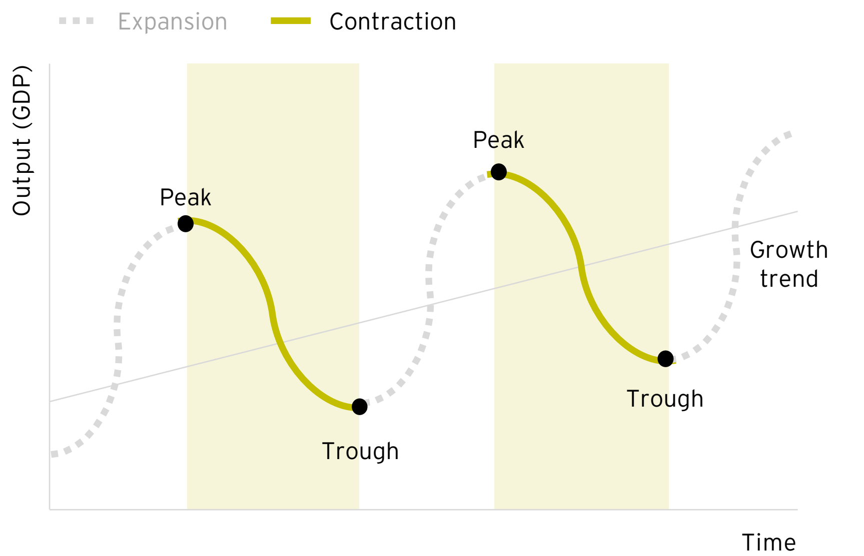
[3] United States Bureau of Labor Statistics, September 2022
[4] Moody's Analytics, Q3 2022
[5] National Multifamily Housing Council & National Apartment Association (US apartment demand through 2035)
[6] Black Creek Group: Acceleration of E-Commerce
[7] United States Industrial Outlook, Q3 2022, JLL Research
[8] United States Industrial Outlook, Q3 2022, JLL Research

Positioning for market dislocations and distress with alternatives

Financial markets tend to go through repetitive albeit uneven market cycles over time – FIGURE 10.

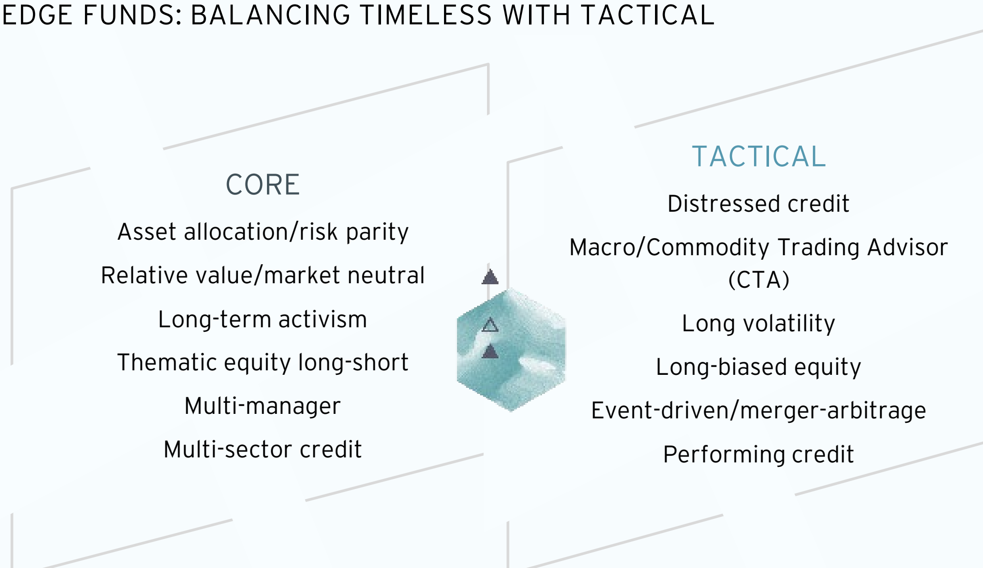
While certain hedge fund strategies make sense throughout the cycle, others are more reliant on the nearer-term environment. The former may be more suited to core portfolios or seeking exposure to long-term themes. The latter may be used in a more tactical, opportunistic fashion based on the phase of economic cycle and other factors – FIGURE 11.

FIGURE 10 | THE ECONOMIC CYCLE



Source: CGWI Hedge Fund Research and Management team ("HFRM"), as of January 2023

FIGURE 11 | HEDGE FUNDS: BALANCING TIMELESS WITH TACTICAL



Source: HFRM, as of January 2023

At peaks in the economic cycle, central banks often start tightening monetary policy, aiming to cool overheating economies that run the risk of inflationary pressures. As the economy contracts, volatility begins rising across asset classes while equity and credit markets face declines. Certain hedge fund strategies such as distressed credit and actively traded, hedged global macro may potentially benefit from such conditions, however.

Traditional global macro strategies can themselves experience "boom and bust" cycles as they seek to identify and profit from a limited number of large trades on economic themes. By contrast, hedge funds that seek active trading opportunities informed by macroeconomic analysis – which we refer to as hedged global macro – have historically been able to generate more consistent returns without large swings in correlations to markets.

As a result, we see hedged global macro as well positioned for active trading opportunities within fixed income and currencies given the current market backdrop, especially given the challenges faced by central banks in balancing inflation and growth.

FIGURE 12 | MACRO HEDGE FUNDS' LOW CORRELATION

	HFRI Macro: Active Trading Index	MSCI World TR Net Index (USD)	HFRI Equity Hedge (Total) Index	HFRI Event-Driven (Total) Index
HFRI Macro: Active Trading Index	1.0			
MSCI World TR Net Index (USD)	0.3	1.0		
HFRI Equity Hedge (Total) Index	0.3	0.9	1.0	
HFRI Event-Driven (Total) Index	0.3	0.8	0.9	1.0

Legend: Low correlation | Moderate correlation | High correlation

Source: HFRI, MSCI, as of September 30, 2022; Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Real results may vary. See Glossary for definitions.

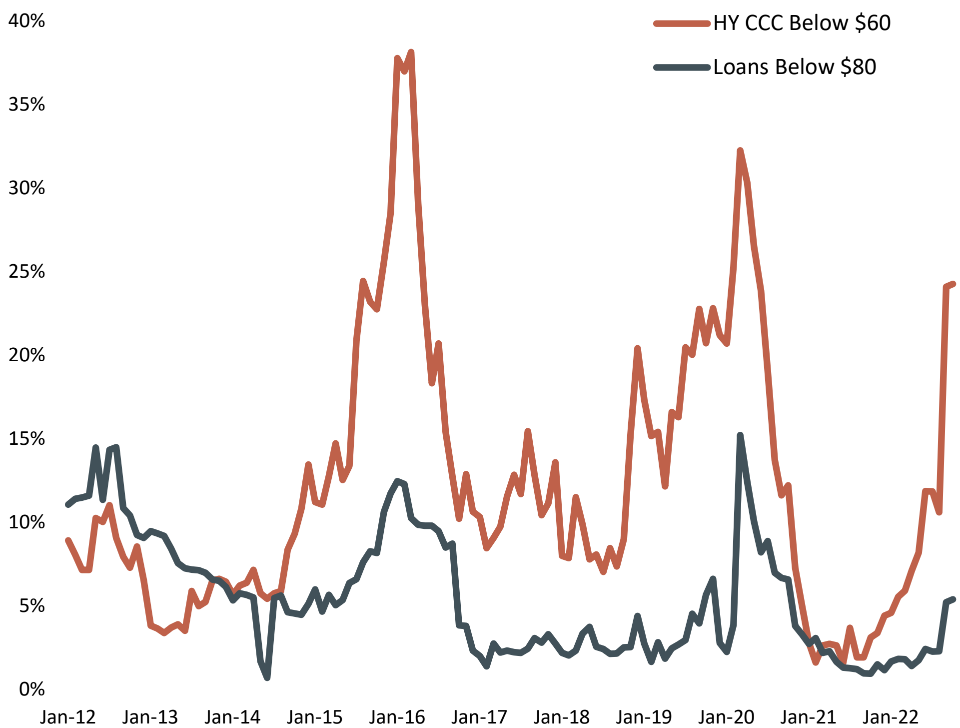
These strategies, as measured by the HFRI Macro: Active Trading Index, have historically shown modest correlation to more directional hedge fund strategies such as equity long-short and event-driven, which are more highly correlated to each other and to equities overall.

Credit market turmoil in 2022 has likely created a favorable investing landscape for 2023. Specifically, potential opportunities may arise for skilled alternative investment managers who seek to take advantage of volatility, capital shortages and episodes of outright stress and/or distress across public and private credit markets. Their goal is to generate returns by underwriting new debt issuance and making opportunistic secondary market purchases.

While dislocations in corporate credit markets might present a compelling opportunity set, there is significant value to having flexible capital across credit assets amid market volatility. That includes within structured credit markets where experienced managers can capitalize on complexity, inefficiency and bouts of reduced liquidity.

Bond defaults increase during economic contractions and capital becomes more expensive and harder to access. We believe there will be potential opportunities for managers with distressed credit experience in the coming year. But they will need restructuring expertise, as managers who can influence the process stand a better chance of recovering greater value from defaulted debt.

FIGURE 13 | PROPORTION OF HIGH YIELD BOND AND LOAN MARKETS IN DISTRESS



Source: Citi Research, Citi Leveraged Loan Tracker, FTSE, as of September 30, 2022. Chart shows the percentage of US high yield loans and bonds in distress. Distress is defined here as bond trading below $60 and a loan trading below $80, where par is $100. The indices are unmanaged, are not investable. Index data is provided for comparative purposes only. Past performance does not guarantee future results. Investors cannot invest in an index. All forecasts are expressions of opinion and are subject to change without notice and are not intended to be a guarantee of future events.

In 2022, the universe of debt trading at stressed and/or distressed levels has expanded – FIGURE 13. This is a result of tighter central bank policy, higher bond yields and widening credit spreads, the latter owing to recessionary fears.

We see this credit market sell-off as indiscriminate, with investors overlooking firm-specific factors that may influence when and how borrowers repay their outstanding debt.

As a result, we believe that skilled managers who have insight into issuer quality and potential capital structure events such as re-financings, debt exchanges, and outright restructurings may be able to generate high total returns.

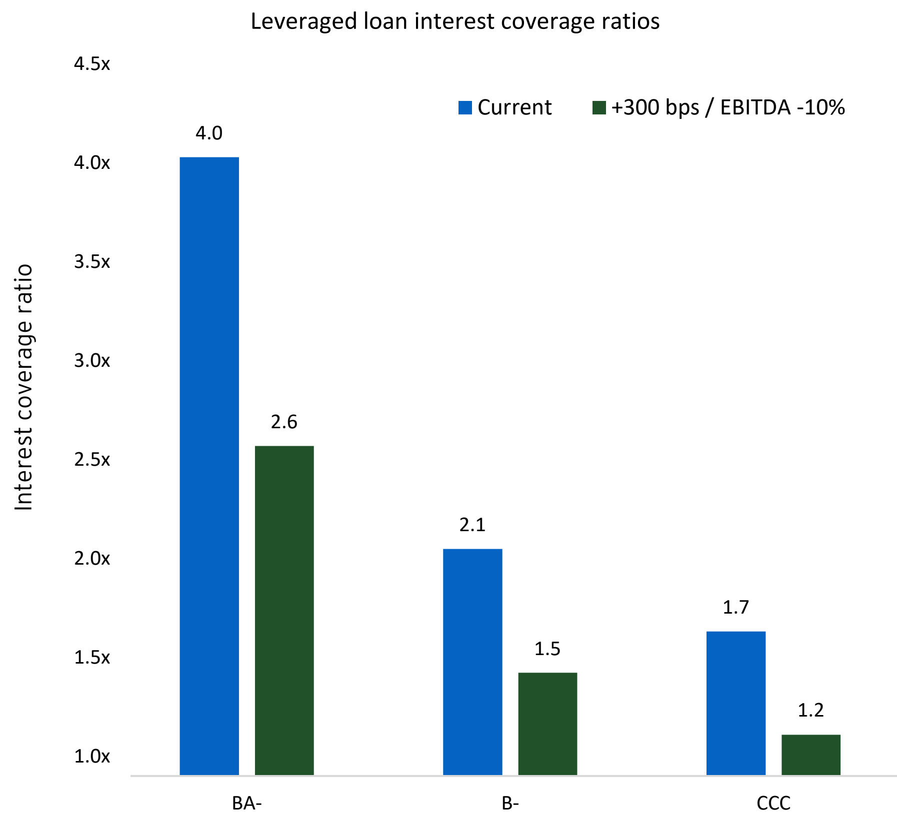
As revenue growth slows and input costs rise, businesses could potentially struggle to meet their interest and debt obligations. When these businesses seek financing, they may be put off by the unpredictability volatile public markets.

During a time of rising interest rates and weakening corporate earnings, interest coverage ratios may worsen considerably.

FIGURE 14 compares current interest coverage to potential interest coverage ratios if interest rates rose 300 basis points and EBITDA fell 10%. The effects upon interest coverage are shown for companies grouped by credit rating.

Based on our economic outlook and the speed of interest rate hikes to date, this scenario is likely to occur in certain companies and industries and will have significant impact on those leveraged companies' ability to service their debt and gain access to capital.

FIGURE 14 | LEVERAGED LOANS' INTEREST COVERAGE COULD GET SQUEEZED



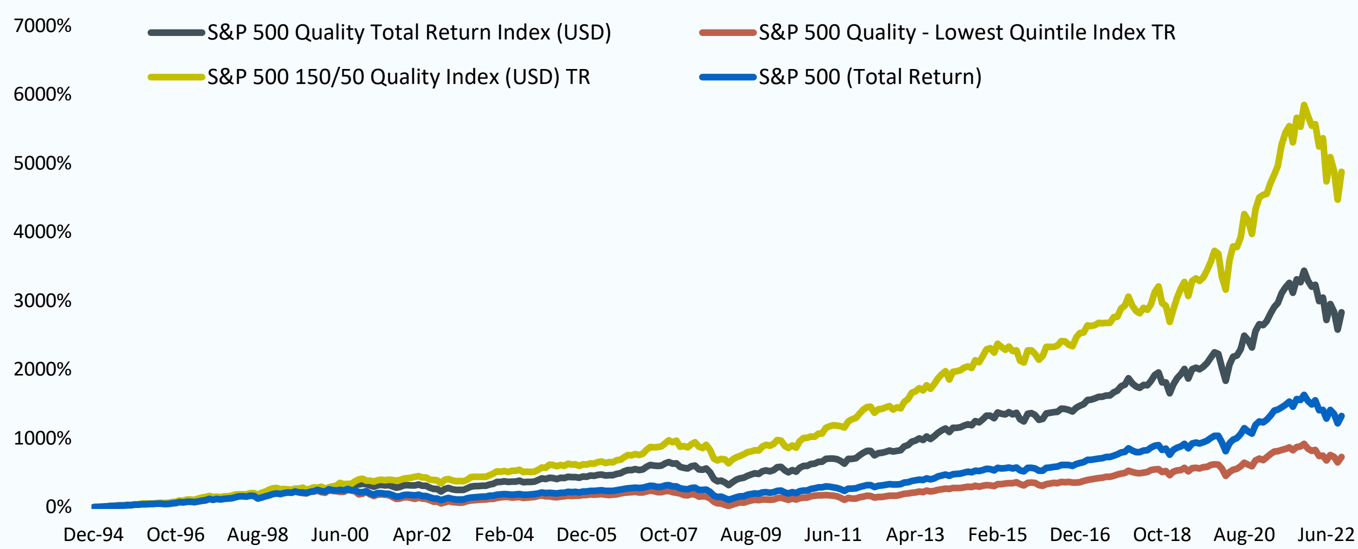
Source: PIMCO, S&P LCD, Bank of America ML, JP Morgan, Haver as of February 28, 2022

In public markets, a bias towards quality is preferred during uncertain times. Of course, "quality" investments are often in the eyes of the investor. That said, high quality companies typically have many of the following characteristics: high profit margins, healthy balance sheets, growing profits and/or dividends, stable forecasted cash flows, strong management and a sustainable competitive advantage.

Over time, equity portfolios with a quality bias have outperformed broader equity indices. And while quality companies have outperformed, companies of the lowest quality have significantly underperformed the broader market.

FIGURE 15 shows cumulative returns for the S&P 500 Index, as well as for its quality members, its lowest quality members, and a leveraged long position in the quality members and a short position in the lowest quality members. Over time, leveraged long exposure to quality combined with short exposure to the lowest quality companies could generate additional potential returns for investors.

FIGURE 15 | QUALITY STRATEGIES HAVE OUTPERFORMED



	ANNUAL COMPOUND RETURN
S&P 500 Quality Total Return Index (USD)	12.9%
S&P 500 150/50 Quality Index (USD) TR	15.1%
S&P 500 Quality - Lowest Quintile Index TR	7.9%
S&P 500 (Total Return)	10.5%

Source: Bloomberg as of December 1, 2022; Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Real results may vary. See Glossary for definitions.

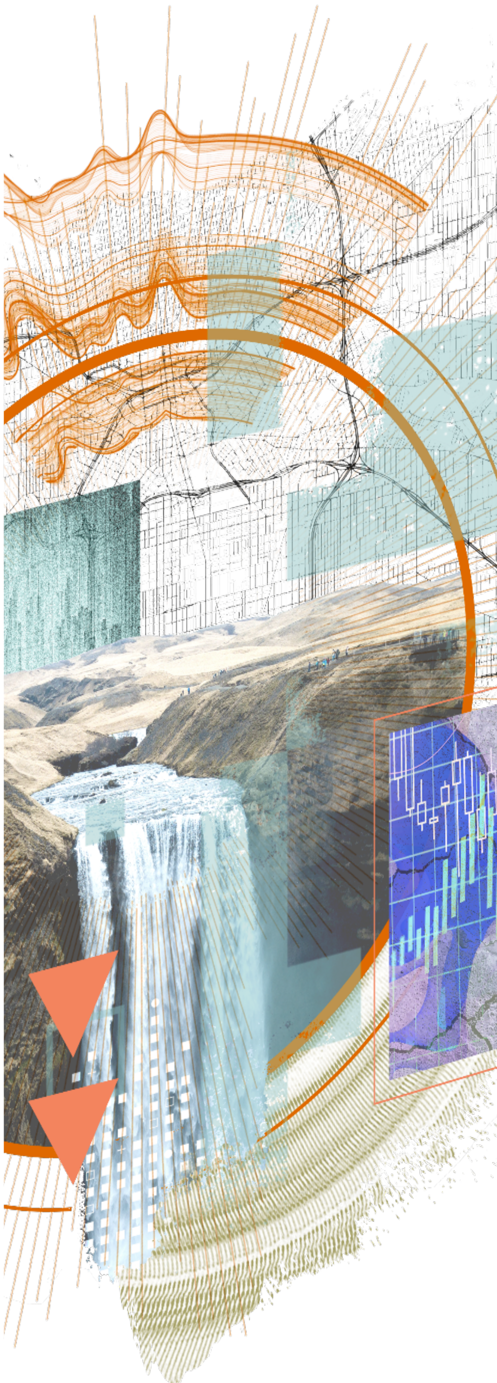
The chart shows cumulative total returns and table shows annualized compound returns since Dec 1994 of the S&P 500 Index, the S&P 500 Quality Index, the S&P 500 Lowest Quintile Index, and the S&P 500 150/50 Quality Index.

However, getting such exposure is easier said than done. Individual investors face constraints in entering short positions, including leverage restrictions, borrowing costs, lack of expertise, and the potential for margin calls and short squeezes.

We therefore see shorting as more the domain of the likes of hedge funds. These and other larger institutional investors have the research expertise to identify potential shorts, experience in managing a short portfolio, and access to financing on relatively attractive terms. Identifying and utilizing shorts in lower quality stocks can not only help with a portfolio's overall downside protection but also potentially be a meaningful source of alpha over a cycle.

In private equity and real estate, we see opportunities in funds focused on assets that are resilient to inflation shocks and that have demonstrated strong pricing power over the long term. Many of these secular growth prospects relate to unstoppable trends discussed below or are available through a diversified exposure to high quality private equity and real estate managers.

Another approach to resilience in volatile times is to seek out unique real assets that are both supply constrained and show resilient demand. These assets have the potential to preserve wealth during periods of high inflation and low real growth. While assets such as gold, art, wine and farmland are often cited as examples of this, we have focused on a strategy that specializes on making minority investments in sports-related assets. Historically, the sector has shown meaningful resilience through multiple macroeconomic shocks such as the stagflation of the late 1970s, the recessions of the 1980s, the dot-com crash and the Global Financial Crisis. Many factors contribute to this, including franchise quasi-monopolies, high customer loyalty, long-term media contracts and increased pricing power.



We are also evaluating diversified buyout managers across North America and Europe. In North America, middle-market managers are well-positioned to see significant deal flow relative to their fund sizes. Admittedly, a higher rate environment will certainly affect company selection, deal capitalization, pricing and underwriting criteria. However, it is unlikely to have a major impact on the execution of modern buyout strategies, as fund returns are increasingly derived from factors such as sales growth, margin expansion, and strategic repositioning rather than the use of leverage.

Choosing which fund manager to invest with will be more important than ever, as performance dispersion is likely to remain high. With evolving costs structures and supply chains, strategies need to demonstrate deep sector expertise and forecast where disruption will arise in each sector.

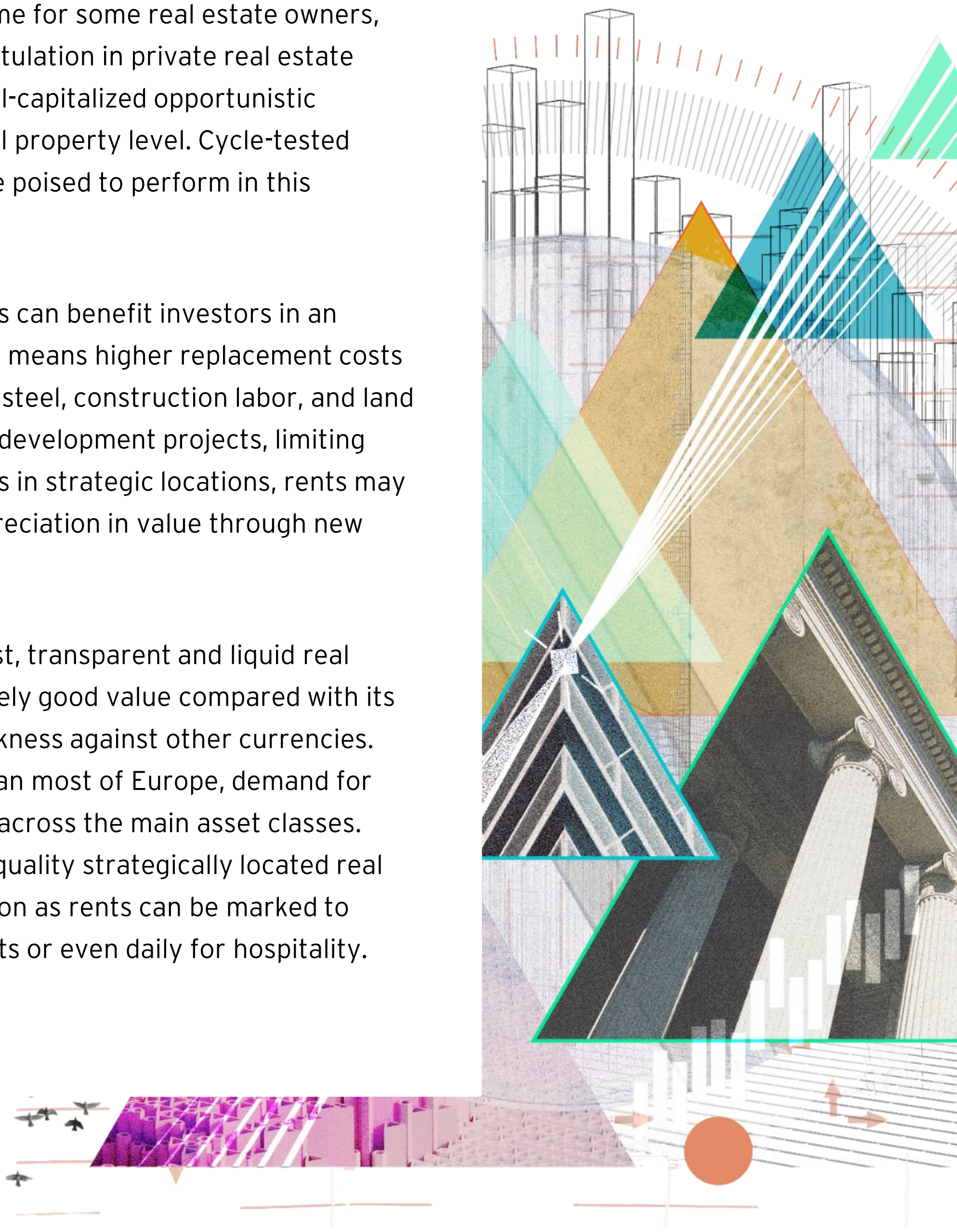
In Europe, amid challenging conditions, certain buyout strategies are using a thematic approach that focuses on high quality companies in core sectors. We see them as well placed to generate compelling investment returns. Many European companies have solid foundations. Median leverage is lower than in the US and had been falling for several quarters.

As with North America and Europe, the ability of diversified Asia buyout managers to seek to exploit market weakness and capital constraints facing companies has evolved over the past three decades. In addition, the ability to pivot between the developed economies of the region allows for a certain level of diversification in volatile times.

While record-low interest rates bought time for some real estate owners, the increasing rate cycle may lead to capitulation in private real estate markets. This could open the door for well-capitalized opportunistic managers to create value at the individual property level. Cycle-tested strategies with experienced managers are poised to perform in this dynamic environment.

Investments in real estate and hard assets can benefit investors in an inflationary environment. Higher inflation means higher replacement costs and building inputs, including lumber and steel, construction labor, and land parcels. These rising costs may limit new development projects, limiting new supply. By identifying the right assets in strategic locations, rents may reflect inflationary pricing leading to appreciation in value through new leases linked directly to inflation rates.

For example, the UK has one of the largest, transparent and liquid real estate markets globally and offers relatively good value compared with its peers, particularly given the pound's weakness against other currencies. With the UK population growing faster than most of Europe, demand for good quality space should remain strong across the main asset classes. Accordingly, we believe that investing in quality strategically located real estate can provide a hedge against inflation as rents can be marked to market as often as monthly for apartments or even daily for hospitality.



Unstoppable trends

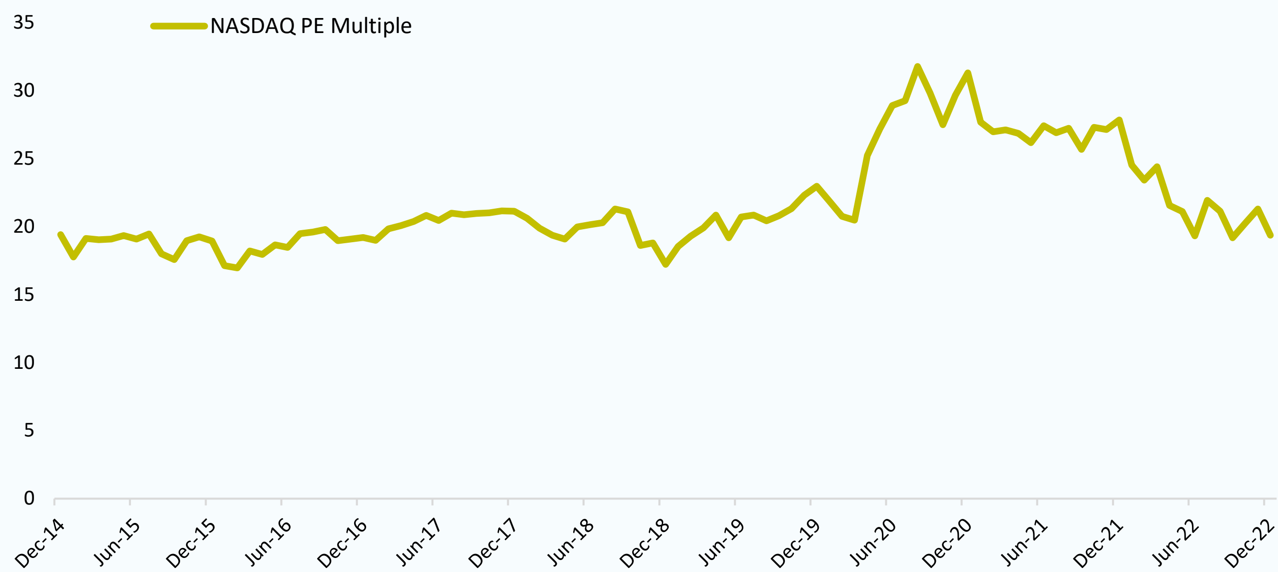
DIGITIZATION

The Citi Global Wealth Investments Office of the Chief Investment Strategist has consistently highlighted the accelerating adoption of technology across almost every industry and business. We see this as creating a "new normal" of an increasingly data-enabled, decentralized and flexible global economy. Among the areas of digitization that we have focused on are automation and robotics, artificial intelligence, 5G connectivity, fintech and cybersecurity.

Publicly listed digitization equities declined sharply in 2022, largely in response to the higher interest rate environment. The tech-heavy NASDAQ Index declined -32.5% for the year, as the likes of software and fintech struggled – FIGURE 16. The selloff has largely been indiscriminate, creating potential buying opportunities in companies with solid fundamentals. Valuation multiples have reset, with the NASDAQ Composite's forward PE multiple declining from 28 at the beginning of the year to 19 at the end of December.

FIGURE 16 | TECH'S VALUATION TUMBLE

One-year forward price/earnings multiple of the NASDAQ Composite Index from the start of 2015 through 2022.



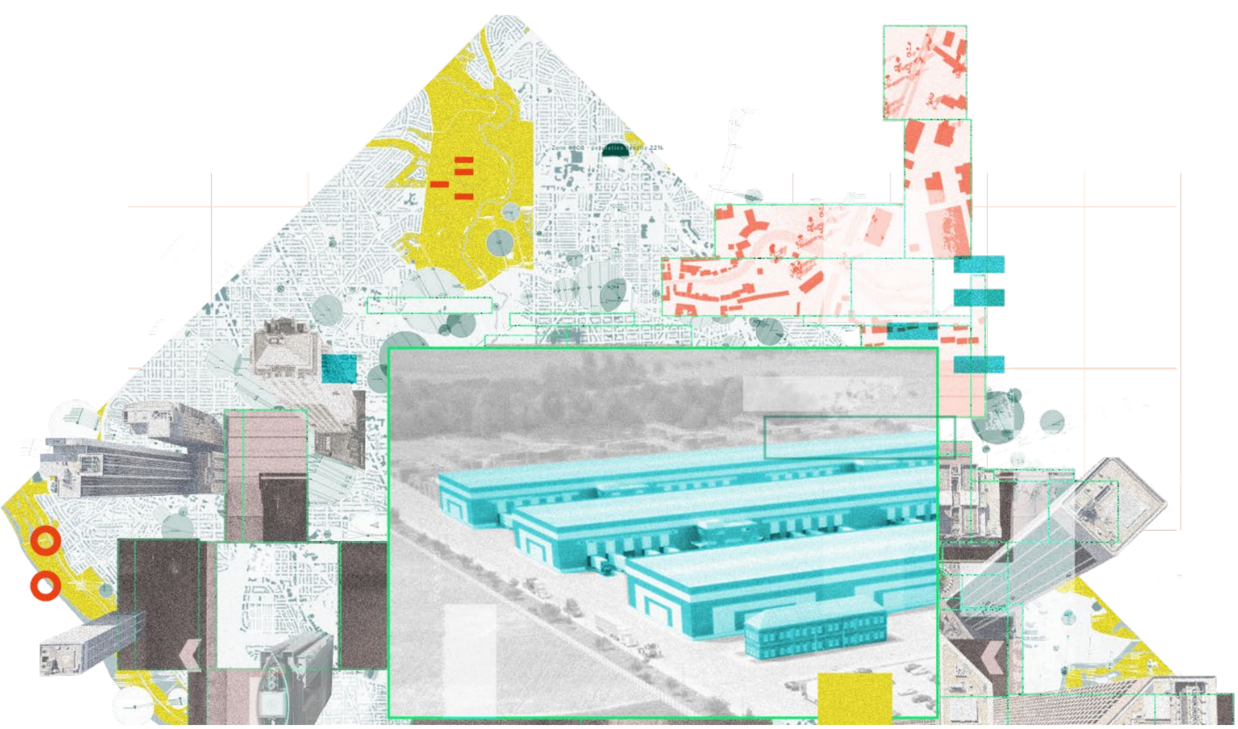
Source: Bloomberg, as of December 31, 2022; Past performance is not indicative of future returns. For illustrative purposes only. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Real results may vary. See Glossary for definitions.

In the recessionary scenario we envisage in 2023, digitization equities could see further declines in the near term. However, their pullback to date has likely reduced the scope for longer-term downside from here. Admittedly, earnings estimates may not have bottomed yet. However, history suggests that digitization equities will likely bottom before earnings estimates do.

We believe there are potential opportunities for active managers to identify digitization companies trading at attractive valuations. Likely targets are those that offer ongoing growth potential, recurring revenue streams, productivity enabling services, and/or mission-critical technologies. While tech-focused equity hedge funds will pursue long investments relating to longer-term trends in areas such as cyber security, cloud, and 5G, there is scope for shorting companies facing near-term cyclical hurdles.

Venture capital (VC) managers with proven records of identifying tech winners and losers have the potential to generate value coming out of this market downturn. Private capital's role could become even more prominent and critical to innovation in the near term, amid a pullback in public funding of technology and high growth companies. Accordingly, technology deal activity has remained strong in 2022, down 10% from 2021 highs, but still significantly higher than in any prior year. And while VC deal activity has declined for three straight quarters from the highs of 2021, year-to-date VC activity in 2022 has already exceeded all other years.

The reset of public companies' valuations may also provide openings for buyout funds active in the technology sector. Public-to-private transactions are likely to become more prevalent and lower entry levels are likely to help generate superior returns over time. In addition, as holding periods in private markets will increase for technology assets that would have normally opted for an exit via an IPO, larger buyout funds can benefit through sponsor-to-sponsor transactions at lower prices.



Unstoppable trends

G2 POLARIZATION

We believe the continued shift in economic power towards Asia to be an unstoppable trend. As Asia's share of the world's economy increases and the rivalry intensifies between the US and China – the "G2 powers" – we see attractive investments in Asia and Greater China for both return potential and diversification. China's hardline anti-COVID policies – which it is now easing – have hit Chinese asset values hard. Chinese equities are trading at forward earnings multiples near five-year lows, providing a potentially attractive entry point.

At the 20th Party Congress held in October of 2022, President Xi indicated China "will favor national strategic needs, gather strength to carry out indigenous and leading scientific technological research, and resolutely win the battle in key core technologies."

Xi's statements appear helpful to companies within tech hardware, semiconductors, materials and pharmaceuticals. Such companies are more abundant in the China A-share market compared to the Chinese stocks listed in Hong Kong and New York, which are consumer discretionary- and communication services-heavy. Additionally, A-shares are a far less efficient market, with low institutional ownership and trading volumes dominated by local retail investors who rapidly trade in and out, often for non-fundamental reasons. So, we see a positive environment for specialist active managers within China's A-share markets.

We have also seen the maturation of the Asia private equity sector, with significant fundraising and capital deployment activity over the past few years. However, the pace of investments in Asia far outstrips exits compared to the US. From 2011 to the first half of 2022, the median investment-to-exit ratio of China and India are roughly 8.2 and 5.9 respectively, versus two in the US.

As a result, there is significant net inflow in Asia Pacific region. This has created a meaningful overhang of un-exited companies in funds reaching their expiration date, increasing the market opportunity for secondary managers.

Also, the secondary market in the Asia Pacific region is relatively at a much earlier stage of development than those in the US and Europe. While Asia has represented nearly 20% of global private equity fundraising and deployment over the past few years, it has only made up 7% of the global secondary market. Therefore, large specialists in GP-led secondaries in Asia may be well positioned to capitalize.

Unstoppable trends

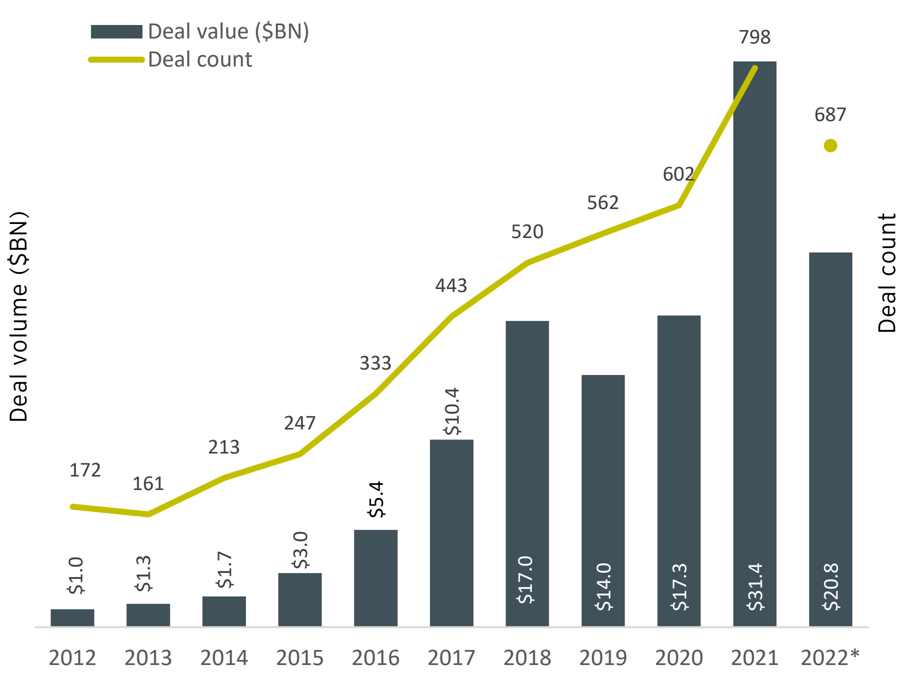
GREENING THE WORLD

With the ongoing evolution of sustainable investing, asset managers are taking varying approaches. For hedge funds, certain managers are pursuing “ESG integration” within their portfolios. This approach considers environmental, social and governance (ESG) factors. Based on this, it then selects investments with attractive ESG attributes, discarding those with unattractive ESG attributes. Investors can embrace ESG integration without drastically altering the risk and reward profile of an asset class in their portfolio.

To see this in action, consider the MSCI ACWI Sustainable Impact Index. This index aims to identify companies that derive at least 50% of revenues from products and services aligned with the United Nations’ Sustainable Development Goals (SDGs). Securities are weighted within the index according to the percentage of revenue derived from these sources. The index has a correlation of 0.9 to the MSCI ACWI Index which does not consider ESG factors. The MSCI ACWI Sustainable Impact Index has returned an annualized 9.1% from inception in March 2016 to October 2022, compared to 8.6% for the MSCI ACWI.

Certain managers seeking broad exposure to equities – for example, within multi-asset and equity long/short strategies - may seek to employ sustainably-aligned investments. Managers may use this data to take long and potentially short positions within equities in conjunction with existing stock-analysis frameworks. We believe as data in the space becomes more readily available and analyzable that more managers will be able to create sustainably-aligned implementations of their existing strategies, and we encourage asset managers to continue to move in this direction.

FIGURE 17 | CLIMATE-TECH VENTURE CAPITAL ACTIVITY HEATS UP



* Data as of September 30, 2022
Source: Pitchbook, as of September 30, 2022
Chart shows venture capital deal activity measured by individual deal numbers and total deal volume in billions of US dollars.
Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. Real results may vary.

In response to increasing investor demand, private equity managers have also begun to address ESG. Sustainable features now appear in their core offerings and in dedicated “impact” funds. For example, the depth of the climate-tech investable venture capital market has increased, with climate representing the fastest growing sector within VC.

For context, the compound annual growth rate (CAGR) of investments for the wider venture capital universe was 18% from 2013 to 2019. But for climate tech, CAGR was almost 5 times higher at 84% - FIGURE 17). We are evaluating strategies within this VC subsector as it matures in size and scope.

What to do now?

In uncertain times like these, there is a natural urge to avoid risk assets. This goes for alternatives, which may not only suffer further downside but are also harder to sell out of, given their illiquidity. That being the case, suitable investors may feel tempted to stay on the sidelines before committing capital to private equity, real estate and hedge funds once more.

We believe that waiting until the dust settles would be a mistake, however. Expected lower valuations across asset classes and the likelihood of distressed and stressed opportunities ahead potentially mean a more favorable investing landscape for alternatives managers in 2023 and beyond.

In our view, therefore, there are opportunities for suitable investors to deploy capital methodically. Our bias is toward high quality managers with enough dry powder to take advantage around the bottom of the cycle. Historically, the aftermath of bear markets (e.g., early 2000 dot-com bubble; Great Financial Crisis) have been fruitful times for alternative strategies. However, we do not seek to time markets via alternatives. Instead, we are willing to take to positions ahead of a trough in the markets.

We believe that qualified investors should consider taking a disciplined, multi-year and cross-cycle approach to allocating capital to alternatives.

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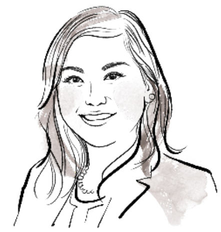

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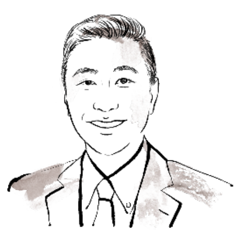

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Alternative Investments Product Management

IRFAN YUNUS
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Operational Due Diligence

As of December 31, 2022

Glossary

ASSET CLASS DEFINITIONS

Cash is represented by US 3-month Government Bond TR, measuring the US dollar-denominated active 3-Month, fixed-rate, nominal debt issues by the US Treasury.

Commodities asset class contains the index composites – GSCI Precious Metals Index, GSCI Energy Index, GSCI Industrial Metals Index, and GSCI Agricultural Index – measuring investment performance in different markets, namely precious metals (e.g., gold, silver), energy commodity (e.g., oil, coal), industrial metals (e.g., copper, iron ore), and agricultural commodity (i.e., soy, coffee) respectively. Reuters/Jeffries CRB Spot Price Index, the TR/CC CRB Excess Return Index, an arithmetic average of commodity futures prices with monthly rebalancing, is used for supplemental historical data.

Emerging Markets (EM) Hard Currency Fixed Income is represented by the FTSE Emerging Market Sovereign Bond Index (ESBI), covering hard currency emerging market sovereign debt.

Equity Market Neutral is an investment strategy in which the portfolio manager attempts to exploit differences in stock prices by being long and short an equal amount in closely related stocks.

Global Developed Market Corporate Fixed Income is composed of Bloomberg Barclays indices capturing investment debt from seven different local currency markets. The composite includes investment grade rated corporate bonds from the developed-market issuers.

Global Developed Market Equity is composed of MSCI indices capturing large-, mid- and small-cap representation across 23 individual developed-market countries, as weighted by the market capitalization of these countries. The composite covers approximately 95% of the free float- adjusted market capitalization in each country.

Global Developed Investment Grade Fixed Income is composed of Barclays indices capturing investment-grade debt from twenty different local currency markets. The composite includes fixed-rate treasury, government-related, and investment grade rated corporate and securitized bonds from the developed-market issuers. Local market indices for US, UK and Japan are used for supplemental historical data.

Global Emerging Market Fixed Income is composed of Barclays indices measuring performance of fixed-rate local currency emerging markets government debt for 19 different markets across Latin America, EMEA and Asia regions. iBoxx ABF China Govt. Bond, the Markit iBoxx ABF Index comprising local currency debt from China, is used for supplemental historical data.

Global High Yield Fixed Income is composed of Barclays indices measuring the non-investment grade, fixed-rate corporate bonds denominated in US dollars, British pounds and euros. Securities are classified as high yield if the middle rating of Moody's, Fitch, and S&P is Ba1/BB+/BB+ or below, excluding emerging market debt. Ibbotson High Yield Index, a broad high yield index including bonds across the maturity spectrum, within the BB-B rated credit quality spectrum, included in the below-investment-grade universe, is used for supplemental historical data.

Hedge Funds are composed of investment managers employing different investment styles as characterized by different sub categories – HFRI Equity Long/Short: Positions both long and short in primarily equity and equity derivative securities; HFRI Credit: Positions in corporate fixed income securities; HFRI Event Driven: Positions in companies currently or prospectively involved in wide variety of corporate transactions; HFRI Relative value: Positions based on a valuation discrepancy between multiple securities; HFRI Multi Strategy: Positions based on realization of a spread between related yield instruments; HFRI Macro: Positions based on movements in underlying economic variables and their impact on different markets; Barclays Trader CTA Index: The composite performance of established programs (Commodity Trading Advisors) with more than four years of performance history.

High Yield Bank Loans are debt financing obligations issued by a bank or other financial institution to a company or individual that holds legal claim to the borrower's assets in the event of a corporate bankruptcy. These loans are usually secured by a company's assets, and often pay a high coupon due to a company's poor (non- investment grade) credit worthiness.

Multi-Strategy Hedge Funds combine different single hedge fund strategies in one portfolio and differentiate considerably from each other. Most often, such portfolios include a variety of long-short, relative value and event-driven strategies.

Private Equity is an alternative investment class which at its most basic form is the capital or ownership of shares not publicly traded or listed on a stock exchange. Its characteristics are often driven by those for Developed Market Small Cap Equities, adjusted for illiquidity, sector concentration, and greater leverage.

Real Estate Investment Trust or REIT is a corporate entity that either has bulk or all its asset base, income and investments related to real estate. In the US under Security and Exchange Commission (SEC) guidelines, for an entity to qualify as an REIT, at least 90% of its taxable annual income to shareholders in the form of dividends must be from real estate. While typically REITs are publicly traded, not all are, as Public Non-Listed REITs (PNLRs) can register with SEC as REITs, but do not trade on major stock exchanges.

Structured Credit is an investment strategy which involves pooling similar debt obligations and selling off the resulting cash flows. Structured credit products are created through a securitization process, in which financial assets such as loans and mortgages are packaged into interest-bearing securities backed by those assets, and issued to investors. This, in effect, re-allocates the risks and return potential involved in the underlying debt.

Volatility Hedge Funds generally focus on the equity or index volatility space, but are also able to trade volatility over a number of different markets, including commodities and currencies.

INDEX DEFINITIONS

Bloomberg Barclays Global Aggregate Bond Index is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.

Glossary

Bloomberg Barclays US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes US dollar denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

HFRI Equity Hedge: Equity Market Neutral Index is an index of Equity Market Neutral strategies, which employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. These can include both factor-based and statistical arbitrage/trading strategies. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

HFRI Fund Weighted Composite Index is a global, equal-weighted index of single-manager funds that report monthly net of all fees performance in US Dollar and have a minimum of $50 Million under management or $10 Million under management and a 12 month track record of active performance. The index does not include fund of funds.

HFRI Relative Value (Total) Index is an equal weighted index that maintains positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types.

HFRI Relative Value: Fixed Income-Asset Backed Index includes strategies in which the investment thesis predicated on realization of a spread between related instruments in which one or multiple components of the spread is a fixed income instrument backed physical collateral or other financial obligations (loans, credit cards) other than those of a specific corporation. Strategies employ an investment process designed to isolate attractive opportunities between a variety of fixed income instruments specifically securitized by collateral commitments which frequently include loans, pools and portfolios of loans, receivables, real estate, machinery or other tangible financial commitments.

HFRI Relative Value: Multi-Strategy Index includes strategies which employ an investment thesis predicated on realization of a spread between related yield instruments in which one or multiple components of the spread contains a fixed income, derivative, equity, real estate, MLP or combination of these or other instruments. Strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager.

HFRI Relative Value: Volatility Index is an index of volatility strategies which trade volatility as an asset class, employing arbitrage, directional, market neutral or a mix of types of strategies, and include exposures which can be long, short, neutral or variable to the direction of implied volatility, and can include both listed and unlisted instruments.

MSCI AC World Index (“MSCI ACWI”) is designed to track broad global equity-market performance. It comprises the stocks of nearly 3,000 companies from 23 developed countries and 25 emerging markets.

The MSCI ACWI Sustainable Impact Index is designed to identify listed companies whose core business addresses at least one of the world's social and environmental challenges, as defined by the United Nations Sustainable Development Goals.

MSCI China Index captures large- and mid-cap representation across China A shares, H shares, B shares, Red chips, P chips and foreign listings (e.g., ADRs). With 704 constituents, the index covers about 85% of this China equity universe.

MSCI World Index covers large- and mid-cap equities across 23 Developed Markets countries. With 1,603 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.

NASDAQ Composite is a stock market index that includes almost all stocks listed on the Nasdaq stock exchange. Along with the Dow Jones Industrial Average and S&P 500, it is one of the three most-followed stock market indices in the US.

S&P 500 Index is a capitalization-weighted index that includes a representative sample of 500 leading companies in leading industries of the US economy. Although the S&P 500 focuses on the large-cap segment of the market, with over 80% coverage of US equities, it is also an ideal proxy for the total market.

S&P 500 150/50 Quality Index takes a leveraged long position in the quality index and a short position in the lowest quest quintile index.

S&P 500 Lowest Quintile Index tracks the lowest 100 companies in the S&P 500 based on return on equity, accrual ratios, and financial leverage

S&P 500 Quality Index tracks the top 100 companies in the S&P 500 based on return on equity, accrual ratios, and financial leverage.

VIX, or the Chicago Board Options Exchange (CBOE) Volatility Index, is a real-time index representing the market’s expectation of 30-day forward-looking volatility, derived from the price inputs of the S&P 500 index options.

OTHER TERMINOLOGY

Aggregate Deal Value USD BN is the total value of deals that occurred in the specified time period, for the specified asset class.

Correlation is a statistical measure of how two assets or asset classes move in relation to one another. Correlation is measured on a scale of 1 to -1. A correlation of 1 implies perfect positive correlation, meaning that two assets or asset classes move in the same direction all of the time. A correlation of -1 implies perfect negative correlation, such that two assets or asset classes move in the opposite direction to each other all the time. A correlation of 0 implies zero correlation, such that there is no relationship between the movements in the two over time.

Dividend recapitalization (frequently referred to as dividend recap) is a type of leveraged recapitalization that involves the issuing of new debt by a private company, that is later used to pay a special dividend to shareholders (thereby, reducing the company’s equity financing in relation to debt financing).

IPO or Initial Public Offering refers to the process of offering shares of a private corporation to the public in a new stock issuance for the first time. An IPO allows a company to raise equity capital from public investors.

Glossary

Leveraged Buyout (LBO) is the acquisition of another company using a significant amount of borrowed money (bonds or loans) to meet the cost of acquisition. The assets of the company being acquired are often used as collateral for the loans, along with the assets of the acquiring company.

Mergers and Acquisitions (M&A) refers to the consolidation of companies or their major business assets through financial transactions between companies. A company may purchase and absorb another company outright, merge with it to create a new company, acquire some or all of its major assets, make a tender offer for its stock, or stage a hostile takeover.

Recapitalization involves exchanging one type of financing for another – debt for equity, or equity for debt. One example is when a company issues debt to buy back its equity shares. The purpose of recapitalization is to stabilize a company's capital structure.

Refinancing refers to the process of revising and replacing the terms of an existing credit agreement, usually as it relates to a loan or mortgage.

Restructuring is a significant action undertaken by a company in order to modify its operations with the intention of reducing debt, increasing efficiency, and improving the business going forward. A business restructure is most common in companies facing financial difficulties.

Secondary Buyout refers to a transaction involving the sale of a portfolio company by one financial sponsor or private equity firm to another. This kind of buyout indicates the end of the seller's control or involvement with the company.

Trade Sale is the disposal of a company's shares or assets, in whole or in part to another company, an M&A exit, in other words, in which the target company is acquired for cash or stock.

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Notice pursuant to Rule 206(4)-1 under the Investment Advisers Act of 1940, as amended (the "Marketing Rule")

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- An annual fee for investor relations services provided to the relevant Fund's adviser equal to (A) during the relevant Fund's investment period (the "***Investment Period***"), an amount typically ranging from 0.20% to 0.25% of the Citi Clients' aggregate capital commitments to such Fund and (B) thereafter until the final dissolution and winding up of the affairs of such Fund, an amount typically ranging from 0.20% to 0.25% of the Citi Clients' aggregate contributed capital to the Fund as determined by the relevant Fund adviser or general partner, as applicable.

In addition, Citi Clients will pay Citi or its affiliates cash compensation in connection with their investments in the Fund as follows:

- Citi Clients will pay Citi or its affiliates a one-time fee of between zero percent (0.00%) and two and three-quarters percent (2.75%) of such Citi Client's direct or indirect commitments to the Fund; and
- Citi Clients investing in a Feeder Fund advised by Citi Global Alternatives, LLC ("CGA") will bear a fee paid to CGA typically ranging between 0.00% and 0.75% per annum that will typically be based on such Citi Clients' capital commitments during the investment period of the relevant master fund and thereafter will be calculated by reference to such Citi Clients' contributed capital to the relevant Feeder Fund.

Where permitted under applicable law and regulation, Citi receives compensation with respect to certain investment products. As such, Citi has an incentive to endorse and make positive statements about the applicable investment advisers, their investment products, and their employees and affiliates. In addition, Citi has an incentive to make positive statements about the applicable investment advisers and investment products in order to maintain goodwill in connection with current and future relationships with such investment advisers, their investment products, and their employees and affiliates.

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- Citi Clients will pay Citi or its affiliates a one-time fee of between zero percent (0.00%) and two percent (2.00%) of such Citi Client's direct or indirect subscriptions to the Fund; and
- Citi Clients subscribing to a Fund advised by Citi Global Alternatives, LLC ("CGA") (a "Feeder Fund") will bear a fee paid to CGA typically ranging between 0.00% and 1.0% per annum that will typically be based on the net asset value of the Citi Clients' investment in the Feeder Fund.

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Bond credit quality ratings	Rating agencies		
Credit risk	**Moody's[1]**	**Standard and Poor's[2]**	**Fitch Ratings[2]**
Investment Grade			
Highest quality	Aaa	AAA	AAA
High quality (very strong)	Aa	AA	AA
Upper medium grade (Strong)	A	A	A
Medium grade	Baa	BBB	BBB
Not Investment Grade			
Lower medium grade (somewhat speculative)	Ba	BB	BB
Low grade (speculative)	B	B	B
Poor quality (may default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	D	C
In default	C	D	D

1 The ratings from Aa to Ca by Moody's may be modified by the addition of a 1, 2, or 3 to show relative standing within the category.
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- lack of liquidity in that there may be no secondary market for the fund and none is expected to develop;
- volatility of returns;
- restrictions on transferring interests in the fund;
- potential lack of diversification and resulting higher risk due to concentration of trading authority when a single advisor is utilized;
- absence of information regarding valuations and pricing;
- complex tax structures and delays in tax reporting;
- less regulation and higher fees than mutual funds; and
- manager risk.

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