

SECOND QUARTER 2023

Quarterly Alternatives Commentary

Alternatives Dashboard

Private Markets	QTD (%)	YTD (%)	1Y (%)	5Y (%)
Preqin Private Capital – North America	0.56	0.56	(1.24)	14.42
Preqin Private Capital – Europe	2.22	2.22	(0.05)	13.10
Preqin Private Capital – Asia	0.04	0.04	(2.70)	8.06
Marketable Alternatives	QTD (%)	YTD (%)	1Y (%)	5Y (%)
Wilshire Liquid Alternative Index SM	1.38	2.60	2.46	1.66
HFRI Fund Weighted Composite Index	2.18	3.39	5.02	4.97

Sources: Bloomberg, HFR. Index returns are net total returns as of June 30, 2023. Preqin returns are net total return as of March 31, 2023. Past performance is not indicative of future results or a guarantee of future returns.

Quarterly Insights

Global economic growth forecasts have become increasingly uncertain, particularly in the United States, where investors are beginning to question the surety of a recession in 2023. We are witnessing a gradual decline in global economic growth and while recent economic data has surprised to the upside, the outlook nonetheless remains unclear. Persistently tight financial conditions may lead to additional fractures in the financial system, which fuels growing concerns of a potential monetary policy mistake. Fortunately, recent measures of inflation indicate some moderation, and while the labor market remains tight, a softening in prices may give central banks latitude to finally halt their aggressive path higher in interest rates.

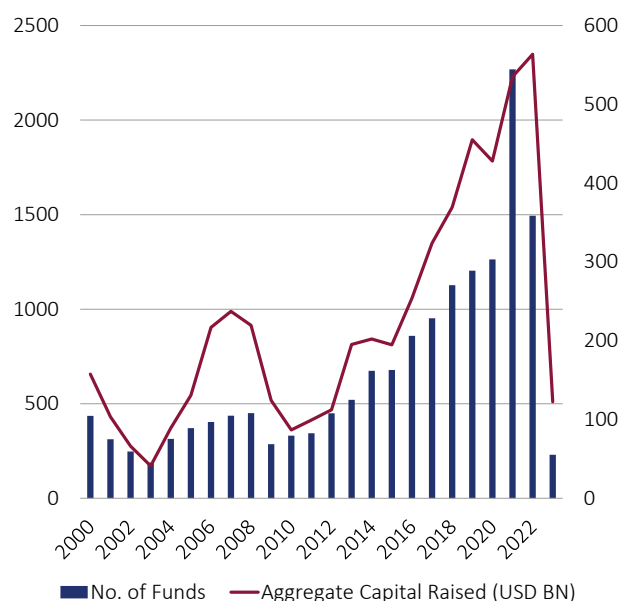
Given the growing uncertainty surrounding the economy, monetary policy, and the fragile geopolitical backdrop, we believe that a potential credit crunch has emerged as the primary risk facing global economies as the lagging impacts of tight monetary policy begin to weigh on the ability of borrowers to meet their debt obligations across various segments of the global economy.

Higher rates and slowing growth may challenge highly levered balance sheets to the benefit of special situations buyout and credit managers

Marketable alternatives lifted by supportive equity markets, macro strategies, claw back first quarter losses

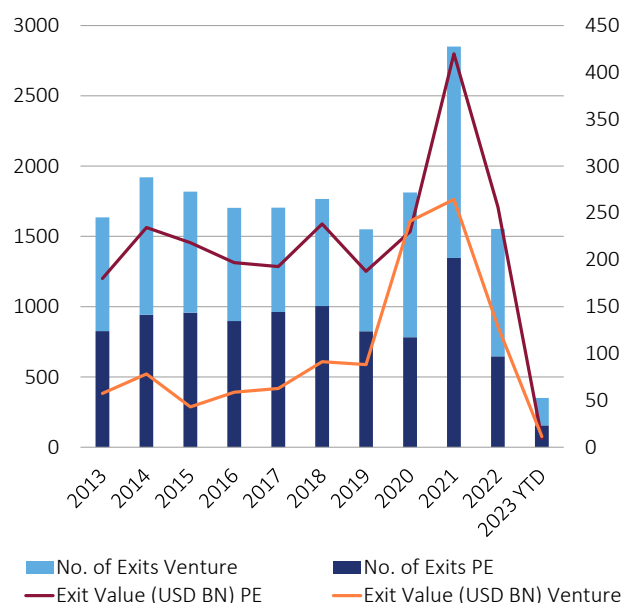
North America

North American Fundraising



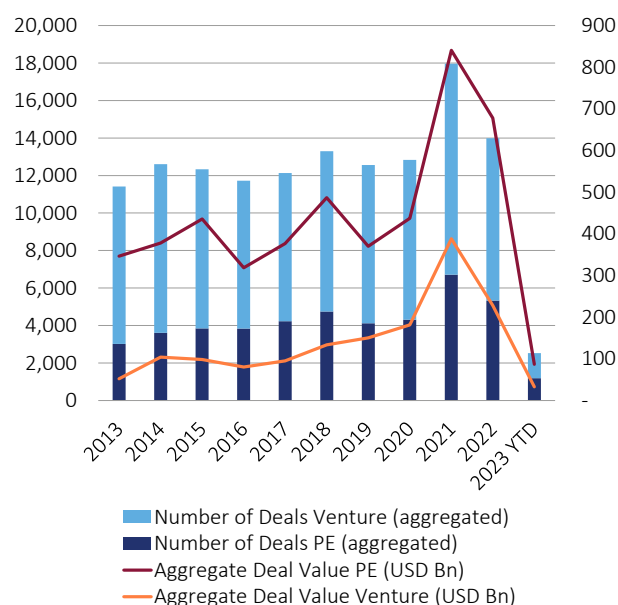
Source: Pitchbook. For illustrative purposes only.

North American Exit Activity



Source: Pitchbook. For illustrative purposes only.

North American Investment Activity



Source: Pitchbook. For illustrative purposes only.

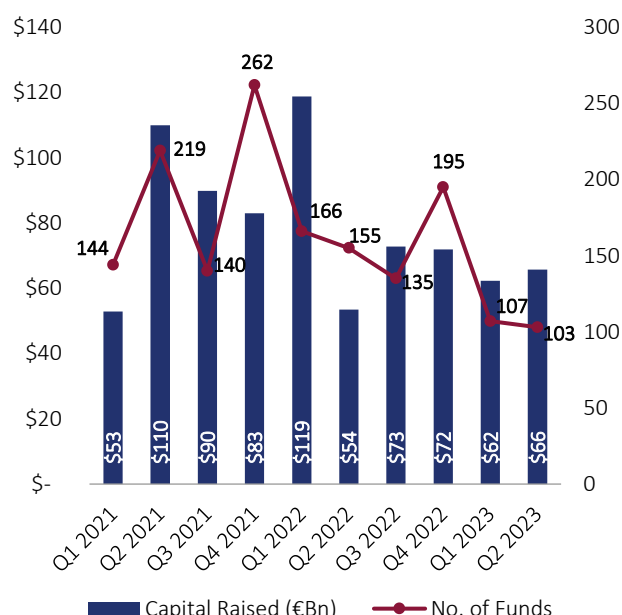
Fundraising in North America slowed during the second quarter as 296 private equity funds secured a total of \$97.0 billion, compared to 279 funds raising \$136.6 billion in the first quarter of 2023. The largest funds to close during the quarter include TA XV (\$16.5 billion), Genstar Capital Partners XI (\$12.6 billion) and MED Platform II (\$3.8 billion).

Aggregate buyout deal value increased in the quarter by 14.2% to \$111.7 billion from \$97.8 billion in Q1 2023. Deal value was driven by the \$7.1 billion secondary buyout of Syneos Health by Elliott Management, Veritas Capital and Patient Square Capital, and the \$4.3 billion corporate carveout of Baxter International BioPharma Solutions by Advent International. During the quarter 1,512 venture deals closed, valued at \$28.4 billion in aggregate value.

North America saw 188 private-equity buyout-backed exits valued at \$55.6 billion and 184 venture-backed exits valued at \$31.6 billion in Q2 2023.

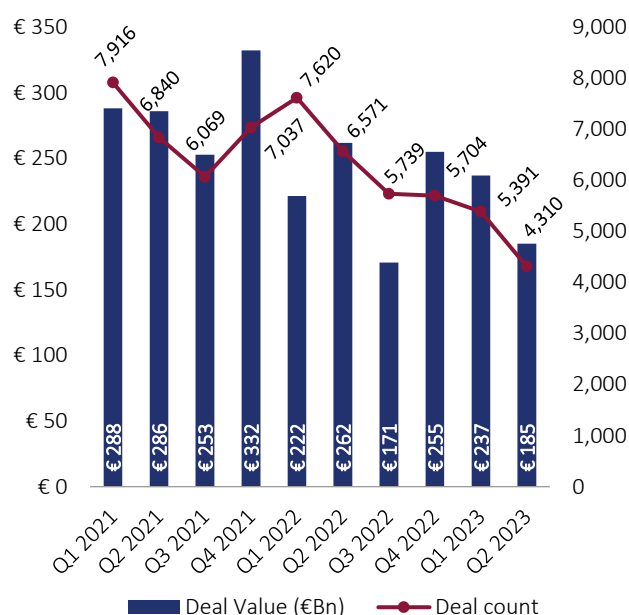
Europe

European Fundraising



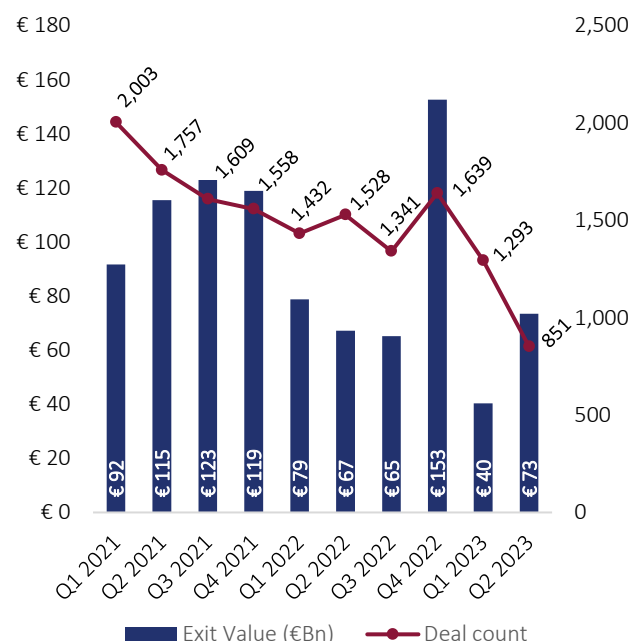
Source: Pitchbook. For Illustrative purposes only.

European Investment Activity



Source: Pitchbook. For Illustrative purposes only.

European Exit Activity



Source: Pitchbook. For Illustrative purposes only.

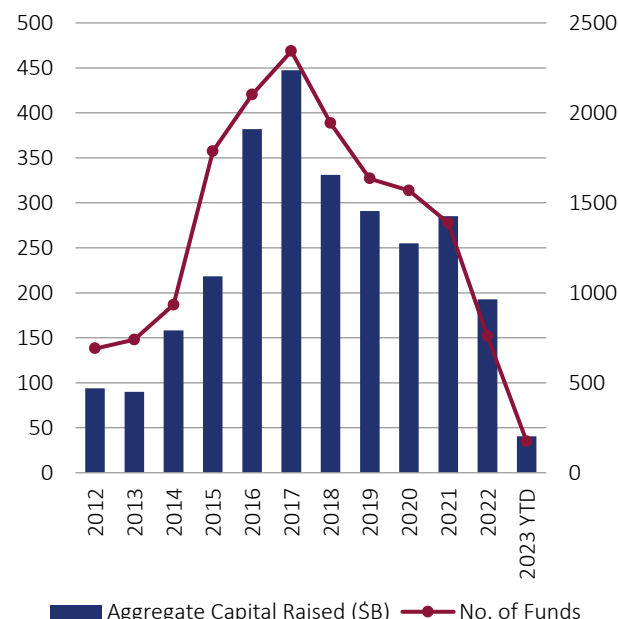
During the second quarter of 2023, European private markets funds raised \$66 billion, which represents an increase of 5% relative to the \$62 billion raised in the first quarter.

European venture capital fundraising has picked up recently, with €12.6 billion raised in the second quarter, almost double the amount raised in Q1 2023.

Having peaked in Q4 2021, European private equity (PE) dealmaking continued to slow down in the second quarter as the current macro headwinds continue to impact the industry with the quarter seeing €185 billion in deal value. European PE exit activity picked up slightly in Q2 2023 at €73 billion, however is still significantly below the highs of 2021 and 2022. Exits consisted largely of strategic acquisitions as opposed to IPOs and buyouts in the quarter.

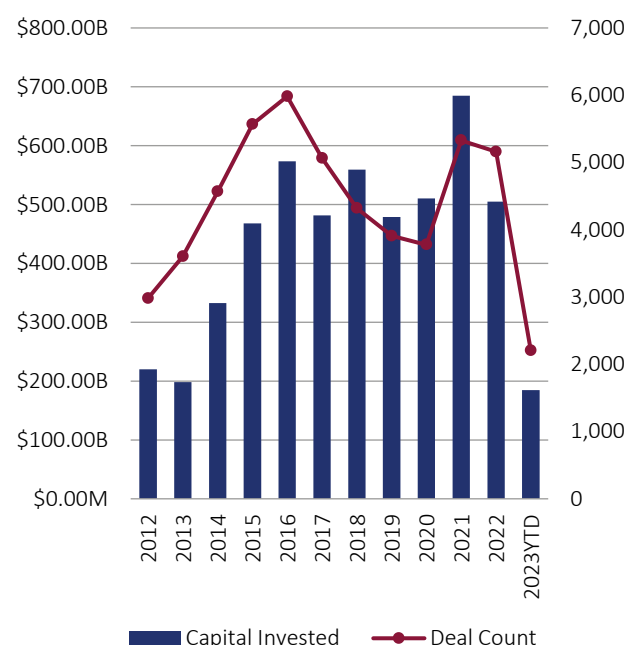
Asia-Pacific

Asia-Pacific Fundraising



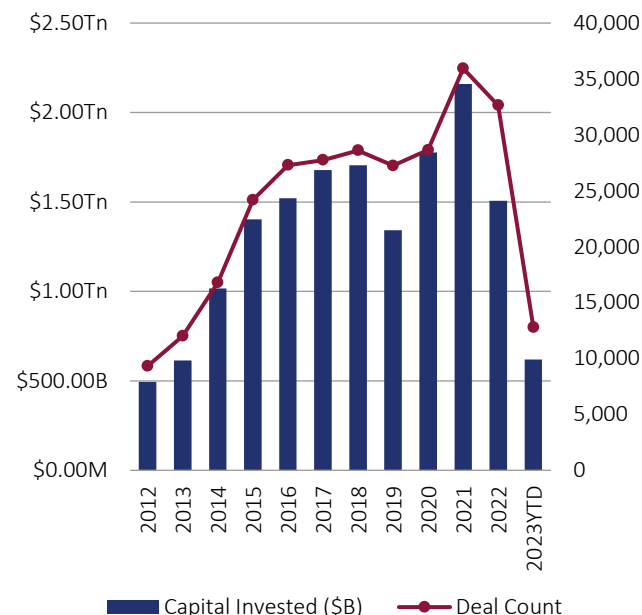
Source: Pitchbook. For illustrative purposes only.

Asia-Pacific Exit Activity



Source: Pitchbook. For illustrative purposes only.

Asia-Pacific Investment Activity



Source: Pitchbook. For illustrative purposes only.

Fundraising activity has significantly slowed in the past few years due to the impact of COVID-19 and global geopolitical tensions, and has yet to rebound in the first half of 2023, with 173 funds raising \$233.3 billion. Notable successful fund closings in the quarter include Primavera Capital Fund IV (\$4.0 billion) and Gateway Real Estate Fund VII (\$2.0 billion).

Similarly, slowing investment activity in 2022 did not pick up in the first half of 2023. The aggregate value of investment activity in the first half was \$618.9 billion (12,758 investments), which represents less than half of the \$1.5 trillion total activity in 2022 (32,636 investments).

Likewise in exit activity, the aggregate value of exits in the first half was \$184.7 billion (2,202 exits), which represents a significant decline compared to \$505.0 billion exit activity in calendar year 2022 (5,160 exits).

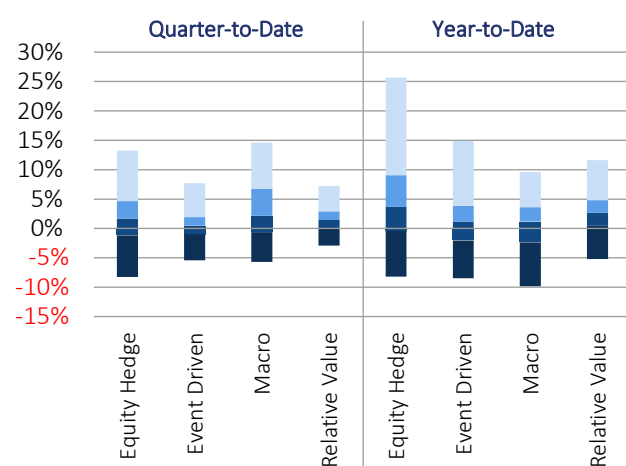
Marketable Alternatives

Hedge fund sector performance

Marketable Alternatives	QTD (%)	YTD (%)	1Y (%)	5Y (%)
Wilshire Liquid Alternative Equity Hedge Index SM	3.66	6.20	7.60	3.61
HFRI Equity Hedge (Total) Index	3.09	5.68	7.61	5.47
Wilshire Liquid Alternative Event Driven Index SM	(0.22)	0.20	1.39	1.79
HFRI Event-Driven (Total) Index	1.06	2.46	5.27	4.31
Wilshire Liquid Alternative Global Macro Index SM	3.22	0.51	(1.18)	3.55
HFRI Macro (Total) Index	1.66	(0.81)	(0.39)	4.99
Wilshire Liquid Alternative Relative Value Index SM	(0.19)	1.34	0.29	0.35
HFRI Relative Value (Total) Index	1.16	2.52	4.03	3.56

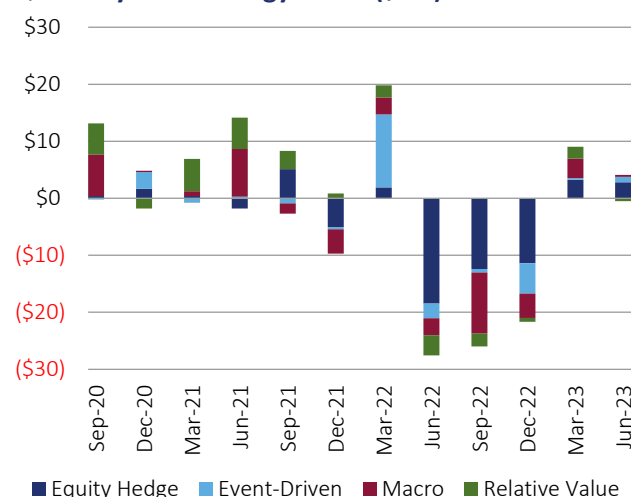
Source: Bloomberg, HFR. Index returns are net total return as of June 30, 2023. Past performance is not indicative of future results or a guarantee of future returns.

Performance Dispersion by Sub-Strategy



Source: HFR. As of June 30, 2023. For illustrative purposes only.

Quarterly Sub-Strategy Flows (\$BN)



Source: HFR. As of June 30, 2023. For illustrative purposes only.

Marketable alternatives generated positive returns across most strategies, led by equity hedge and macro managers, though more-liquid event driven and relative value strategies were marginally down for the quarter.

Equity hedge managers again posted the strongest performance in the second quarter as equities largely rallied due to an expected earnings season and improving sentiment. Asia-focused managers generally lagged as Chinese equities have lagged developed markets. Event-driven managers' performance was more mixed with more-liquid managers finishing on the wrong side of flat. Merger arbitrage managers struggled in April and May due to widening spreads and issues around notable deals such as Horizon Pharma/Amgen and First Horizon/Toronto Dominion.

Macro strategies had a positive quarter, with more muted performance from hedge fund structures versus more-liquid peers. Trend followers performed relatively well due to long positions in equity indices, and shorts in the Yen, various commodities and fixed income. Broadening out to other macro strategies, long EM debt positions profited, whereas curve steepeners struggled. Relative value strategies were generally positive, with all hedge fund sub-strategies performing positively and led by fixed income arbitrage strategies. More-liquid structures underperformed likely due to headwinds in bond markets.

Flows were positive in the first two quarters of 2023 for the first time since 2021, with net flows totalling over \$12 billion year-to-date. Equity hedge managers account for nearly half of the inflows, followed by macro managers.

Index Definitions

Wilshire Liquid Alternative IndexSM

The Wilshire Liquid Alternative IndexSM measures the collective performance of the five Wilshire Liquid Alternative strategies that make up the Wilshire Liquid Alternative Universe. Created in 2014, with a set of time series of data beginning on December 31, 1999, the Wilshire Liquid Alternative Index (WLIQA) is designed to provide a broad measure of the liquid alternative market by combining the performance of the Wilshire Liquid Alternative Equity Hedge Index (WLIQAEH), Wilshire Liquid Alternative Global Macro Index (WLIQAGM), Wilshire Liquid Alternative Relative Value Index (WLIQARV), Wilshire Liquid Alternative Multi-Strategy Index (WLIQAMS), and Wilshire Liquid Alternative Event Driven Index (WLIQAED). Its objective is to provide a representative baseline for how the liquid alternative investment category performs as a whole.

Wilshire Liquid Alternative Equity Hedge IndexSM

The Wilshire Liquid Alternative Equity Hedge IndexSM measures the performance of the equity hedge strategy component of the Wilshire Liquid Alternative Index. Equity hedge investment strategies predominantly invest in long and short equities. Its objective is to provide a broad measure of the equity hedge sub-strategy of the liquid alternative market.

Wilshire Liquid Alternative Event Driven IndexSM

The Wilshire Liquid Alternative Event Driven IndexSM measures the performance of the event driven strategy component of the Wilshire Liquid Alternative Index. Event driven strategies predominantly invest in companies involved in corporate transactions such as mergers, restructuring, distressed, buy backs, or other capital structure changes. Its objective is to provide a broad measure of the event driven sub-strategy of the liquid alternative market.

Wilshire Liquid Alternative Global Macro IndexSM

The Wilshire Liquid Alternative Global Macro IndexSM measures the performance of the global macro strategy component of the Wilshire Liquid Alternative Index. Global macro strategies predominantly invest in situations driven by the macro-economic environment across the capital structure as well as currencies and commodities. Its objective is to provide a broad measure of the global macro sub-strategy of the liquid alternative market.

Wilshire Liquid Alternative Relative Value IndexSM

The Wilshire Liquid Alternative Relative Value IndexSM measures the performance of the relative value strategy component of the Wilshire Liquid Alternative Index. Relative value strategies are focused on the valuation discrepancy in the relationships between markets or securities. Its objective is to provide a broad measure of the relative value sub-strategy of the liquid alternative market.

Wilshire Liquid Alternative Multi-Strategy IndexSM

The Wilshire Liquid Alternative Multi-Strategy IndexSM measures the performance of the multi-strategy strategy component of the Wilshire Liquid Alternative Index. Multi-strategy strategies invest in multiple alternative managers/fund of funds and replication strategies. Its objective is to provide a broad measure of the multi-strategy sub-strategy of the liquid alternative market.

HFRI Fund Weighted Composite Index

The HFRI Fund Weighted Composite Index is a global, equal-weighted index of single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in U.S. Dollar and have a minimum of \$50 million under management or \$10 million under management and a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

HFRI Equity Hedge (Total) Index

Equity Hedge: Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short.

HFRI Event-Driven (Total) Index

Event-Driven: Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional derivative securities. Event Driven exposure includes a combination of sensitivities to

equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

HFRI Macro (Total) Index

Macro: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposed to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

HFRI Relative Value (Total) Index

Investment Managers who maintain 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. Fixed income 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. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

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