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November 2018

HIGHLIGHTS FROM CFM'S LONDON AUTUMN SEMINAR

Introduction

On the 14th of November, Capital Fund Management (CFM) was joined by 50 clients and investors for our 2018 London Autumn Seminar. We heard several insightful talks on the use of big data tools in investment management, ethics and cyber security, asset crowding, and the influence of behavioural biases on markets. These discussions were led by academics, market experts and the firm's senior leaders.

Contact details

Call us +33 1 49 49 59 49
Email us cfm@cfm.fr

The agenda for the day included:

- CFM's Chief Investment Officer, Marc Potters led a discussion on using cross validation to reduce overfitting in portfolio construction
- R. David Edelman, the former White House Technology Advisor to President Obama and Project Director at Massachusetts Institute of Technology, explored issues of trust in A.I. and cybersecurity
- CFM's Head of Alternative Beta Strategies, Philip Seager presented findings from recent research in to crowding in alternative beta strategies
- Paul Craven, a behavioural economist and former Head of European Institutional Business at GSAM added to the day's discussion by demonstrating how behavioural biases can affect our thinking and potentially investment decisions

Key takeaways from the day

Several important themes, findings, predictions and big picture trends emerged from the presentation and discussions:

- Statistical tools from big data and machine learning can improve portfolio optimisation. Problems in big data often arise from the high number of variables, portfolio optimisation is a classic big data problem, the number of investible assets is often similar to the number of data points, which can lead to overfitting. Overfitting results in analysts attaching undue significance to noise in portfolio data. A concept from machine learning called cross validation can help reduce overfitting in portfolio construction by reducing the impact of in-sample biases. Random matrix theory, a far more complicated approach than cross-validation, can also reduce the overfitting by reducing estimation errors for the risk factors of specific portfolios. - *Views of Marc Potters, Chief Investment Officer, CFM.*
- Data ethics is now just plain ethics. The increase in the collection and usability of data has had a transformative effect on our society but data is as fallible as we are. What has data done to earn our trust? Data is being manipulated for profit and disruption and it is becoming harder to distinguish between the fake and the genuine. The workings of technology, and A.I. in particular, are a mystery to most people and there is a need to help people determine when the use of data maybe malicious. A.I. has the potential to revolutionize sectors from education to healthcare but there are many pitfalls on the way. We are never going to teach an algorithm to be ethical; it needs to be designed in an ethical way. - *Views of R. David Edelman, Former White House Technology Advisor to President Obama.*
- Crowding potentially impacts investors in two ways: it results in alpha decay and can also create fat left tailed returns as everyone heads for the exit at the same time. Agent based models can be used to show that naively the more capital allocated to trend followers the better the performance of trend followers. Crowding may explain the premium behind some alternative risk premia. Our research in equity factors explores a range of crowding metrics in a range of classically defined factors such as momentum, value, quality, low volatility and size. Crowding in equity factors and trend following may exist but it is difficult to detect. The use of execution data to detect crowding in trade flow may be more revealing. - *Views of Philip Seager, Head of Alternative Beta at CFM*
- The human mind has evolved for the risks of the Savannah not modern markets. Over evolutionary timescales, biases have been highly advantageous, as they reduce the energy involved in making a decision but generating outperformance in financial markets is more suited to a rules based approach. Group think, confirmation bias and relativity bias all lead investors to buy assets that are above their intrinsic value and sell assets that are well below their value. Awareness of these biases and having the self-discipline to follow the rules you have put in place to counteract them is the basis of a systematic approach to investing. - *Views of Paul Craven former Head of European Institutional Business at GSAM*

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CFM has pioneered and applied an academic and scientific approach to financial markets, creating award winning strategies and a market leading investment management firm.

Contact us

Capital Fund Management S.A.
23, rue de l'Université, 75007
Paris, France
T +33 1 49 49 59 49
E cfm@cfm.fr

CFM International Inc.
The Chrysler Building, 405 Lexington Avenue - 55th Fl.,
New York, NY, 10174, U.S.A
T +1 646 957 8018
E cfm@cfm.fr

Capital Fund Management LLP – Sydney office
Level 16, 333 George Street
Sydney, NSW, 2000, Australia
T +61 04 39 16 0125
E cfm@cfm.fr

CFM Asia KK
9F Marunouchi Building, 2-4-1, Marunouchi, Chiyoda-Ku,
100-6309 Tokyo, Japan
T +81 3 5219 6180
E cfm@cfm.fr

Capital Fund Management LLP
64 St James's Street, London
SW1A 1NF, UK
T +44 207 659 9750
E cfm@cfm.fr