Cluster analysis reveals 'rogue' managers

Key points

- *Cluster analysis can help turn complex data into simple visualisations that show relationships more clearly.*
- *It can help investors review how true-to-label managers' products are and assess potential diversification benefits.*
- *Frontier's Alternatives & Derivatives team has incorporated cluster analysis into its processes.*

Cluster analysis using machine learning can help investors review how true-to-label fund managers' products are and assess the diversification benefits of potential new strategies.

While this tool has been widely used in social sciences, with advances in technology cluster analysis it is more and more being used as a tool within investments and finance to reveal groups and natural order, such as relationships between asset classes.

"Better understanding true product characteristics and how true-to-label something may be can help us to uncover if there is hidden beta, which could lead to unforeseen portfolio performance in certain market conditions," Frontier Advisors Associate, Donna Davis, said.

"It allows for a deeper portfolio understanding which ultimately can assist in creating an improved portfolio, more in line with what we want our objectives to be."

Frontier's Alternatives & Derivatives team are now using clustering techniques to better understand the sub-sectors they cover and how they interact with other asset classes.

The diagram below shows a cluster analysis of fund managers, where the magnitude of diversification is shown by the varying heights of the stems. Most manager types are clustered together, such as Australian equity managers, which sit around the Australian equities index.

"There's a couple of, for want of a better word, rogue managers which are exhibiting characteristics, which aren't quite as true to label," Davis said, citing a credit manager (labelled 13) which has been clustered with international equity managers.

Dendrogram of Strategy Correlation
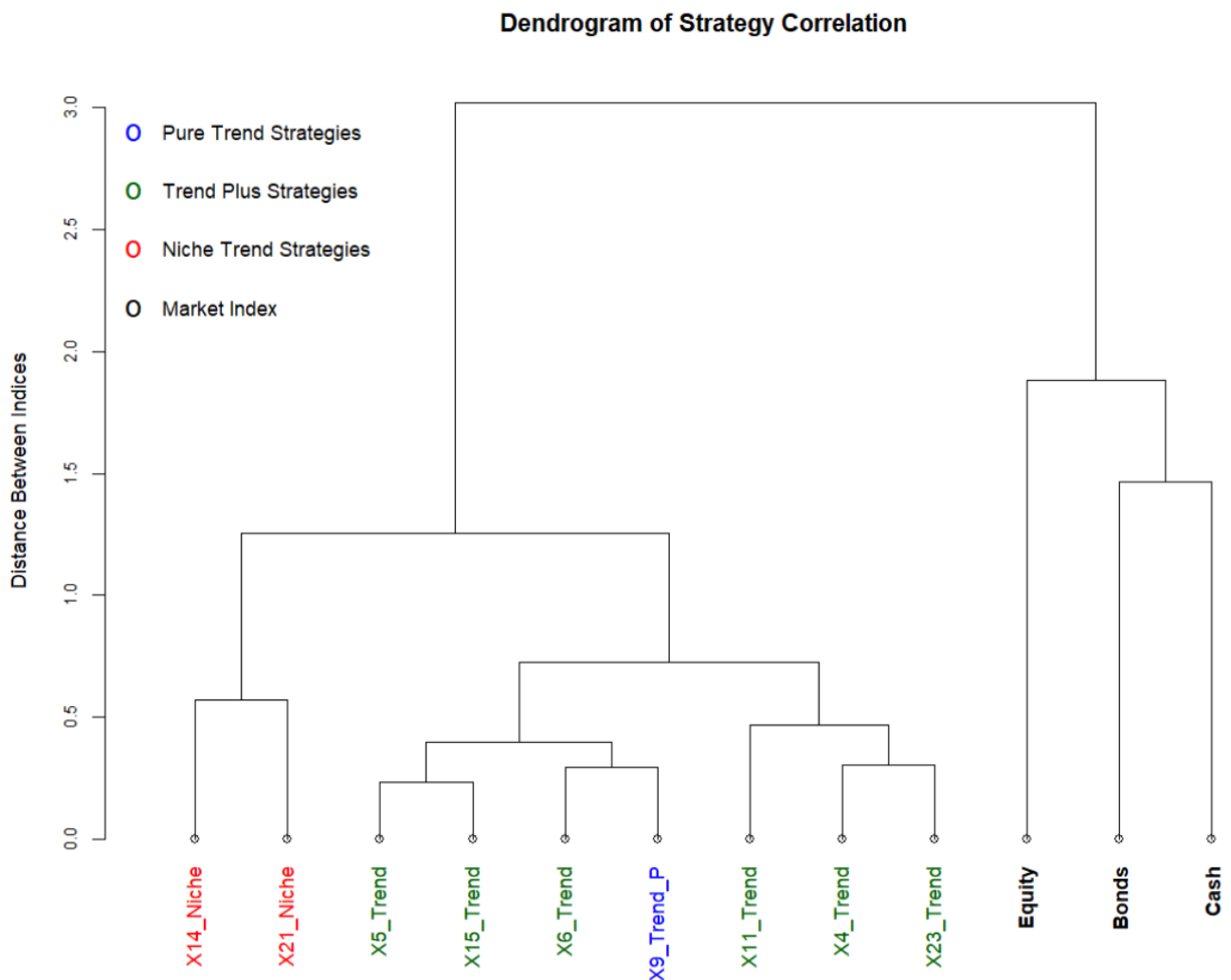
Frontier Advisors Head of Alternatives & Derivatives, Michael Sommers, said cluster analysis can sit alongside other forms of analysis and be useful for large investors who are now assessing 40-50 managers to determine if they are true-to-label.

"This is just another element, but it's a very visually appealing element to dumb down what could be a whole bunch of complex relationships."

We hope this presentation has generated lots of questions and examples of where you see cluster analysis may have benefit for your own scenarios. If this is the case we would love you to get in touch with Frontier to discuss how we can work with you to use this powerful tool.

Key questions the panellists answered

- *(39.45m) Are there examples when cluster analysis can lead to different conclusions than more traditional analysis, such as correlation matrices?*
- *(40.50m) Is Frontier using an off the shelf product for cluster analysis or did it develop its own?*
- *(42.00m) How sensitive are the results to the timeframe used for the analysis?*
- *(44.00m) Could clustering be used to inform relative value trade structures, i.e. identify baskets of structures, which behave similarly for long short approaches?*