Thinking Ahead Institute

Innovation conversations

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Topic: fundamental return attribution

Participants:

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Summary of talking points

The fundamental return attribution framework promotes a longer-term outlook

- Building on the institute's long horizon investing work, the framework aims at separating a strategy's returns into short-term and long-term components
- It promotes a longer-term outlook and enables an improved conversation with asset owners about the long-term return drivers of a strategy, even during periods of underperformance
- It broadens the portfolio review discussion away from an exclusive focus on short-term performance towards the asset manager's decision-making and the health of the portfolio

It is complementary to other traditional performance attribution methods

- Each performance attribution method has its own purpose and should be used appropriately in different situations. Comparing with some of the traditional method, such as the Brinson model, the fundamental return attribution framework provides an alternative lens to look at portfolio performance and gives a portfolio-level overview that is more aligned to investment decision making than other frameworks
- Pension trustees are less likely to engage in conversation on detailed Brinson type of analysis but would tend to be more interested in information helping them make hiring/firing decisions through better understanding of how an investment strategy behaves over time, and if its current behaviour remain consistent even if short-term returns are disappointing
- It is a framework for asset allocators to assess asset managers, raise questions and make decisions

Technical details and practical challenges

- In order to be practical and user friendly, the calculation method has evolved from being based on individual trades to using portfolio weights. Using monthly portfolio weights (or weekly, or quarterly) is more likely to fit into the existing data sharing workflows of asset managers, consultants, asset owners, and other service providers
- This evolved model has been simplified to be pragmatic and useful. Naturally, it would benefit from more testing under different portfolio scenarios
- The current framework has its limitation and should be used for the correct purpose. Depending on the use case it may need to be adjusted before being applied to some situations or adapted to provide meaning answers to the questions being asked

Next steps

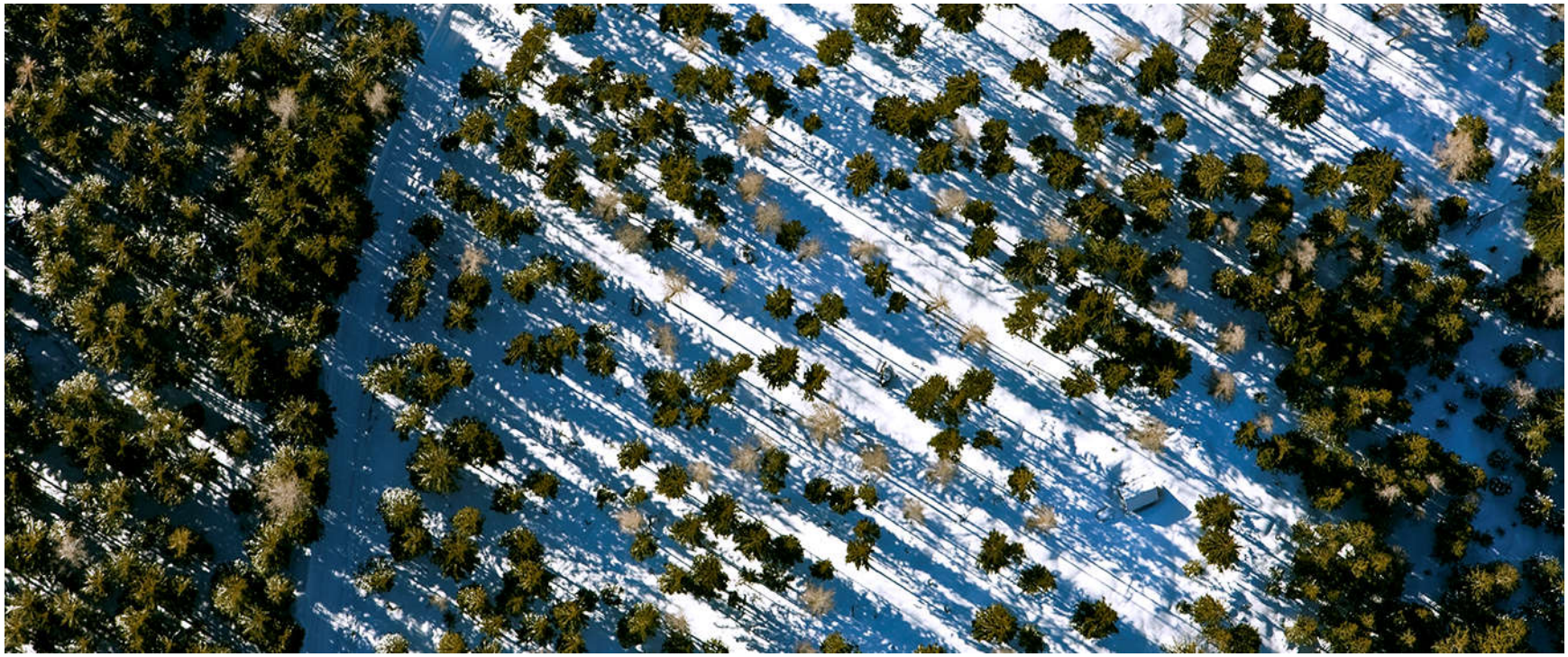
- The framework has currently only been applied to equity strategies. Extending to other asset classes seems a natural area for further development
- In addition to the standard accounting metrics that have been tested, this framework could be applied using an asset managers proprietary metrics (such as its price targets) or other metrics such as those derived from ESG-related data.
- It would be helpful if asset managers were able to run this analysis independently
- The participants discussed and expressed a desire for the framework to be “open sourced” and made available beyond the TAI membership

About the Thinking Ahead Institute

The Thinking Ahead Institute is a global not-for-profit member organisation whose aim is to influence change in the investment world for the benefit of savers. The Institute’s members comprise asset owners, investment managers and other groups that are motivated to influence the industry for the good of savers worldwide. It has over 45 members with combined responsibility for over US$12 trillion and is an outgrowth of Willis Towers Watson Investments’ Thinking Ahead Group.

Innovation conversation

Fundamental return attribution



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Improving our understanding of the drivers of past returns

Fundamental return attribution

- Once invested in an investment strategy, assets owners are faced with answering three questions (amongst others)

What was the outcome?

- Measure what has happened to our investment
- How does that outcome compare to other strategies we could have used?

Are we getting what we think we're getting?

- Assess whether the strategy is functioning as we expected
- Is the strategy changing?

Should we make a change?

- Assess whether the strategy is likely to be successful in the future
- Check whether our investment thesis remains intact

- Performance measurement is often a tool used to answer these questions. Unfortunately, its ability to provide useful answers is highly questionable
- In a high noise-to-signal environment it is more important to assess the quality of an underlying process, not its realised outcomes.
- We believe that the Fundamental Return Attribution framework more closely aligns return attribution to the underlying investment process than other approaches
- We believe this framework promotes a focus on long-term return drivers that are linked to the abilities of an asset manager rather than a focus on short-term outcomes that are more likely due to good or bad luck
- The following slides provide a brief description of the framework and how its components relate to aspects of investing that an asset manager can control through its investment decisions. A simple example of the framework demonstrates it in practice.

Attributing returns to change in fundamentals

An alternative return attribution framework

- The Fundamental Return Attribution framework separates a portfolio's returns into 3 main returns components:
  - **Multiple** – the return from the change in the market's valuation of the portfolio
  - **Growth** – the change in portfolio fundamental due to the performance of the underlying asset
  - **Activity** – the change in portfolio fundamental from changing the portfolio's holdings (both buying/selling and changes in weights)

$$R_{Portfolio} = R_{Activity} + R_{Growth} + R_{Multiple}$$

- We believe a strength of this framework is that it relates the portfolio's overall return to aspects of the underlying investment process
  - If an investment strategy is trying to own high growth companies then it would be expected to demonstrate above average Growth returns if the asset manager is successful at selecting high growth companies
  - The asset manager directly controls the buy and sell decision in the portfolio. The Activity return component measures how these decision change to the portfolio's fundamentals over time
  - In practice an investment process may effect several return components simultaneously.

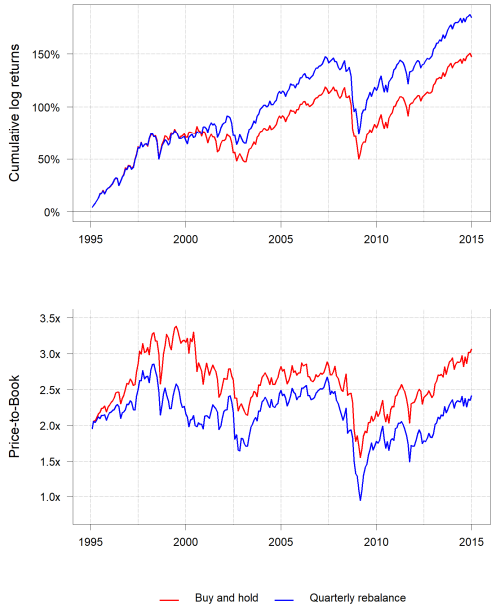
- The framework also separates the returns arising from changes in valuation. This is something that is largely outside of an asset manager's control and often dominates short-term return outcomes

- By separating noisy short-term return drivers from long-term return drivers and linking the combination of return drivers to an investment strategy's process we believe this promotes a longer-term outlook when evaluating an investment strategy.

Testing the Fundamental Return Attribution framework

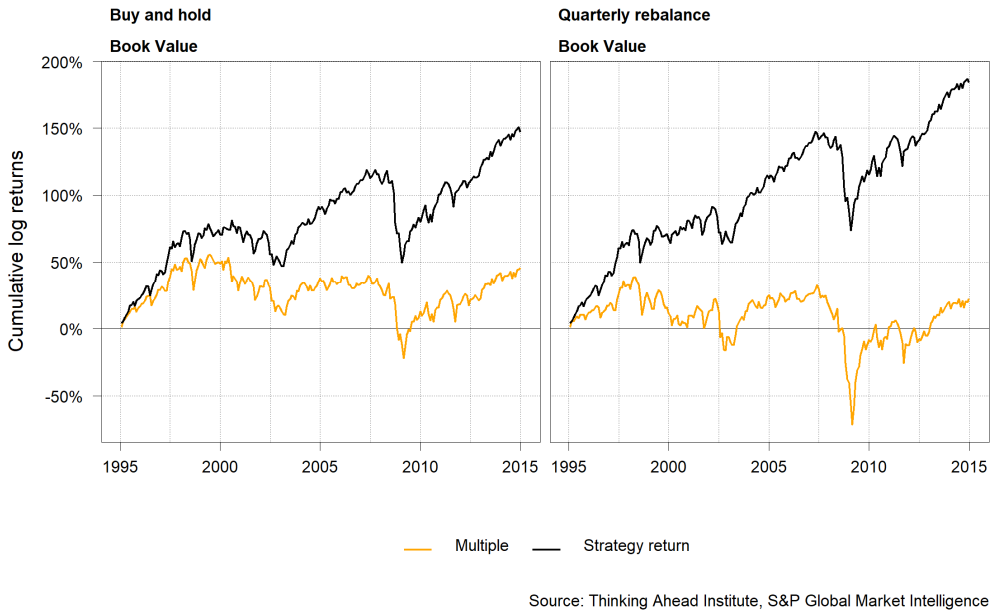
A simple test of the framework

- Compare the returns and underlying return components of two strategies:
  - buy-and-hold
  - equal weight, quarterly rebalanced
- Each strategy contains the same 250 US large cap stocks for the period 1995 to 2015. The only difference between the two strategies is the quarterly rebalancing
- This analysis is testing whether the framework can identify the difference in the return drivers of the underlying investment strategies. Both investment strategies reflect hindsight and survivorship bias in their returns.
- The charts on the right show the performance and change in valuation, based on book-value, of the two strategies. In this test we will use book-value as the framework's fundamental quantity.
- The framework can be used with other corporate fundamentals (eg. sales or cashflow) as well as other metrics
  - for example, an asset manager's proprietary estimate of intrinsic value could be used.



Source: Thinking Ahead Institute, S&P Global Market Intelligence

How much of the returns come from multiple expansion?

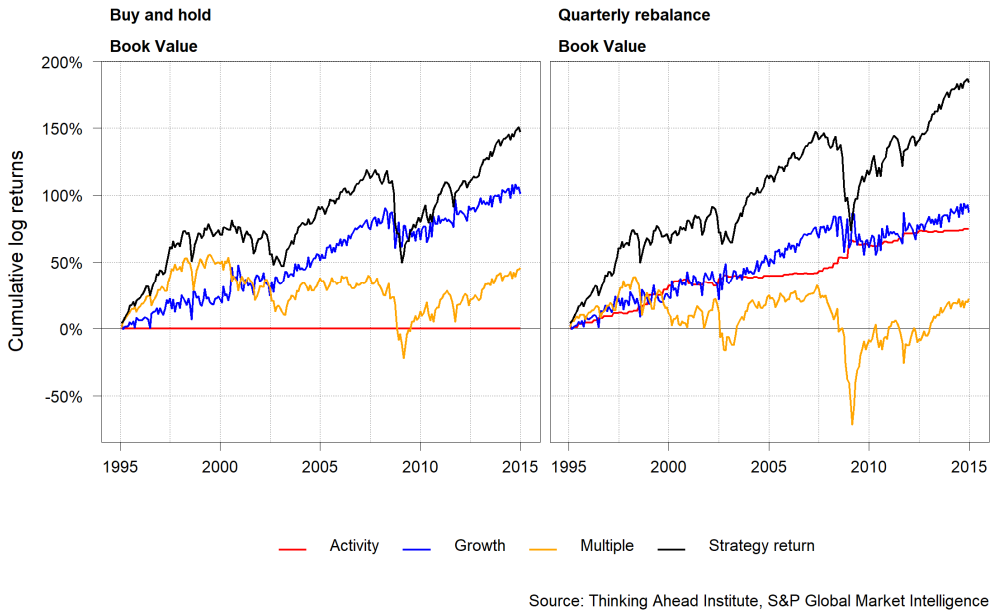


Source: Thinking Ahead Institute, S&P Global Market Intelligence

- As shown on the previous page, the quarterly rebalanced strategy outperforms the buy-and-hold strategy over the full sample
- Part of the performance of each strategy is due to the changing valuation of their portfolio. This is shown on the chart by the orange line
- Both strategies have benefited from an increase in valuation over the whole period
- The buy-and-hold strategy has been a greater beneficiary of the valuation change
- Most of both strategies' returns are not due to an increase in valuation.

Separating the returns into activity, growth and multiple return components

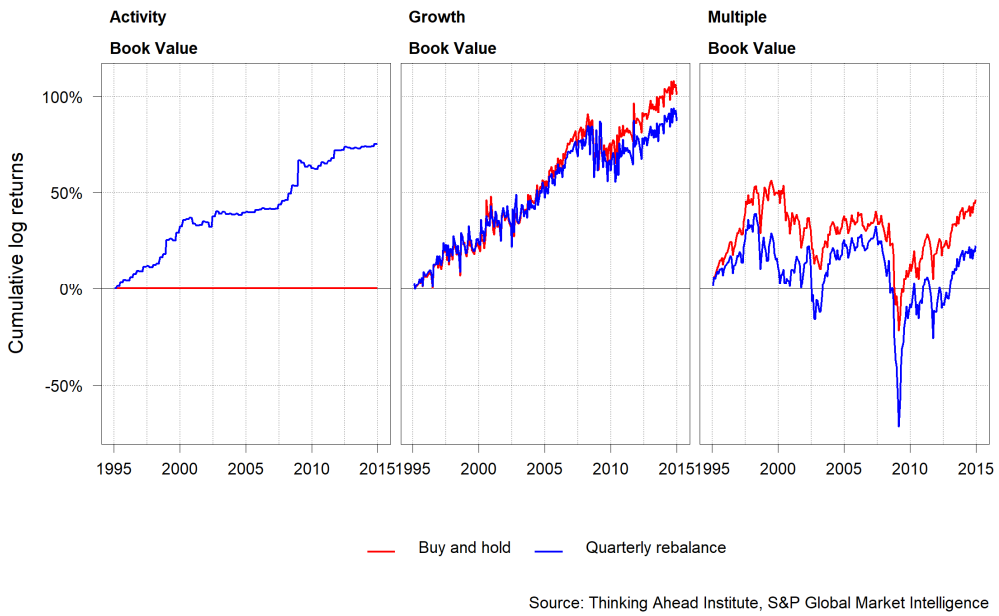
Applying the Fundamental Return Attribution framework



Source: Thinking Ahead Institute, S&P Global Market Intelligence

- The return components of Activity and Growth explain the return differences between each strategy's Multiple return and its overall return
- The chart shows that both strategies have benefitted from an increase in portfolio book-value due to the performance of the underlying stocks, represented by the positive Growth return of each strategy
- The quarterly-rebalance strategy also benefited from positive Activity return. This is the increase in book value from rebalancing the portfolio back to equal weight at the end of each quarter.

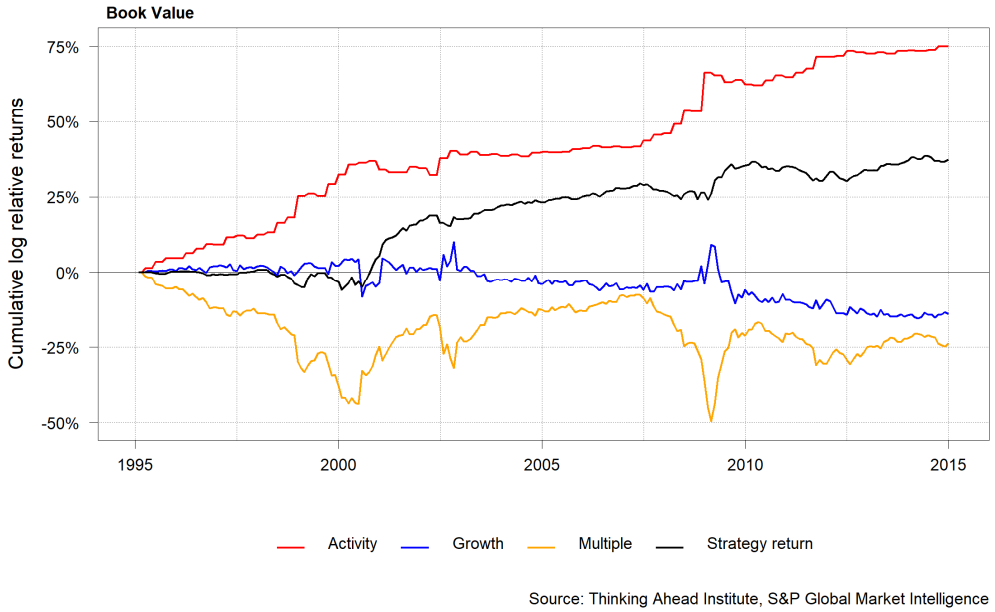
Activity return is identified as the clear positive contributor to outperformance



Source: Thinking Ahead Institute, S&P Global Market Intelligence

- Comparing the different return components highlights the similarity of the strategies (as expected) and where they differ
- The Growth return for both strategies is very similar. This makes sense as both contain the same stocks
- The Multiple returns are also very similar for both strategies
- The Activity return is the clearest difference between the two strategies. This is what we expected to observe as the buy-and-hold strategy has no activity (by design), while the quarterly-rebalance strategy's buy-low/sell-high trading pattern is book-value accretive, as shown by the rising Activity return component.

Exploring the relative returns in more detail



Source: Thinking Ahead Institute, S&P Global Market Intelligence

- Switching to the relative returns of the quarterly-rebalance strategy vs the buy-and-hold provides further insight into the difference in returns
- The Multiple relative return is negative over the whole period and appears to be the most cyclical of the three return components
- In contrast the Activity relative return shows a steady upward trend, albeit with some flat periods and jumps, notably during the GFC
- The Growth relative return seems relatively flat until the GFC, anecdotally strong growth in larger companies post-GFC fits our expectations.

Removing short-term noise and focusing on long-term signal is possible but not easy

- Return measurement and assessment will continue to be part of all investment processes
  - Assessment of past outcomes influences views about future potential outcomes
  - Unavoidable, but can be misleading.

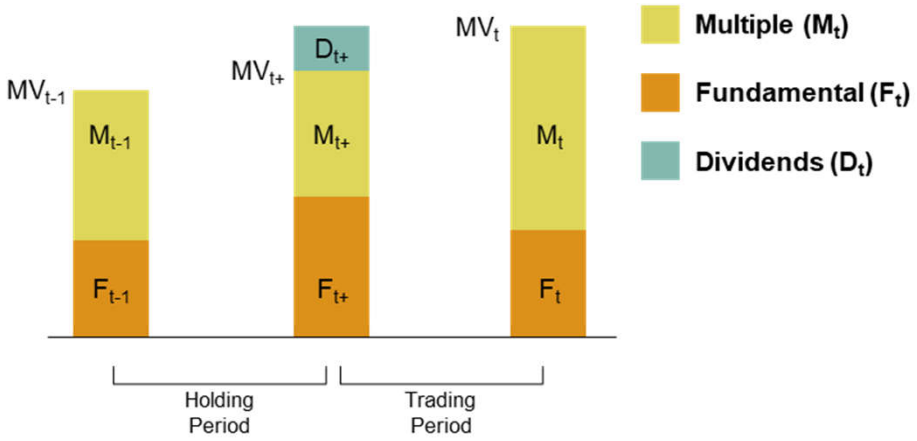
- Fundamental Return Attribution complements existing approaches
  - Intuitive and explainable approach to stakeholders
  - Separates returns into components that are meaningful aspects of an investment process
    - **Multiple** – the return from the change in the market's valuation of the portfolio
    - **Growth** – the change in value due to the performance of the underlying asset
    - **Activity** – the change in value from changing the portfolios holdings (both buying/selling and changes in weights).

- It highlights those aspects that are critical to the long-term success of an investment process
  - A "growth" strategy should generate returns from above average growth in its underlying assets
  - A "value" strategy might have low growth but should benefit from a buy-low, sell-high process that leads to positive activity returns
  - Is a strategy outperforming due to multiple expansion, if so will this continue?

- This framework encourages more effective decision making about portfolios
  - This approach is a better assessment of process than alternatives
  - It separates the components of return that an investor can control or influence from those it can't
  - Potential to separate long-term return drivers from short-term noise
  - Clear communication to stakeholders.

Additional material

Measuring the change in portfolio fundamentals over a single period



Where $MV_t = F_t \cdot M_t$ and the subscript indicates the time. The time *t-1* is the start of the measurement period (and the end of the previous period) and *t+* and *t* are the end of the current period. There is no practical difference in time between *t+* and *t*, it is assumed the trading period is effectively instantaneous. After trading, the portfolio formed at time *t* is the same portfolio used at the beginning of the next period.

Translating portfolio quantities into returns

$$R_{t,Portfolio} = R_{t,Activity} + R_{t,Growth} + R_{t,Multiple}$$

$$R_{t,Acivity} = ln\left(\frac{F_t}{F_{t+}}\right) - ln\left(\frac{MV_t}{MV_{t+}}\right)$$

$$R_{t,Growth} = ln\left(\frac{F_{t+}}{F_{t-1}}\right) + ln\left(1 + \frac{D_{t+}}{F_{t+} \cdot M_{t+}}\right)$$

$$R_{t,Multiple} = ln\left(\frac{M_t}{M_{t-1}}\right)$$

Limitations of reliance

Limitations of reliance – Thinking Ahead Group 2.0

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Since establishment in 2015, over [60] investment organisations have collaborated to bring this vision to light through designing fit-for-purpose investment strategies; better organisational effectiveness and strengthened stakeholder legitimacy.

Led by Tim Hodgson, Roger Urwin and Marisa Hall, our global not-for-profit research and innovation hub connects our members from around the investment world to harnesses the power of collective thought leadership and bring these ideas to life. Our members influence the research agenda and participate in working groups and events and have access to proprietary tools and a unique research library.

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We seek collaboration with like-minded organisations to achieve our vision, so for more information about us please contact:

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