STATE STREET

# Performance for Private Markets and Derivatives

May 21, 2025

# Agenda

- Trends in private markets
- Methodologies & Benchmarking
- Private markets approaches by sub-asset class
- Derivatives
- The Next Frontier (what's next)

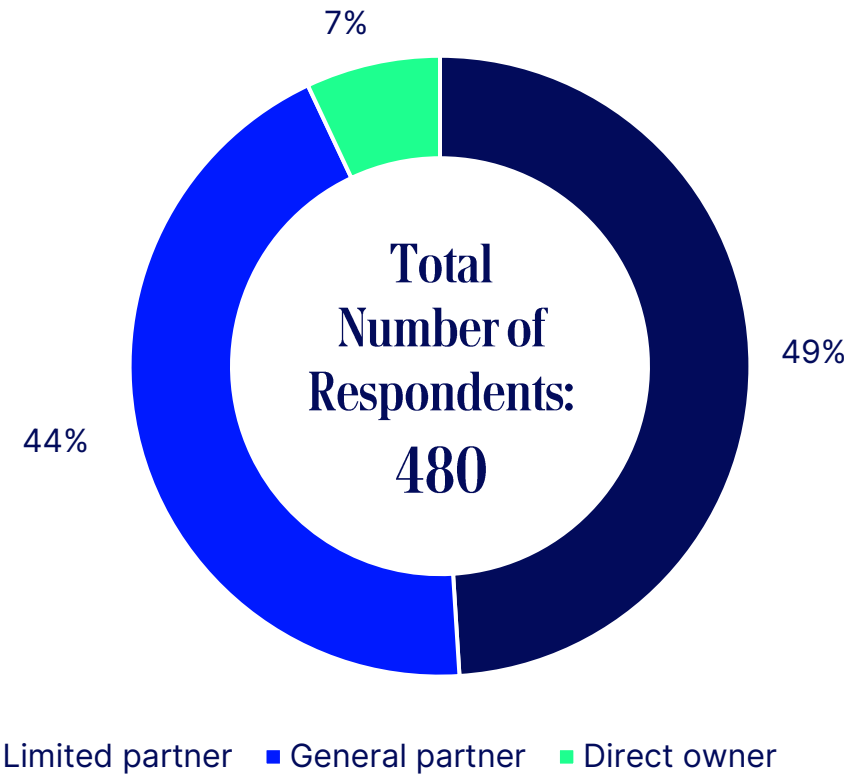
# Private Markets

# The convergence of private and public markets have driven a need for consistency and transparency while balancing asset class specific approaches

# Survey Demographics

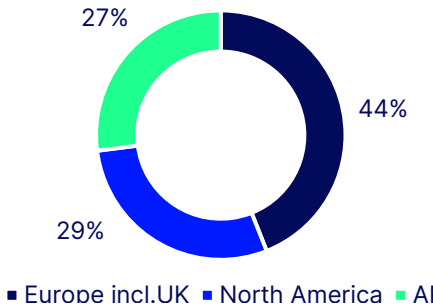
## We asked our clients about asset allocation in Private Markets.

### How does your organisation invest in private markets asset?

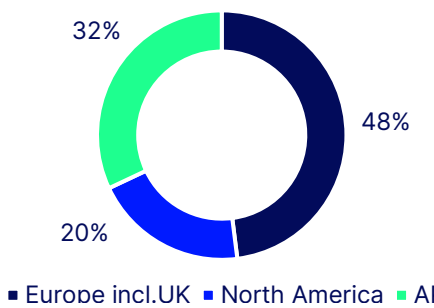



### Breakdown by region

#### Limited Partners and Direct Owners

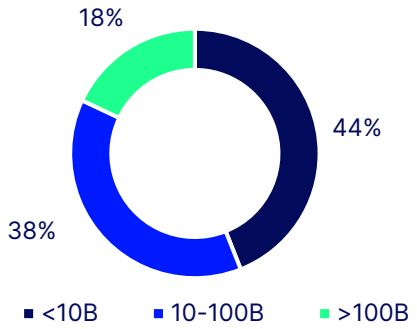



#### General Partners

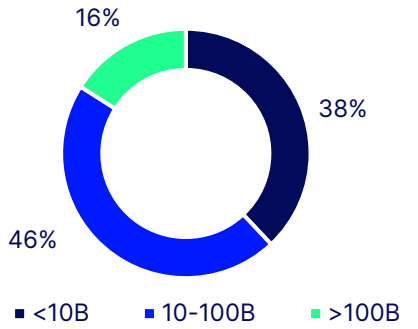



### AUM (asset under management)

#### Limited Partners and Direct Owners




#### General Partners





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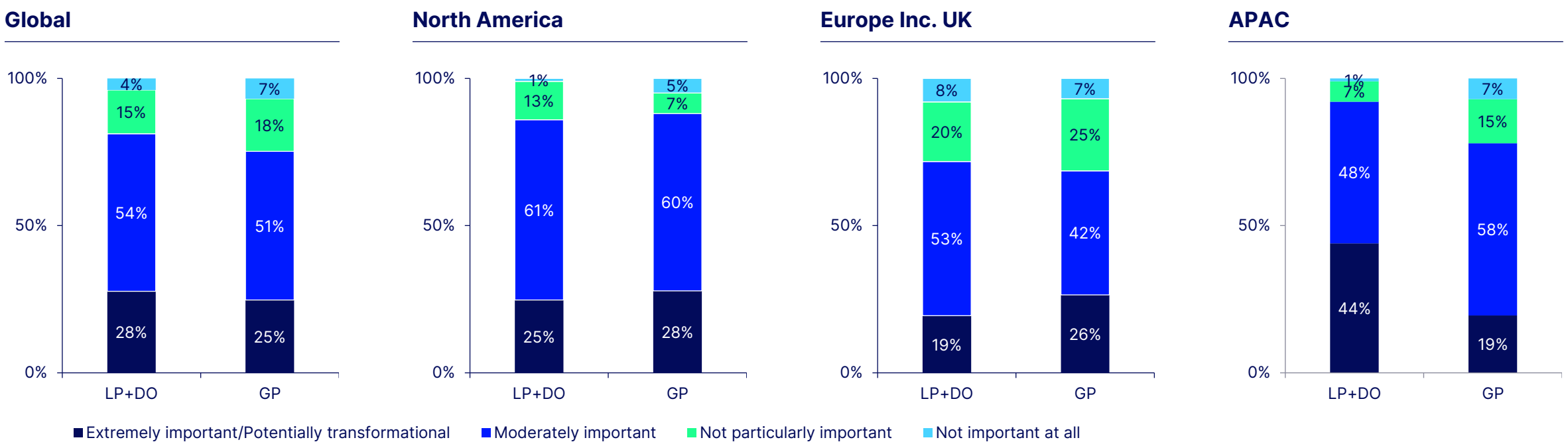
# Consistency: Over 80% of respondents consider bringing total portfolio (public and private) data together for portfolio level analytics as important to potentially transformational

## Considerably higher share of LPs in APAC consider total portfolio data potentially transformational

**Capacity to view, manage, and analyze all essential data in one place, across all its private and public market positions**

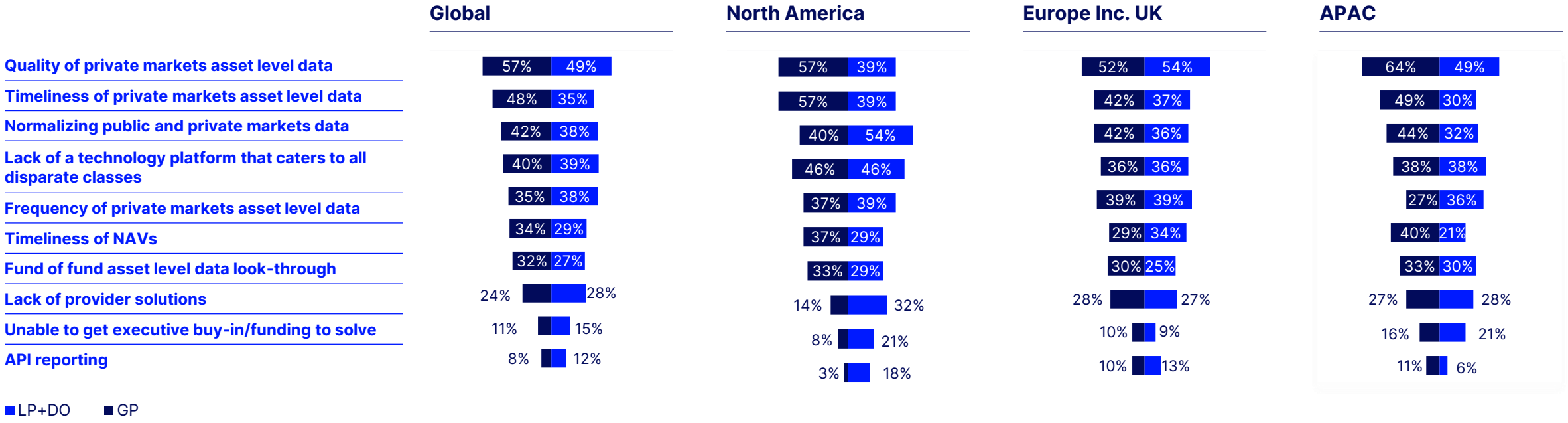



Q19. How important is it for your organization to have the capacity to view, manage, and analyze all essential data in one place, across all its private markets positions, alongside its other public securities and holdings?

# Transparency: Quality of private markets asset level data is the main concern in achieving total portfolio (public and private) data together for portfolio level analytics, across regions and investment groups except GPs in North America

## GPs in North America are concerned about normalizing public and private markets data. Over a quarter of respondents in APAC and Europe claim lack of solutions as a key hurdle

**Biggest challenge in achieving the ability to view, manage, and analyze all essential data in one place, across all its private and public market positions**




Q20. What is your organisation's biggest challenge in achieving the ability to view, manage and analyse all asset level data in one place, across all private markets positions, alongside public securities and holdings?





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# IRR or TWR... The case for both

**The perennial battle of the Internal Rate of Return (IRR) vs. the Time Weighted Return (TWR) is a tie for private markets' performance as each has it uses based on audience and type of funds.**

## Benefits and uses of IRR

- Appropriate when GP controls cash flows
- Preferred Measure for close-ended funds
- Accommodates less frequent valuations

## Benefits and uses of TWR

- Aligns with the methodology of public markets and provides a holistic consistent methodology
- Preferred measure for open-ended real estate funds
- Eliminates the impact of (generally client-driven) cash flows
- Reflects the manager's ability to execute on a strategy
- Well known real estate benchmarks use this methodology

# Benchmarking — Market based vs. Universe based

## Market-based

**Public, broad-market index, with or without an illiquidity premium expected from an alternative asset**

**Strengths:**

- Investable
- Long term strategy alignment
- Timeliness
- Accuracy and representativeness

**Weaknesses:**

- May not represent the alternative strategy it is being measured against.

**Alternatives: Proxy benchmark**

## Universe-based/Peer group

**Uses a group of similar alternative investments to provide a peer comparison for the asset type**

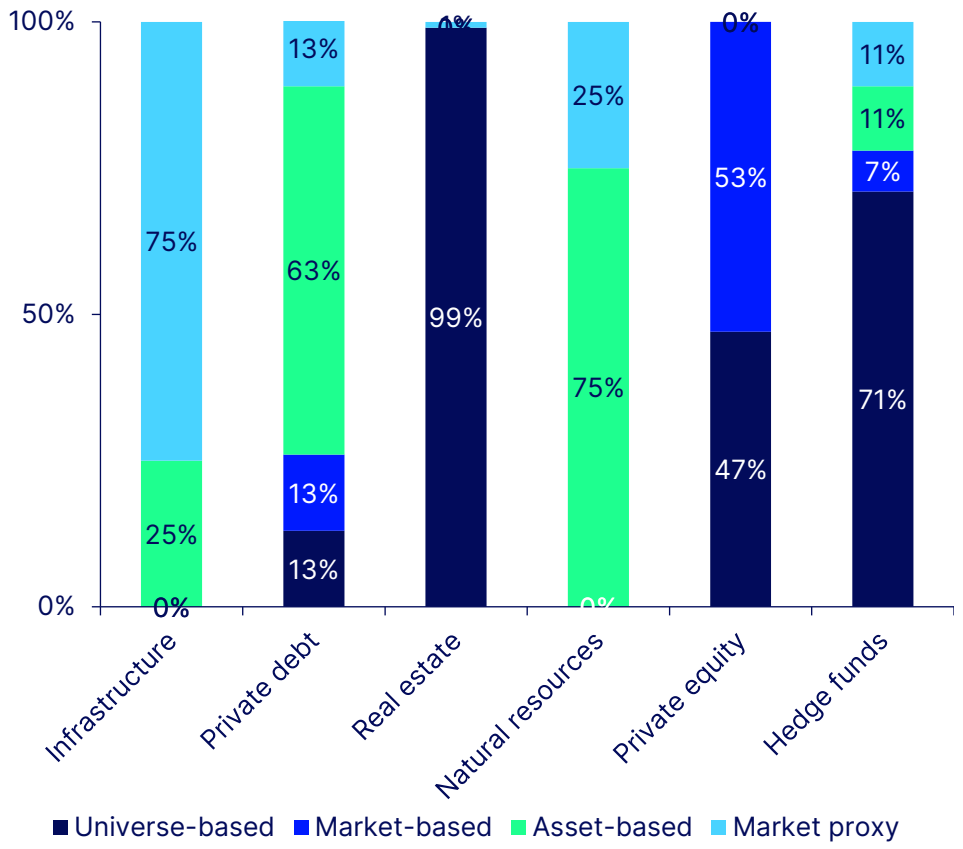
**Strengths:**

- Consistency with manager's style
- Better comparative analysis insights
- Alignment with the manager's risk profile
- Confidence in the index vendor

**Weaknesses:**

- Potential biases: selection bias, survivorship and reporting bias, backfill bias.

**Alternatives: Asset based**




Source: State Street Asset Owner Benchmark uses survey

# Private credit

**Funds:** Debt of strategically selected companies. Managers engage directly with small to medium-sized enterprises that require customized financing solutions, as well as with larger corporations that need quick and flexible funding.

**Direct Lending:** Origination of loans to corporate borrowers that are not widely syndicated, typically involving unrated issues from small to midsized firms. Loans can be structured in various formats, often with interest rates that are a spread or margin above a floating reference rate.

## Input data required

- Market values, transactions, income, fees, and accruals in both base and local currencies
- Data must be recorded at the most detailed investment level

## Performance

- Private asset classes usually employ IRR because valuations are infrequent
- IRR over various periods, insights into underlying holdings, tracking unfunded commitments, and metrics for drawdowns

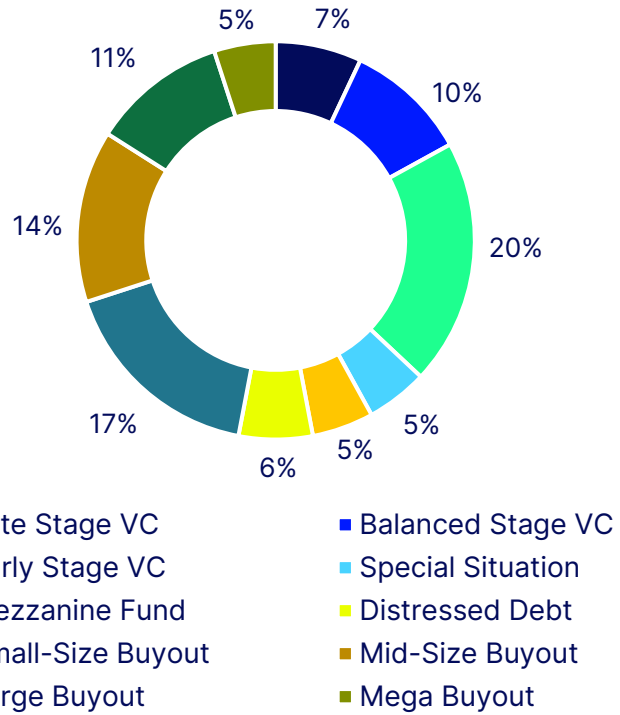
## Analytics requirements

- Portfolio analysis for Direct Lending by strategy, asset type, sectors, and geographic regions
- Syndicated loans are treated as tradable assets, with TWRs applicable

# Private equity

**Purpose:** deliver long-term value creation by investing in private companies or assets that are not publicly traded.
This asset class offers diverse strategies, each tailored to specific investment goals, risk profiles, and market opportunities.

**Primary types:** Buyout Strategies (LBOs, and MBOs); Growth Equity Strategies; Venture Capital; Distressed/Turnaround Strategies; Real Assets Strategies; Fund of Funds




Source: State Street Global Markets as of 2024 Q3

## Performance

- IRR because valuations are infrequent
- IRR over various periods, insights into underlying companies, unfunded commitments, and metrics for drawdowns
- Multiples (TVPI, DPI, RVPI, MOIC, PIC)
- TWR based on accounting book, GP-stated and daily cash adjusted

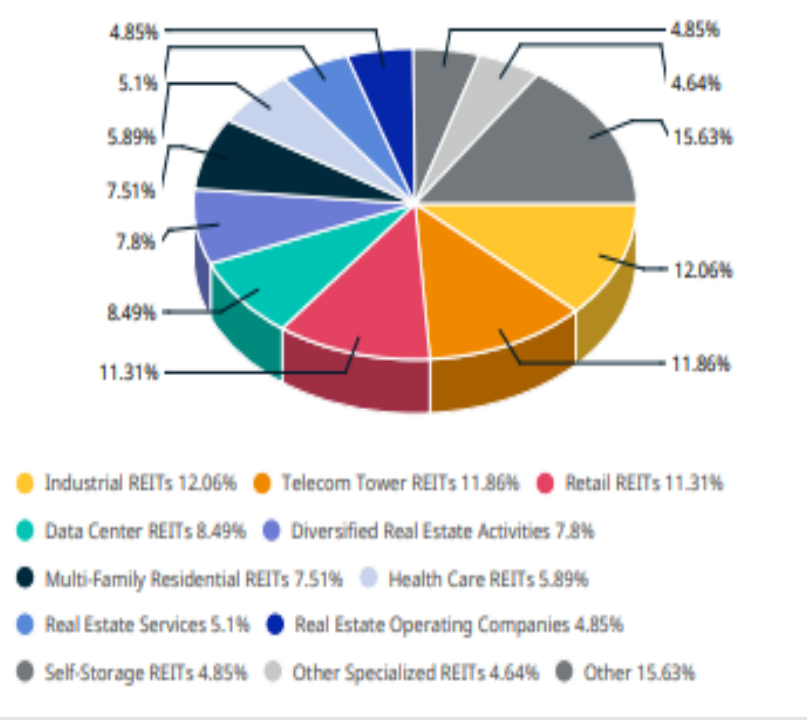
## Analytics requirements

- Portfolio analysis by vintage year, manager, strategy sectors, geographic regions and user defined characteristics
- Public Market Equivalent (PMEs)
- Detailed fee analysis based on ILPA template
- Waterfall Analysis
- J curve analysis
- Cash flow pacing and Forecasting
- Portfolio company exposure analysis

# Real assets

**Purpose:** Investments in tangible assets that generate stable cash flows with a focus on long term yield, inflation protection and capital appreciation.

**Primary strategies:** Real estate (core, core plus, value-add, opportunistic), infrastructure (core, core plus, value add, greenfield), natural resources (agriculture and timber, energy assets, mining and metals), other tangible assets.




Source: MSCI World Real Estate Index

## Performance

- Time Weighted Return (TWR): Modified Dietz Methodology quarterly measurement period accounting for sub periods between cash flows
- Component Returns: Income Return and Change in capital Value
- IRR and equity multiples are used for closed end funds
- Additional metrics: Net Operating Income; Capitalization Rate; Leveraged/Unleveraged Return; Forecasted IRR Multiple; Realized Returns; Deemed Returns

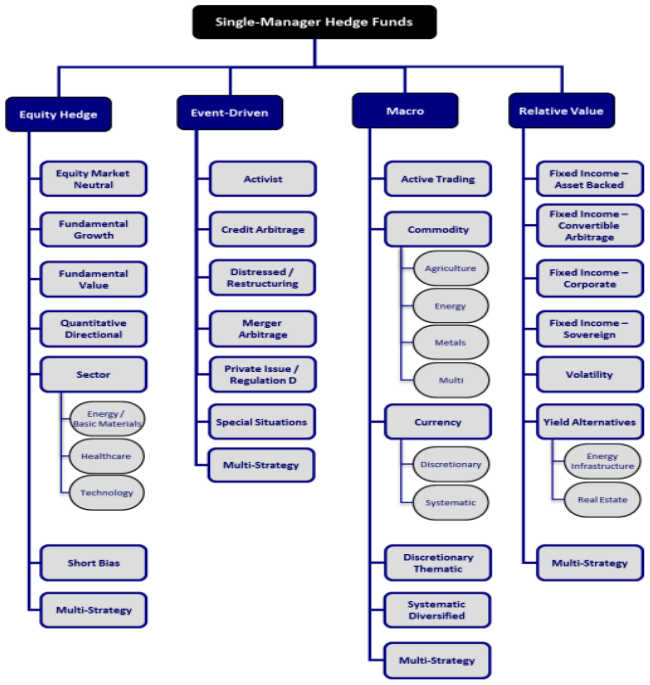
## Analytics requirements

- Absolute/Contribution Attribution: Exposure by different factors and their contribution to fund performance.
- Brinson Fachler relative attribution can be performed by property type (e.g. office, retail, residential) or geography (regions or cities)
- Operational KPIs: occupancy rates (property and tenant level), traffic volume (for toll roads, or energy output (for renewable projects)
- Liquidity Management
- Stress testing and scenario modelling

# Hedge funds

**Purpose:** Realize return regardless of the state of the market with a range of strategies to generate alpha, manage risk and achieve investment objectives across market conditions.

**Primary strategies:** Equity strategies (Long/Short, Market neutral), Event-Driven strategies (Merger Arbitrage, Distressed Debt), Macro Strategies (Global Macro, Managed Futures), Relative Value strategies (Fixed Income Arbitrage, Convertible Arbitrage), Multi-Strategy.




Source: HFRI Hedge Fund Indices

## Performance

- Time Weighted Returns
- Transparent performance metrics, absolute and relative
- Risk-adjusted performance

## Analytics requirements

- Liquidity management with redemption tracking at all levels of the capital structure (GP) and visibility into fees, penalties, gates, and holdbacks with projections (Asset owners)
- Volatility and drawdowns
- Ex-post risk attribution to identify performance drivers (Beta, Alpha, Standard Deviation, Sharpe Ratio, Information Ratio, Sortino Ratio, Skewness and kurtosis)
- Ex-ante risk: stress testing and scenario modeling, sensitivity analysis, predictive tools

# Derivatives

# Broad usage of derivatives for investment exposure and hedging drive the need for more transparent exposure related analysis

# Futures

**Futures provide symmetric exposure to an asset class and can be used to replicate exposure or as an overlay or hedge. Futures are standardized and traded on exchanges with daily gains and losses realized daily through settlement cash flows.**

## Exposure

- Contract Quantity x Contract Size x Futures Price
- Market value not adjusted for exposure is equal to the daily gain/loss at close which will settle the following day, also known as margin variation

## Methodology

- Daily P&L is consistent regardless of notional approach
- Value the notional exposure and create an offsetting valued leg to ensure portfolio market value rollups are accurate
- Attribute cash income to the notional offset to align with the financing input into futures pricing, Feibel (2021)
- Rollup exposure leg with the assets in the portfolio enabling benchmark relative analysis with or without cash impact

## Considerations

- Align notional offsets with investment strategy, often classified as cash within the portfolio
- When using futures for duration exposure adjustments in fixed income portfolios, you can adopt Campisi (2000) attribution approach
- Differing treatments for hedges versus investment exposure
- Equitizing cash drag

# Currency forwards

**Forward contracts are agreements to buy or sell a currency at a future date at a predetermined rate. Forwards are customized and traded over-the-counter (OTC). Cash flows occur at settlement, requiring discounting for valuation.**

## Exposure

- Both the long and short leg are reported at their respective notional value, which remains constant until the contract is settled.
- Exposure (local) = Contract Quantity x Contract Price x Contract Size
- Exposure (base) = Contract Quantity x Contract Price x Contract Size/Forward Rate
- Contract price = Forward exchange rate at maturity between the currencies

## Methodology

- Daily P&L calculated from movement in forward rates
- Similar to how we allocate the two legs of a futures contract to the relevant asset classes, we look at the two legs of currency forwards when analyzing returns by currency
- When performing attribution, look at hedged and unhedged exposures and returns to derive major contributors in the portfolios excess return, many use the Karnosky-Singer (1994) multi-currency approach

## Considerations

- Rolling up currency exposure, currency pairs, maturity dates, etc.
- Hedging versus currency strategy will drive rollup approach in aggregation with underlying investments
- Hedging is sometimes done at a program level, not within the investment portfolio, introducing challenges with strategy alignment and allocation

# Swaps

**Swaps are agreements to exchange cash flows or other financial instruments between parties. Swaps are often used to manage multi-period risk. Common swap types include interest rate, credit default, total return, and currency.**

## Exposure

- Both the long and short leg are reported at their respective notional value, often aligned with portfolio accounting
- If the swap is listed as one line in portfolio accounting, the performance system will need to split apart into two distinct securities

## Methodology

- Each leg will have its own return representing the asset or rate exposure and financing legs
- Similar to how we allocate the two legs of a futures contract to the relevant asset classes, we look at the two legs of the swaps with the relevant portfolio segments
- Calculate performance rollups and attribution across portfolio segments

## Considerations

- As always, align the attribution methodology with the portfolio managers strategy
- Credit default swaps have different considerations given the inputs into the security price, which include firm's performance, macroeconomic conditions, volatility, leverage, and others

# Options

**Options are contracts that give the right, but not the obligation, to buy or sell an asset at a predetermined price.**

## Exposure

- Options do have an intrinsic value at inception
- Direct Method: Market values represent option exposure
- Delta-Adjusted Method: Adjust exposure using the option delta to represent exposure to underlying asset

## Methodology

- Complex options strategies are deployed to optimize risk and return, understanding the strategy will drive the approach to performance and attribution
- Strategy attribution combines multiple securities and/or transactions, this can include options, cash, and potentially other investments to measure the success of the strategy

## Considerations

- Delta-adjusting reduces the implicit leverage in an options contract and better represents the exposure to the underlying asset, providing a more accurate assessment of risk
- Gross method considers the current price of the underlying asset
- Net method considers the cost to trade the asset (strike price)
- Feibel (2021) is a nice resource with options and strategy attribution examples

# We expect a continued drive toward consistency and transparency across all asset classes to deliver actionable insights

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