J.P. Morgan Equity Quant Conference 2013

Summary of presentations

We held our 6th Equity Quant conference in London on October 12th. We had approximately 290 delegates attending the event.

For the benefit of those clients who were unable to attend in person, in this report we provide an overview of the eight main presentations, summarizing the key points, conclusions and Q&A as well as flagging our own "key takeaways" from each of them.

The summarised presentations are listed below:

Yoav Git – The Failure of Quant Models – When and Why Do "Live" Returns Differ From Backtested Analysis?

Roni Israelov – To Trade or Not to Trade? Informed Trading with Short-Term Signals for Long-Term Investors

Marcos López de Prado – How Long Does it Take to Recover From a Drawdown? And Other Misconceptions About Risk and Returns

Marko Kolanovic – How can Derivatives and Index Products influence Quant trading strategies

Murray Thom & Phil Goddard – Quantum Computing: A New Approach to Portfolio Optimization

Ron Bird – Eureka! Active Managers Do Have Stock-Picking Skills! But Does That Translate into High Returns for Clients?

David Blitz – Low Volatility Strategies: Latest Insights and Trends

Tobias Preis – Quantifying Economic Behaviour Using Big Data: How Can the Internet Help Predict Stock Prices and Economic Trends

Mark Schindler – Rumours in Financial Markets: An Experimental Perspective

The presentations slides are currently available online by following the following link: click HERE

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Conference Overview

- We held our 6th annual Equity Quant Conference in London on October 11th in our London - Canary Wharf offices.
- Despite us having heard about a lot of budget tightening from our clients during our pre-conference marketing, we were delighted to see around 290 delegates attending the event.
- We were pleased to have Patrick Burrowes Huxford (J.P. Morgan's co-head of EMEA Equities Sales & Execution) open the event and briefly share with us some of his thoughts on execution and active management.
- Patrick also highlighted ways in which J.P. Morgan is proactively looking to differentiate itself from the competition – recognizing that much of what bulge bracket brokers provide to clients is in many ways very "generic" and that products dedicated to Quant Managers is of prime importance for the firm.
- The format of the event broadly followed that of previous years: external presenters were invited to talk about a range of "Quant related" topics and once again the emphasis was placed on blending academic findings with "real world" practitioner experience; while trying to ensure the topics presented were diverse enough to interest everyone in the vast audience.
- This year again, we went with a higher density format – opting for 9 speakers (4 sessions being of 1 hour and 5 of 30 minutes).
- There was a diverse variety of topics covered and we were pleased to see most delegates attended all nine sessions.
- The speakers did not disappoint and over the day we were treated to a series of very interesting presentations (see details below) and feedback from clients has been very positive.
- The presentations slides are currently available online by clicking HERE.

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Yoav Git

The Failure of Quant Models: When and Why Do "Live" Returns Differ From Backtested Analysis?

Summary

- The day was kicked-off by Yoav Git, who is head of Fixed Income at AHL partners. In a very clear and entertaining presentation, Yoav described when and why do "live" returns of Quant Models differ from backtested analysis.

- He started off the presentation by showing the live performance chart of a trading system that was well backtested and that yielded superior historical results. Interestingly, the chart showed that soon after live implementation, the trading system exhibited a 10 standard deviation loss due to a market-wide idiosyncratic event (a speech made by Fed Chairman Ben Bernanke). The main takeaway here was that often time simulated performance can be unrealistic and Quant models are prone to significant failure around one-off idiosyncratic events. In fact, Yoav suggested that one really needs to know when to switch on/off a strategy, and that a Quant model is not always systematic but may require an override or judgment call.

- The presenter then proceeded and explained as to why live performance of a Quant model can be different from simulated performance, with some of the main reasons being technology (which is becoming an arms race), execution (investors do not apply stringent enough criteria), liquidity (differentiating between good and bad liquidity), no one model is "all weather proof" (different assets do trade differently) and investors often fool themselves thinking they are "too clever" and understand underlying drivers when in reality they do not.

- Yoav also spent some time providing an overview of how to construct models. He indicated that data is the core of model construction and that at least 50% of the time and effort needs to be devoted toward gathering, processing and truly understanding the data used for model construction. Additionally, he argued that models need not only consider linear relationships but rather also incorporate non-linear aspect in order to improve model robustness. Further, he went on to suggest that Quantitative funds are typically all about diversification (lots of small bets with small positive expectation), waiting for the "Central Limit Theorem" to kick in, and in the meantime making sure the funds do not go out of business. Interestingly, he also advocated that one of the biggest mistakes that Quantitative managers do is letting the optimizer allocate risk!

- The hard truth is that by the time a Quant model comes up for review, it already has a great story to it, has exhibited great performance, has shown to be stable over time and across a range of parameters that it was tested against, is stable across multiple assets and, of course, is completely uncorrelated to existing set of strategies. However, most of these signals at some later point failed and only a select few have remained resilient. In fact, Yoav indicated that from a library of more than 1,300 Quant signals researched by AHL over many years, only 10-15 currently manage "live

money". While we thought that was quite fascinating, it was not that surprising after all. In fact, model over-fitting can be very difficult to detect. Survivorship bias has always a way of crawling its way into a simulation and the world is just not stationary enough for rigorous statistics to always be relevant.

Conclusions

- At the end of the presentation, Yoav went over some of the key questions that a Quant Researcher should always ask oneself when constructing a model or trading system:
    - Are the results "too good to be true"? – reality is that there are very few good predictors for primary Risk Factors; researchers tend to think that models have to be persistent; most importantly, one needs to understand what Risk Factors the model is supposed to capture.
    - Does the model work when it should not? In other words, it is acceptable if the model does not work persistently and during periods when it is expected not to work; and be aware and skeptical if the model is working during periods when it should not work.
    - Is there any data that was forgotten in the analysis? Researchers often do not "know markets" and are too busy staring at the instruments they trade; always incorporate any genuine out-of-sample data that may be available (i.e. spot vs. futures, yields vs. bonds, OTC options data, etc) as well as non-price data (i.e. production figures, new orders, inventories, etc) that could exhibit a lead relative to prices.
    - Use foresight to predict the future – to determine if a variable is useful in predicting the future, one can determine if observing it ahead of time improves its predictive power.
    - Does the Model predict volatility? Volatility is much easier to predict than direction (intraday data is extremely useful in gauging this effect); for instance, if a change in oil inventories does not change oil price volatility, what realistic chance do oil inventories have in predicting price direction?
    - There is no harm in performing "ongoing verification"! In other words: know why you switch-on the strategy (know the story); know when to switch the strategy off (most important of all); know that the strategy will be switched off at some point (due to evolving trading environment caused by changes in liquidity, inflation, regulation, market participants/central bank involvement, correlations, etc), but do not forget that often times there is "life after death" for Quant Models.

Q&A

- Perhaps a reflection of a presentation that covered all bases, there was not much of a Q&A session after Yoav's presentation.

Our Key Takeaways

- Even the best of Quant Models are prone to failure so one should continuously challenge the Model and search for improvements.

- Filtering out noise and having a clear understanding of main Risk Factors underpinning the Model is absolutely key, as well as understanding when and during what environments the Model will have higher/lower probability of success.

- Expecting continuous persistence in a model is often unreasonable and can lead to false positives.

Speaker Biography

Yoav Git is head of Fixed Income at AHL Partners. Previously, he was working as a Senior Research Fellow within the AHL Dimension fund and concurrently as an associate research fellow at Imperial College, London. Prior to joining AHL he was head of fixed income research at Winton Capital Management and before that Head of Research and Development at Brevan Howard in Israel. He started his career in Finance as a Risk Quant at CSFB.

Before joining the finance field Yoav was a lecturer in probability and statistics at Cambridge University.

He did his PhD in Mathematics at University of Bath and his Masters in Mathematics at University of Cambridge.

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Roni Israelov

To Trade or Not to Trade? *Informed Trading* With Short-Term Signals for Long-Term Investors

Summary

- Roni Israelov opened with the following conundrum: short-term signals offer exciting gross performance opportunities but drown in trading costs and have limited capacity.

- So what are some of the approaches we could use? Combining various short-term signals to get a sufficient signal-to-noise ratio is a potential option but is hard to do. Giving more weight to short-term signals is another option but incurs increased trading costs. In practice, neither would work well due to the limited capacity and static optimization around the trading costs.

- Instead Roni suggested using "*Informed Trading"* i.e. using short-term signals to determine whether the longer-term signals are allowed to trade.

- A stylized example investigates how 100 shares could perform in terms of returns and transaction costs if we trade immediately according to a long-term signal, or instead wait until a short-term signal concurs. The stylized demonstration clearly shows the expected returns are increased and trading costs are decreased using "*Informed Trading"*.

- Roni presented his results in the form of the "Horse Race". In this part of the presentation he compared three portfolios: a typical long-term portfolio, a mixed portfolio consisting of long-term and short-term signals combined the 'typical' way, and lastly the "Informed Trading" portfolio.

- A key parameter in this 'horse race' is the *trading aggressiveness* (ie the percentage of the difference between the current and desired position that is traded.)

- The 'horse race' is used to highlight several benefits of "informed trading":

    - "Informed Trading" looks promising even using a trading aggressiveness of 100%

    - "Informed Trading" has a higher 'optimal' trading aggressiveness than the other options because the trades themselves carry more information (in the form of the short term signal)

    - The Informed Trading portfolio has more exposure to both the long and short signals

    - Modest improvements in net Sharpe ratios should be possible.

Conclusions

- In summary, "*Informed Trading"* allows for signals that do not independently cover their trading costs.

- Disallowing trades that are inconsistent with your short-term view allows more aggressive trading and increased exposure.

- Informed trading allows exposure to the short-term signal with lower capacity constraints.

Q&A

- One question was on how perhaps "*Informed Trading"* might be implemented using a 1-month reversion signal for the short-term with a 12-month momentum signal for the long-term. Dr. Israelov explained that the signal correlation was important and that some degree of overlap would be necessary.

- So what are some good short-term signal candidates? Well Dr. Israelov politely declined to answer. And fair enough!

Our Key Takeaways

- Dr. Israelov confirms (in a much more rigorous and theoretical approach) what we have also observed in backtesting of the same type of ideas: combing high turnover Factors to time entry points for low turnover Factors does improve the Alpha while reducing turnover.

- Conceptually, this makes great sense to us and using short-term signals to give the 'green light' on long-term investment strategies is one of the more promising ways of exploiting strategies where the turnover would be too high to use in practice.

Speaker Biography

Roni oversees AQR's short-term systematic futures trading strategy and the management of related portfolios. Separately, he also manages AQR's volatility trading strategies. Prior to AQR he was a research analyst in the quantitative equities strategies group at Lehman Brothers. He shared the Graham & Dodd Award for the paper "International Diversification Works (Eventually)" published in the Financial Analysts Journal.

Roni earned a B.S in mechanical engineering from Georgia Institute of Technology, an M.S in mathematical risk management from Georgia State University, and an M.S in finance and a Ph.D. in financial economics form Carnegie Mellon University.

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Dr. Marcos López De Prado

How Long Does It Take To Recover From A Drawdown?

Summary

- Marcos De Prado's presentation focused on better metrics to quantify the performance of hedge fund portfolio managers.
- The starting point was the most popular performance ratios used by the industry and the distributional assumptions underlying them. Typical examples are the well known Sharpe Ratio, Sortino Ratio, Treynor Ratio and Information Ratio (all of which rely on IID Normal returns[1]).
- The efficiency of these key ratios breaks down as soon as we move away from the very restrictive NID assumption. Accurate performance metrics should be able to discriminate between "bad luck" and true "poor investment skills", and also take into account the maximum time under water and the time to recover.
- The triple Penance rule is defined in the presentation as a means to quantify the dangers of such unrealistic assumptions. It states that under NID assumptions, it takes three times longer to recover from a given maximum drawdown than the time it took to reach it, for a given confidence level. This is shown under NID assumptions to be independent of the Sharpe Ratio of the manager. In other words, a manager with a Sharpe of 10 and one with a Sharpe of 0.5 would both need three times the time it took to produce the maximum drawdown to recover from it.
- It is now well established that Hedge Fund returns exhibit significant first order auto-correlation which introduces a serial dependence that leads to non Normal and non IID distributions.
- Dr De Prado shows that if we look at performance analysis through the lens of serially correlated data, the maximum Drawdown is on average 65% greater than in the IID case, whereas the Penance is on average 17% lower. More importantly, the Penance tends to decrease as the Sharpe ratio increases.
- These results indicate that managers running strategies characterized by auto-correlation should be evaluated accordingly as their Penance is much shorter.
- Stopping a skillful portfolio manager too early based on unjustifiable IID based metrics is hence a very bad and costly decision.

[1] Ie "Independent and Identically Distributed random variables"

Conclusions

- The reliance on Normal IID returns when evaluating portfolio managers can be very dangerous.
- A vanilla NID assumption leads to the "Triple Penance Rule". In reality, Penance is three times lower. Better and more accurate performance metrics need be defined.
- As a result, in many cases, firms are wrongly firing more skillful PM's than the number they are willing to accept under the wrong assumption of independent returns.
- The cost of simplified Math could have two out of three PM's wrongly fired and could overall lead to tens of millions of dollars lost annually.

Q&A

- The first question was about clarifying the time it takes for recovery discussed on page 14 of the presentation. A point was made about the dynamic evaluation of the time under water as opposed to a fixed estimation.
- A second one questioned the added value of the discussed metrics as compared to the Sortino Ratio.
- As explained in the presentation, the Sortino Ratio focused on the negative returns of the distribution but still relies on the assumption of Identically and Independently Distributed returns.

Our Takeaways

- Firms evaluating performance through Sharpe Ratio and other classical metrics end up firing skilled managers, which is very costly to investors.
- Not properly accounting for the underlying assumptions of a given model or statistical measure can have catastrophic results.
- Whilst the literature on better performance metrics for hedge funds has been abundant since the early 2000's, Dr De Prado has given us a very intuitive and transparent way to quantify hedge fund managers' performance.

Speaker Biographies

Dr. Marcos López De Prado is Head of Quantitative Trading & Research at Hess Energy Trading Company, the trading arm of Hess Corporation, a Fortune 100 company.

Before that, Marcos was Head of Global Quantitative Research at Tudor Investment Corporation, where he also led High Frequency Futures Trading and several strategic initiatives.

Marcos joined Tudor from PEAK6 Investments, where he was a Partner and ran the Statistical Arbitrage group at the Futures division.

Prior to that, he was Head of Quantitative Equity Research at UBS Wealth Management, and a Portfolio Manager at Citadel Investment Group.

In addition to his 15+ years of investment management experience, Marcos has received several academic appointments, including Postdoctoral Research Fellow of RCC at Harvard University, Visiting Scholar at Cornell University, and Research Affiliate at Lawrence Berkeley National Laboratory (U.S. Department of Energy's Office of Science).

He holds a Ph.D. in Financial Economics (Summa cum Laude, 2003), a second Ph.D. in Mathematical Finance (Summa cum Laude, 2011) from Complutense University, is a recipient of the National Award for Excellence in Academic Performance by the Government of Spain (National Valedictorian, Economics, 1998), the Best Doctoral Dissertation Award by Complutense University (2011/2012), and was admitted into American Mensa with a perfect test score.

Marcos is a scientific advisor to Enthought's Python projects (NumPy, SciPy), and a member of the editorial board of the Journal of Investment Strategies (Risk Journals), among other academic publications.

His research has resulted in three international patent applications, several papers listed among the most read in Finance (SSRN), three textbooks, publications in the Review of Financial Studies, Mathematical Finance, Journal of Risk, Quantitative Finance, Journal of Financial Markets, Journal of Portfolio Management, etc. His current Erdös number is 3, with a valence of 3.

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Phil Goddard and Murray Thom

Implementing Financial Algorithms on an Adiabatic Quantum Computer

Summary

- The very interesting and highly differentiated presentation by Phil Goddard (1QB Information Technologies) and Murray Thom (D-Wave Systems) highlighted a "black swan technology" using an Adiabatic Quantum computer that solves certain optimization problems by orders of magnitude more quickly. Phil, Murray, and several others from the team also hosted a booth to speak with conference attendees and received an enthusiastic response.
- Phil began by introducing D-Wave, the company which builds the Adiabatic Quantum computing hardware, and 1QBit, the startup company which builds software for the D-Wave machine.
- Murray then proceeded to discuss the development of the D-Wave machine, how it works at a high level, and its future roadmap. Incorporated in 1999, D-Wave develops Quantum computing systems for machine learning and optimization, has 100+ US patents and 60+ peer-reviewed publications, and has sold machines to Lockheed Martin, Google, and NASA.
- Murray then showed how the computer solves a very specific and difficult problem for classical computers: Quadratic Unconstrained Binary Optimization (QUBO). The processor solves this by implementing a man-made, Quantum-mechanical Ising spin network. Murray described the fundamental building block of the Quantum computer (a Qubit, which contains a single bit of information - can be in 1 of 2 states). It can be visualized as a spinning bar magnet which can be north up or north down. The network of these Qubits makes up the Quantum processor and is non-trivial due to the interactions between each pair of Qubits. Using an annealing process, the magnets ideally configure themselves into the lowest overall energy of the system which is then the solution to the problem.
- Murray then highlighted some benchmarks that Google performed for their customer acceptance testing, which concluded that the D-Wave machine has a 35,000x speed advantage over commercial optimizers on a classical computer (D-Wave has doubled the number of Qubits every year over the past 9 years).
- Phil then took over to describe some 1QBit's projects, including its Integer Optimization Toolbox, Simulated Annealing Toolbox, Quasi-clique Toolbox, Fault Tolerant Encoding, and Binary Neural Net Optimization. At a high level, 1QBit aims to insulate the user from the complexities of transforming real-world problems into the Ising model.
- He then went in-depth into the Integer Optimization Toolbox – the software first maps a general problem into an integer problem, then maps the integer problem into an Ising problem, passes the Ising problem to the D-Wave machines, gets the results back, works it way back up the tree, and presents the results in a real-world format.
- Phil then proceeded to describe how the toolbox can be applied to mean-variance portfolio optimization, which transforms the problem into a QUBO formulation.

While portfolio optimization is quadratic and it is optimization, it is not unconstrained and it is not binary.

- Standard portfolio optimization problems are easily solvable with any number of standard commercial packages, though certain categories or problems are very difficult, such as constraints on turnover, trading, and particularly cardinality (where you can only select *k* out of *N* stocks). These constraints make the feasible region and efficient frontier disjoint and non-convex, and such problems are often unsolvable using standard gradient-based optimization methods. These standard methods rely on heuristic techniques such as genetic algorithms, particle swarming, simulating annealing, and artificial neural networks which can be very computationally demanding.
- The D-Wave machine excels at solving problems with binary variables (as encoded by the Qubits). With continuous weights, traditional gradient analysis can be used but with binary/discrete weights the disjoint feasible region makes the problem much more difficult to solve and is more ideally suited for Quantum computers.

Conclusions

- D-Wave's commercially available Quantum computing hardware can be programmed to solve real problems in financial engineering. 1QBit's software enables users to be insulated from the physics of the Adiabatic Quantum Computer and to solve more general problems than QUBO.
- Near-term advances in hardware development will dramatically enhance the capability of existing software tools. Ongoing research is creating new tool sets and expanding the range of addressable problem spaces. 1QBit is engaging new industry and academic partners for prospective collaborative research projects.

Q&A

- *The Adiabatic Quantum Computer is probabilistic and does not always get the correct answer – does it get less likely to get the correct answer as you scale up the number of Qubits, is there a ceiling on the maximum size of these computers?*

  The difficulty does go up with the problem size, and you do see this in solid-state systems. The team has a very good understanding of these limitations, and are working on techniques to address this (noise reduction, reducing precision control error, etc.) and not solely on scaling up the processor.

- *What about overfitting the results?*

  These problems do not go away, you would use this in the same way you currently use your optimizer.

- *Would you considering partnering with industry, such as with Axioma?*

  We are open to partnering with industry, most of the work we do now is partnering with clients rather than competing with them. Our goal is optimization on steroids.

- *How much discretization for mean-variance optimization do you need to impact output? Would you be getting more noise into the box?*

This is a probabilistic solution anyway – if run for a long enough time, you will get an exact solution, but we generally do not want to do this. There are quantization problems but this has not been an issue for the types of problems we are solving yet.

Our Takeaways

- D-Wave's Adiabatic Quantum computer is already commercially available today and may be a disruptive technology sooner than many may realize – it certainly makes sense to keep this on the radar.
- 1QBit's software could potentially allow for an accessible framework for practitioners to access the power of Quantum computing without needing to understand the underlying complexities. This could create entirely new and previously unimaginable applications for Quants, as we can potentially explore previously intractable problems.

Speaker Biographies

***Dr. Phil Goddard**, Head of Research, phil.goddard@1qbit.com*
1QB Information Technologies

Phil leads the R&D team at 1QBit that is focused on broadening the range of industrial optimization applications suitable for being solved using the D-Wave AQC.

In addition to his work at 1QBit, he is President and Principal Consultant at Goddard Consulting. He was formerly with The Mathworks as manager of the financial services practice within their North American consulting group and as a Senior Consultant and Application Engineer. In these roles he has developed custom numerical analysis and visualization applications for clients in the financial services, aerospace, automotive and petrochemical business sectors. Prior to The MathWorks, he worked on missile guidance, navigation and control for British Aerospace Dynamics (BAe Systems) and process safety instrumentation for Woodside Offshore Petroleum.

Phil also holds a position as Visiting Lecturer in the Beedie School of Business at Simon Fraser University (B.C., Canada). He graduated with a PhD degree from the University of Cambridge (U.K.), where he specialized in advanced robust control system design within the Department of Engineering, and a B.Eng. from the University of Western Australia.

***Murray Thom**, Research Engineer, thom@dwavesys.com*
D-Wave Systems

Murray Thom has been a Research Engineer with D-Wave since joining the team in 2002. In that time he has led the design and assembly of four generations of wiring and filtering modules for quantum processors at cryogenic temperatures. He has also been involved in several generations of chip packaging design, magnetic screening and shielding, and automated test system design and operation. Most recently Murray is working in technical support for the Sales and Business Development team, relating to algorithms, applications, and processor benchmarking.

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Marko Kolanovic

How Can Derivatives and Index Products Influence Quant Trading Strategies

Summary

- J.P. Morgan Research takes a holistic approach when analyzing quantitative market phenomena such volatility, correlations, Risk Factors and Risk Premia, impact of derivatives and passive index products, and others. Inefficiencies related to these market activities can create opportunities for Quantitative Managers.

- Hedging of index options can create intraday, weekly or monthly price patterns of major equity indices such as the S&P 500. For instance, delta hedging and rolling of options can cause weekly price momentum and month-end price reversion. Gamma hedging of options can cause intraday (end-of-day) momentum, and subsequent price reversion. Quant Momentum and Reversion Factors can be designed to take into account these market inefficiencies.

- Study of equity and cross-asset correlations is important for risk managers, Quant PMs, and derivative traders. For instance, equity correlation shows strong seasonality with earnings and option expiry cycles. Cross-asset correlation has been particularly volatile in recent years due to substantial central bank intervention and macro risk. This affected a broad range of market participants from traders pricing hybrid derivatives to CIOs determining optimal asset allocation.

- The Risk Factor investment style, traditionally employed by Equity Quant, GTAA and CTA investors, is becoming popular with a broad range of investment managers. Investors are looking for new Risk Factor exposures with a goal of accessing new (alternative) sources of Risk Premia and reducing portfolio correlations. Risk Factor strategies are designed by J.P. Morgan research to take advantage of Value, Momentum, Carry and Volatility opportunities across asset classes.

- With ~$5 trillion of assets following passive index strategies, index rebalances and reviews can create significant price distortions on stocks being added/deleted or undergoing significant weight changes. J.P. Morgan Quantitative and Derivatives research follows index events in major index families such as MSCI, FTSE, S&P, Russell, and country benchmark indices and highlights such opportunities in both developed and emerging markets.

Conclusions

- Derivatives and passive index markets can provide forward-looking insights for risk and be a source of Alpha for Quant Managers. Quant Managers should pay attention to these large (and growing) markets.

Key Takeaways

- J.P. Morgan research takes holistic approach when analyzing quantitative aspects of financial markets. Our Quantitative and Derivatives Strategy team consists of 30 analysts focusing on equity Quant, cross-asset Quant, equity derivatives and passive indexation. The team publishes regular in-depth publications and provides customized research to clients.

Speaker Biography

Marko Kolanovic is Global Head of the Quantitative and Derivatives Strategy team at J.P. Morgan. His team is responsible for developing equity derivatives, quantitative equity, portfolio trading, and cross-asset class strategies for clients and the firm's trading desks. His team currently holds 5 top rankings in the Institutional Investor surveys in the US, Asia and Europe, and Marko individually ranks #1 in the category of US Equity Derivatives. Prior to joining J.P. Morgan, Dr. Kolanovic was Head of Derivatives and Quantitative Equity Strategies at Bear Stearns, where he built and managed New York, London and Hong Kong trading strategy teams. Before joining Bear Stearns, Dr. Kolanovic was a derivatives research analyst at Merrill Lynch, where he worked on equity-linked hedge fund trading strategies. His trading methods have been implemented by major hedge funds and his expertise has been used by major investment offices around the world. Dr. Kolanovic's work is frequently quoted in publications such as the Wall Street Journal, Financial Times, Barron's, and others. Marko graduated from New York University with a PhD in theoretical high-energy physics. He has developed a number of scientific theories/models, has authored top-cited research publications, and is the winner of numerous excellence awards. He currently resides in New York City.

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Ron Bird

"Eureka! Fund Managers Do Have Stock-Picking Skills! But Does That Translate into High Returns for Clients?"

Summary

- Ron Bird gave us a lively talk in the difficult spot straight after lunch. Ron began by lamenting the failings of the funds management industry (lack of improvements to market efficiency, and a lack of wealth creation for its clients), while offering suggestions on how this situation might be improved.
- Ron remarked that the empirical evidence gathered over the last 30-50 years suggests that fund managers on average do not make a positive contribution to the wealth of their clients, yet are still favoured by them.
- Ron used three papers he has worked on, as well as others from the academic community, to highlight that fund managers do have particular skills that suggest that they could make a positive contribution to the wealth of their clients.
- Ron reminded us that portfolio managers have two tasks: selecting stocks and forming portfolios.
- In general, Ron found that aggressive funds with more concentrated bets tend to outperform their benchmark, indicating managers have skill in stock selection (that is eroded by portfolio construction, mandate and other limitations). He suggests that portfolio managers are capable of identifying 5 to 20 stocks that are likely to outperform, but tend to hold 60 or more in their portfolios for "diversification" or mandate reasons. The performance of these "other stocks" (that they do not 'like') detract from the performance of the stock they do 'like'.
- Ron cited Keynes, Buffett and Munger who all suggest portfolio managers should invest in concentrated portfolios, and refer to diversification is a distraction. As Ron said; "Fund Managers spend 90% of their time on stock picking and there lies their expertise. They have no special expertise in portfolio construction."
- Funds' top 5 stocks tend to provide 10.07% return with Sharpe of 0.28 c.f. the funds own returns of 6.30% and Sharpe 0.17. The top 10 Long/Short returns were even stronger (22.81% 0.901). Ron suggested that managers' skills are eroded by forcing them to hold diversified risk-controlled portfolios.
- Prof. Bird's next paper tried to determine the best way to utilize managers' skills. A Style regression showed managers add value with active positions, negative exposure to Growth stocks and positive exposure to Momentum. Other Style biases such as Size, Beta, Turnover and fees (firms that charge higher fees have lower returns – *before fees*) detracted.
- The more aggressive funds do add more value – except Growth managers during weak markets. The biggest outperformance is from aggressive active managers with Small-Cap Growth & Momentum tilts. The worst

performance is from aggressive managers tilting towards Value and negative Momentum stocks.

Conclusions

- Ron reminded us that fund managers have two responsibilities: Stock selection & Portfolio Construction. Unfortunately many portfolio construction techniques have the result that the portfolio includes many stocks the manager does not 'like', resulting in reduced returns for the client (even on a risk adjusted basis). Analysis of mutual fund data shows that portfolios constructed from managers' top 5 stock picks (identified by their active weights) outperform their top 10 stocks, top 15, top 20 and own fund consistently, on an absolute and risk adjusted basis. Managers' top 5 stocks tend to outperform by ~10% while their bottom 5 picks tend to underperform by -13%. Constraints detract from these stronger absolute and relative returns. Asset owners should therefore use fund managers to pick stocks, not construct portfolios, and they should be more aggressive in firing managers (especially large managers).

Our Key Takeaways

- Perhaps the most important take-away for the audience was that managers DO have stock selection skills, but are less skilled at portfolio construction (for self-imposed and external reasons). According to Ron, PMs should consider reducing the number of stocks in their portfolios, thereby increasing concentration in stocks they have conviction (both Long and Short).
- Asset Owners should then construct truly diversified portfolios of 5 or so highly concentrated funds. Asset owners should also be more willing to hire young funds and fire older, large funds (which have more to lose from underperformance, and therefore become 'closet' index funds).

Speaker Biography

Professor Ron Bird's academic career commenced at Macquarie University in 1970. At the end of 1972 he moved to the Australian National University where he was head of the Commerce Department for several years. Shortly after leaving the ANU in 1988, that university awarded him the title of Emeritus Professor.

Ron then embarked on a career in the private sector; first with Towers Perrin where he was in charge of their asset consulting practice and then at Westpac Investment Management where he was in charge of quantitative products. In 1995 he established a new Sydney-based quantitative funds management firm, in a joint venture with Grantham, Mayo, Van Otterloo (Boston).

He returned to academia at the beginning of 1999, joining the Finance Discipline at the University of Technology Sydney where he is Director of the Paul Woolley Centre for Capital Market Dysfunctionality. He also now holds a part-time position as Professor of Finance at the School of Management, Waikato University and also maintains a consulting practice specialising in the financial services industry.

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David Blitz

Low Volatility: Latest Insights and Trends

Summary

- David and his team have presented at our conference several times in the past. In fact, he first talked at 2009 event presenting a then-overlooked concept: that low volatility stocks tend to outperform high volatility stocks.
- David started by revisiting the CAPM: the theory, its shortcomings and why there are inherent shortcomings with the model that can actually explain the Low-Volatility "anomaly".
- He then reviewed what he considers the 12 potential explanations behind the outperformance of Low-Volatility stocks[2].
- After the review and justification of those explanations, David argued the Low-Volatility "anomaly" will survive the endurance of time as the effect is likely to persist.
- Next David reviewed the commonly voiced concerns: *expensiveness* of Low-Volatility stocks (David argued that it is not uncommon for Low-Vol stocks to be expensive and there is no evidence it should deter investors); *overcrowding* of Low-Vol strategies (David replied that it is a pale portion of the AUM invested in Value strategies for example) and the *interest rate risk* (which is potentially a problem but not for the foreseeable future).
- Finally, David presented the pitfalls of Low-Volatility investing and agreed that they can present challenges to investors; mainly the one-dimensional computation of risks (ie backward-looking data and not looking forward), limited upside in strong bull markets, the fact it regularly goes against other proven Factor premiums, (sector) concentration risk and high turnover.

Conclusions

- Whilst Low-Volatility investing was seen as a "bizarre" concept 5 years ago, it is now well accepted and embraced by Managers and investors alike. As a result, we have seen a lot of inflow and growth in Low-Volatility products.
- Despite the increased popularity we find that investors still disagree and question the rationale behind such a strategy; David raised 12 potential explanations which could full explained the Low Vol "anomaly".
- Following the exponential growth experienced, questions are now being asked regarding the valuation and recent increased risks behind the strategy. David took no notice arguing that whilst periods of underperformance should be expected at some stage in the future, Low-Vol strategies still appear healthy and should carry on delivering to investors.

[2] Namely: relative instead of absolute utility function, option-like payoffs, skewness preference, crash-aversion, borrowing constraints, regulatory constraints, short-selling constraints, compounding effects, attention-grabbing bias, representativeness bias, mental accounting bias and overconfidence.

Q&A

- The first question touched upon the amount of AUM in Low-Vol strategies and when the over-crowding would become a significant issue. David again compared Low-Vol strategies with Value strategies and stressed they only represent a fraction of the money managed.

- The second question concerned the potential extension of Low-Vol strategies into "Smart Beta". David agrees that Smart Beta will represent the next generation of products offered to investors and that the concept and doors are opened thanks to the popularity of Low-Vol products.

Our Key Takeaways

- Low-Volatility strategies have a strong rationale and foundation.
- There are several (practical and theoretical) reasonings why Low-Vol strategies should work going forward.
- While (like any other strategy) they do have their own pitfalls and a bumpy road may be expected at some time in future, Low-Vol strategies are here to stay.
- Low-Vol strategies could be extended to Credit and Commodities
- The next step in the evolution of Low-Volatility products is the spill-over onto similar risk premium based products like "Smart Beta".

Speaker Biography

David Blitz, Ph.D. is Senior Vice President and Co-Head Quant Research at Robeco, where he is responsible for coordinating all quantitative equity research efforts. He joined Robeco in 1995 after graduating cum laude in econometrics at Erasmus University in Rotterdam. In 2011 he obtained a Ph.D. in empirical finance from the same university. The stock selection models developed by David's team serve as the sole performance driver for Robeco's Quantitative Equity funds, which have over €15bln AUM. As a spin-off of his research, he has published several papers in peer-reviewed academic journals, such as Journal of Empirical Finance, Journal of Portfolio Management and European Financial Management. He is also a lecturer at the Vrije Universiteit in Amsterdam for the Post-Graduate Investment Management Master program.

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Tobias Preis

Quantifying Economic Behaviour using Big Data: How can Internet Help Predict Stock Prices and Economic Trends

Summary

- Tobias Preis highlighted the overwhelming integration of technology into everyday lives giving rise to massive and complex data sets, ergo, Big Data.

- Actions on handheld devices, every search on Google, every edit on Wikipedia feeds etc into data. Most of this data is difficult to process using traditional processes.

- Dr. Preis then presented ideas to harness some of this data for trading strategies in financial markets, bringing examples from Wikipedia and Google Trends.

- One example looked at the Google Trends database of volumes of search terms. Based on the weekly search volumes, one could take "Buy" ("Sell") positions on the stock (or index), depending on whether the volumes were decreasing (or increasing).

- Dr. Preis summarized results from some 98 generic search terms ("keywords"), highlighting that the financial relevance of a keyword is significantly correlated with returns.

- Signal vs. Noise was also touched upon as Dr. Preis discussed the importance of identifying/ignoring false signals e.g. while there is a strong relationship between the increase in the Wikipedia page views relating to companies (or related financial terms) before significant moves in the market – there is no such relationship to changes in the weekly number of views of actors and filmmakers.

- Another interesting idea discussed was how the tendency of users to look towards the future (or past) is strongly correlated to the country's GDP per capita.

- To conclude, Dr Preis also presented the argument that there could be potentially misuse by someone setting up server farms and manipulating search results by submitting false requests.

Conclusions

- In summary, Big Data does present some interesting propositions and we could definitely look forward to more research by academics and investment houses identifying trends and strategies exploring trading signals.

- We would need to be mindful of certain database issues, signal to noise ratios and evolving trends in how the data is presented and analyzed.

Q&A

- There was a question about relevance of the Google Trends dataset – the fact that the results are not confined to searches by the investment community but the larger section. Dr. Preis explained that this was fair enough as they are not essentially tracking decisionmakers but are targeting the trends in society.

- More questions were asked on the impact of revisions in search engine results. This was acknowledged as Google does not lock its database and potentially a download for a specific period now could be different to the dataset downloaded for the same period in the past. New work by Dr. Preis is looking to avoid such cases; Google is also changing the way it presents information.

Our Key Takeaways

- Dr. Preis' presentation was relevant to the current analytics landscape as we are increasingly observing clients becoming interested in this type of datasets.

- This also ties in with the growing emphasis on language recognition tools - algorithms that trawl search patterns and Twitter feeds to make investment decisions.

Speaker Biography

Tobias Preis is an Associate Professor of Behavioural Science and Finance at Warwick Business School. His recent research has aimed to carry out large-scale experiments on complex social and economic systems by exploiting the volumes of data being generated by our interactions with technology.

In 2010, Preis headed a research team which provided evidence that search engine query data and stock market fluctuations are correlated. In 2012, Preis and his colleagues Helen Susannah Moat, H. Eugene Stanley and Steven R. Bishop used Google Trends data to demonstrate that Internet users from countries with a higher per capita GDP are more likely to search for information about the future than information about the past.

Preis advises government agencies as well as private companies on potential exploitation of online digital traces. More information can be found on his personal website http://www.tobiaspreis.de.

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Mark Schindler

Rumors in Financial Markets: An Experimental Approach.

Summary

- Mark Schindler gave an interesting talk on the topic of rumors in financial markets, and how human behavior affects trading decisions. There has not been much scientific attention paid to the study of rumors, especially in financial markets, where they are an everyday occurrence.
- Definition: Dr Schindler cited Rosnow & Kimmel (2000) "A rumor is an unverified proposition for belief that bears topical relevance for persons actively involved in its dissemination."
- Markets: Rumors exist in financial markets for a number of reasons, including the existence of a limited number of credible participants with an extremely efficient communication network. Time is a crucial element in the dissemination of rumors to traders under time pressure, with financial risk. Rumors evolve in the absence of news, but also under information overload.
- Mark used controlled experiments with real financial implications to the participants (Potential loss of $50 to maximum profit achieved of $500) using an experimental trading system, designed to measure herding and behavioral biases over 90 second windows. The main variable was the quality of information made available to different participants.
- Herding Behavior Index was defined as being proportional to the change in; price, volume traded, the ratio of informed market participants, and their buy/sells ratio, and inversely to the length of time. Herding was found to be strongest with plausible content spread by a credible source.

Conclusions

Dr. Schindler concluded by telling us that the main results of these experiments:

1) the 'information' is only one part of the equation, reactions depend just as much on who the 'source' of the information is.

2) There are reasonable theoretical explanations for the large increase in price volatility as rumors evolve.

3) Herding behavior is evident, especially when participants erroneously believe that others know more. They will neglect their own information and mimic the behavior of other market participants.

Our Key Takeaways

As Mark said, the key takeaway was that people will discount their own knowledge in the presence of rumors (uncertainty) and become herd following.

Also interesting was the finding that the proportion of informed/uninformed market participants does not dramatically change the observed occurrence of herding behavior.

Speaker Biography

Dr. Mark Schindler has been working since 2011 for UBS Wealth Management as a Portfolio Manager for Ultra High Net Worth Individuals within Investment Mandate Solutions. From 2006 to 2011, he was managing several hedge fund portfolios for Clariden Leu Ltd. Mark holds a Ph.D. in Behavioral Finance from the University of Zurich (chair Prof. Dr. Thorsten hens with Prof. Dr. Ernst Fehr as co-referee) and is the author of the book "Rumors in Financial markets: Insights into Behavioral Finance" published by John Wiley & Sons. Before writing his Ph.D., he was a Risk Management Consultant for Arthur Andersen. He is also the President of Alumni Economists of the University of Zurich.

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