J.P.Morgan

Global Quantitative and Derivatives Strategy
05 November 2015

2015 JPM Quant Conference on Risk Premia Investing

London Conference Overview & Client Survey Results

Over the past three years, there has been significant interest in Risk Premia investing. Traditional portfolio construction that relies on predictable volatility and correlation among assets to allocate risk has been arguably inadequate recently. The current environment of low yields and high valuations has also resulted in a search for alternative approaches. The goal of using a Risk Premia approach is two-fold: to shield a portfolio from market volatility through lower correlations, and to 'harvest' the premia that can be delivered by Risk Factors (e.g. see our research Cross Asset Risk Factor Investing, Cross Asset Momentum, Equity Risk Premia or Factor Rotation & Business Cycle in US, Europe, EM).

T**he topic of our 9th Annual Quantitative Conference** (London, October 9th) **was 'Risk Premia' investing**. We had record attendance this year with ~400 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 presentations and panel discussions, summarizing the key points, conclusions and highlighting the main takeaways from each of them. Click HERE to access speaker presentations.

A number of different topics were discussed during the conference. Some were higher level and discussed Risk Premia trends such as "**When do Systematic Strategies Work?"**, "**Risk Parity Portfolios**", "**How Smart is Smart Beta**?". Other topics dwelled into specific factor approaches and asset classes, including the "**Time Series vs Cross Section of Momentum, Carry and Value**", "**Corporate Bond Risk Factor Investing**", "**Commodity Risk Premia**", "Equity Event based Risk Premia" to name a few. There was also a lively discussion on static versus dynamic risk factor approaches, including a presentation that introduced an "**Active Risk-Based Framework for Alternative Risk Premia Investing**".

Further, based on our conference survey, most of our clients think that **assets in Risk Premia Strategies will increase by ~100% over the next 2 years** as investors look for new ways to diversify portfolio risk. The largest growth is expected in the Pension, Insurance and Asset Management communities. In most cases, **clients are looking to develop in-house capabilities** to trade risk premia, but are often **using dealers' products due to a lack of trading infrastructure**.

According to our clients, **the main benefit of Risk Premia investing is Portfolio Diversification.** A majority of participants expect **Sharpe ratio of Risk Premia strategies to be greater than** that of **Global Equities and similar or better than** a diversified portfolios of **Hedge Funds** after fees and expenses. **Multi-factor Equity, CTA, Distressed Credit and Equity Event strategies** are **deemed to offer the best opportunities** for harnessing Risk Premia.

Similar to our prior surveys, two-thirds of investors continue to think that **diversification** across **Risk Premia will yield better results than active timing of Risk Premia.** The **preferred portfolio construction method** for investors continues to be Risk Parity. The two **biggest concerns** on investor minds with respect to Risk Premia investing are **lookback-bias** and **crowding/capacity.**

In terms of future performance, investors think that **most interesting style opportunities** are in cross asset **momentum** and **volatility. Equities** and **Volatility are asset classes that may offer the best Risk Premia opportunities.**

Global Quantitative & Derivatives Strategy

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Executive Summary

Over the past three years, there has been significant interest in Risk Premia investing. Traditional portfolio construction that relies on predictable volatility and correlation among assets to allocate risk has been arguably inadequate recently. Current environment of low yields and high valuations has also resulted in a search for alternative approaches. The goal of using a Risk Premia approach is two-fold: to shield a portfolio from market volatility through lower correlations, and to 'harvest' the premia that can be delivered by Risk Factors (e.g. see our research Cross Asset Risk Factor Investing, Cross Asset Momentum, Equity Risk Premia or Factor Rotation & Business Cycle in US, Europe, EM).

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Furthermore, during the conference, we conducted a survey in which we asked our clients questions relevant for the future of Risk Premia investing. Given that the survey was completed by a very large number of institutional clients (including some of the largest asset managers and pioneers in the field of Quantitative investing) the results may reveal upcoming trends in Risk Premia Investing.

Most of our clients think that **assets in Risk Premia Strategies will increase by ~100% over the next 2 years** as investors look for new ways to diversify portfolio risk. The largest growth is expected in the Pension, Insurance and Asset Management communities. In most cases, **clients are looking to develop in-house capabilities** to trade risk premia, but are often **using dealers' products due to a lack of trading infrastructure**.

According to our clients, the **main benefit of Risk Premia investing is Portfolio Diversification**. A majority of participants expect **Sharpe ratio of Risk Premia strategies to be greater than** that of **Global Equities and similar or better than** a diversified portfolios of **Hedge Funds** after fees and expenses. **Multi-factor Equity, CTA, Distressed Credit** and **Equity Event strategies** are **deemed to offer the best opportunities** for harnessing Risk Premia.

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In terms of future performance, investors think that **most interesting style opportunities** are in cross asset **momentum** and **volatility**. **Equities** and **Volatility** are **asset classes that may offer the best Risk Premia opportunities**.

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For anyone interested in the current state of Risk Premia investing, the conference had many offerings across a number of different topics:

When do Systematic Strategies Work?

Ewan Kirk's presentation focused on understanding when systematic strategies work. In setting the scene, he broke the initial question into 3 further questions: What do we mean by systematic strategies? What do we mean by work? And, what do we mean by when?

His thought provoking presentation highlighted that systematic strategies are rules-based investments. He provided evidence to suggest a systematic strategy works if it raises the overall Sharpe ratio of a portfolio of equities investments, and concluded that systematic strategies will always probably work.

Momentum, Carry and Value: Time Series versus Cross Section

Matthew Sargaison shared his thoughts on two approaches towards constructing models for Momentum, Carry, and Value strategies - i.e. should we use the time-series or the cross-sectional approach?

The choice between time-series vs. cross-sectional seems to be less empirical and more ideological. As an example, a quant equity strategy would build a market neutral long - short portfolio to hedge a common fundamental factor. On the other hand, trend-practitioners such as CTAs are fully directional and are exposed to the underlying market beta.

His analysis and evidence shown throughout the presentation indicated a combination of the two approaches yields better results than running a purely cross-sectional or time-series approach.

How Smart is Smart Beta?

Thomas Kieselstein presented on the concerns we should have for Smart Beta – which is not something that is new ('old wine in a new bottle') but certainly something that is gaining much popularity under its current branding.

A large concern is capacity as some smart betas are not suitable for high volumes and the increase in participation (AuM) could easily hit capacity ceilings in less liquid markets (such as EM).

Lastly Mr. Kieselstein noted that the industry badly needs more transparency – in terms of the usage of these smart beta portfolios (how much AuM is really being managed in these alternatives betas?) as well as educating the end user on the risks and implicit characteristics of these strategies.

Risk Parity Portfolios

Michael Mendelson began his presentation making a light reference to market movements during August and how *risk-parity* investing had received bad press.

His approach is to allocate to each of the assets weighted by risk while making very few assumptions about the allocation. Simply put, the exposure to assets is proportional to their risk-adjusted returns (more where better, less where worse).

He concluded that risk-parity remains an important approach for diversification and portfolio allocation, suggesting performance of risk-parity portfolios has recently

been under pressure especially from the commodities; however, the approach follows a diversified exposure across asset classes some of which will do better whilst some others do worse.

The Next Frontier for Factor Investing: Corporate Bonds

Jeroen van Zundert explores the use of factor investing in the corporate bond market and develops measures for building portfolios using equivalents for size, low-risk, value and momentum.

Van Zundert demonstrated how the same approaches (that are used in equities) can more than double the Sharpe ratios relative to a traditional benchmark. Even after t-cost considerations the approach is viable and also improves returns in a multi-asset context. Its a relatively new area of research in corporate bonds and a lot of what we know in the equity space can be applied.

Alternative Risk Premia: An Active Risk-Based Framework

Jerome Teiletche's presentation aimed at introducing an active risk-based framework for alternative risk premia (ARP) which attempted to address how to allocate between ARP. The standard approach in industry is to use Equal Risk Contribution (aka Risk Parity). Taking an agnostic approach: can we do more?

Jerome stressed alternative risk premia are not immune to economic and market regimes, and they are often not reacting to them in the same way. Investors might incorporate this information both tactically (RP) and strategically (dynamically shifting allocation).The framework presented is useful in that regard as it allows investors to incorporate active views on top of a risk-based portfolio in an integrated way.

Digital Revolution: Smart Alpha or Smart Beta Opportunity?

Gerben de Zwart began with an exploration of the digital revolution, noting the change from analog, mechanical and electronic technologies to the digital age. In 1984 just 8% of US households had a personal PC, by 2000 this was over half, and today tablets and smart phones are almost ubiquitous.

The growth of not just technology, but also data is exponential. Gerben asked the audience to consider how the digital revolution could reshape quant investing. He cited three key technological catalysts; the internet, big-data and machine learning, suggesting these should provide opportunities for Smart Alpha or Smart Beta.

Dr de Zwart concluded, by stating that the Digital Revolution is reshaping the quant landscape, he suggested that adapting big data intelligence is in an early phase and could provide an alpha opportunity; that eventually index vendors or investment banks will follow with smart beta offerings.

Combining Risk Premia with Fundamental Stock Selection

Bas Peeters delivered the last presentation of the day, highlighting the process of bringing together the best from two worlds i.e. *a quantitative factor driven investment premia and a fundamental stock selection process*.

From the quantitative perspective, the process involves identifying and ensuring positive exposure to equity risk premia (ERP). He suggested having exposure to multiple (uncorrelated) factors helps reduce risk and improves performance. Examples put forward were Value, Quality and Momentum ERP. From the

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fundamental side, the speaker discussed processes focusing on the longer term with extensive bottom-up research capabilities. Thematic idea generation and ESG integration were also discussed.

On one hand, high conviction fundamental portfolios can benefit from having positive factor exposures (e.g. "cheap biotechnology," "quality miners" etc.) and on the other hand, a factor portfolio could be made more robust by having a fundamental overlay (e.g. adjusting factor exposures to macro event surprises).

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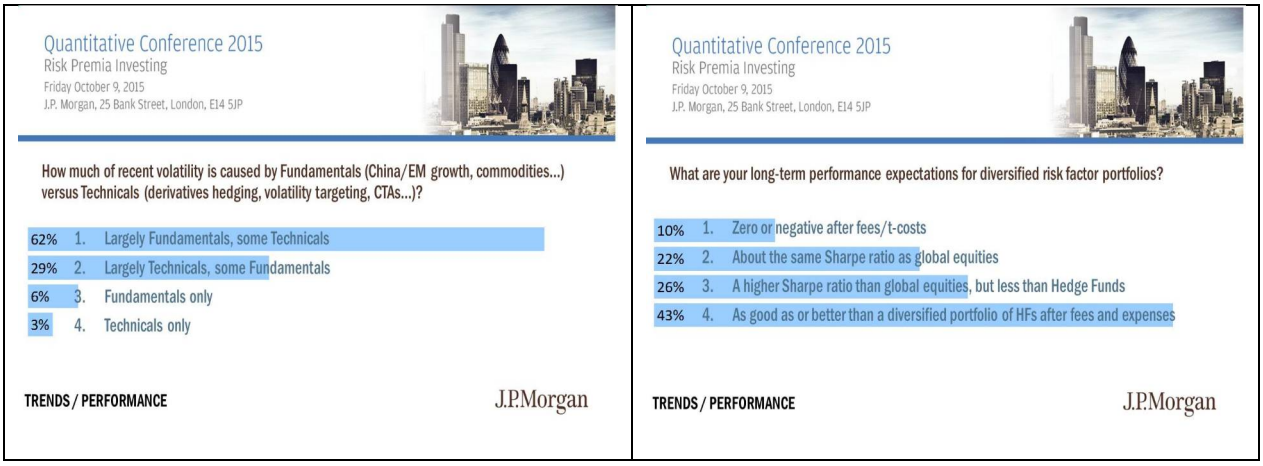
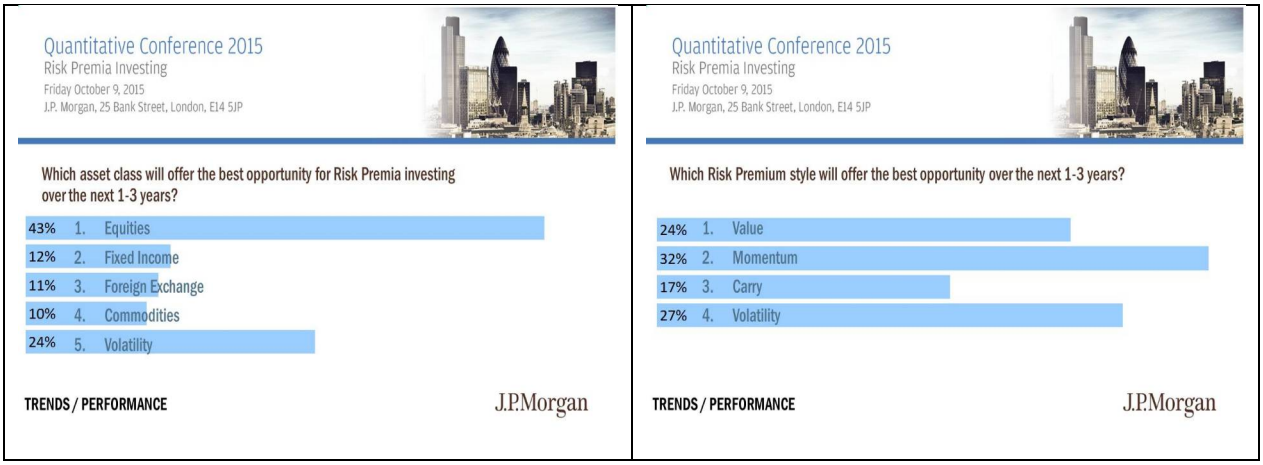
Detailed Client Survey Results





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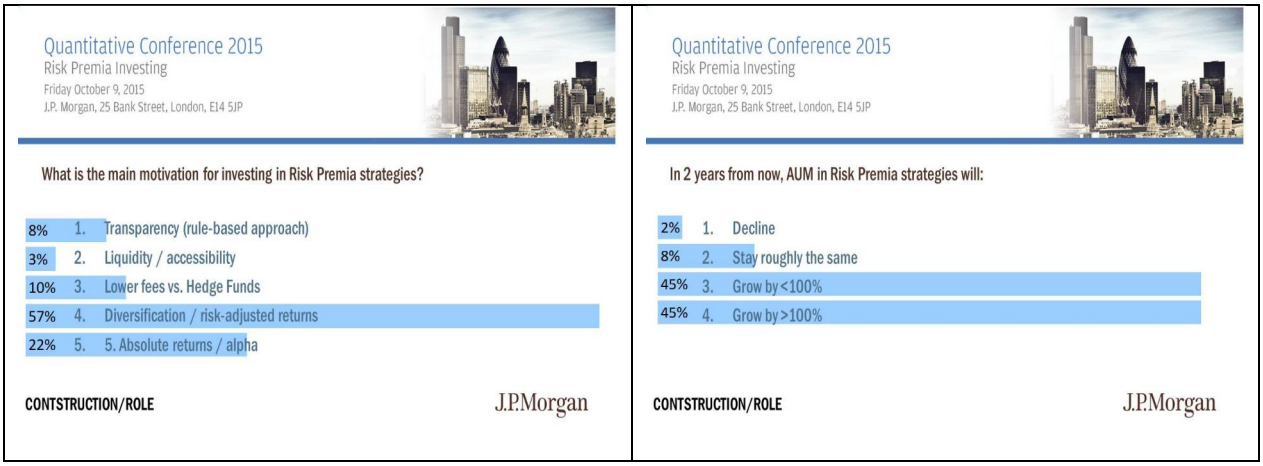

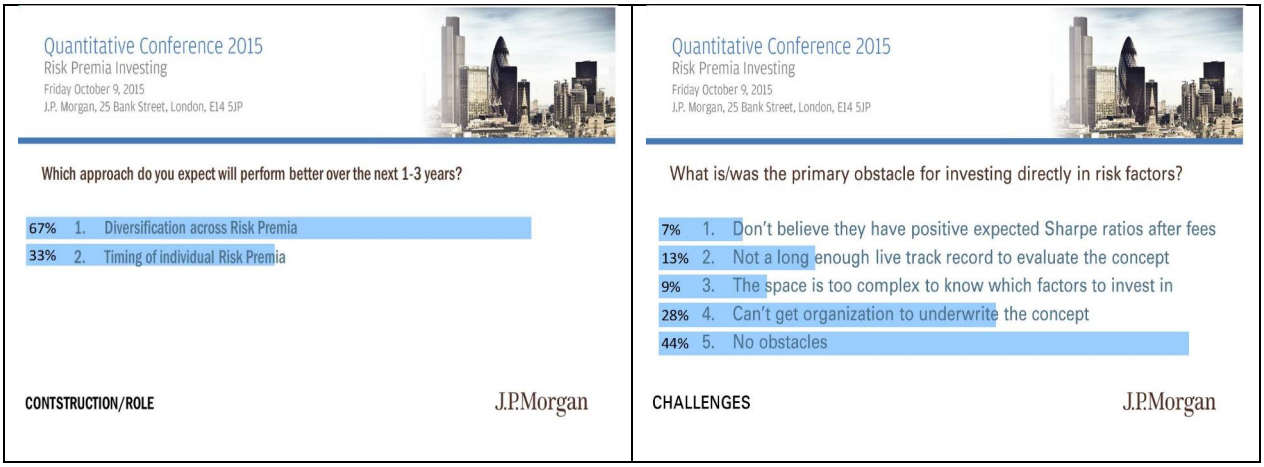

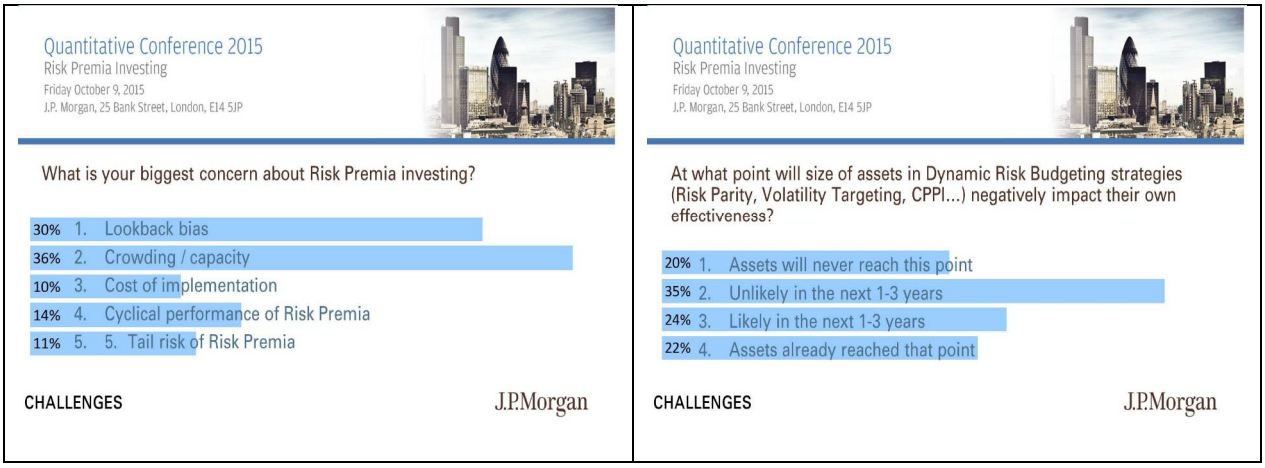

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When do Systematic Strategies Work?

Ewan Kirk, PhD
Founding Partner and CIO, Cantab Capital Partners

Summary

- Ewan Kirk's presentation focused on understanding when systematic strategies work.

- In setting the scene, he broke the initial question into 3 further questions: What do we mean by systematic strategies? What do we mean by work? And, what do we mean by when?

- Systematic strategies: they are rule-based investments. All risk-premia are rules-based investments. The rule tells you what to invest in, what size your investment has to be and it tells you when to change the size/direction of that investment. The rules need to encompass all states of the market. Cannot have a systematic rule that does not understand a state it comes by: then it's not a systematic rule. The rules need to have been run over the past in a rigorous and robust way. Importantly, cannot have a discretionary overlay. Additionally, you must have the data: the data must exist; time stamped and give a tradable price at that time.

- There are potential problems with systematic investments. It is a difficult and complex problem. Problems can arise if the strategy uses information from the future. E.g. survivorship bias, you can't trade high/low's as you don't know what they are until the end of the period, they can be over fitted to the past, they can have an asset or asset class selection bias, can imply unrealistic position sizes, can ignore costs (how much is it going to cost to rotate?). It is critically important to understand these behavioral biases as they are very real and cause real problems.

- What does it mean to say something works? The financial world is full of words which are used widely but aren't clearly or easily defined e.g. *environment, regime, risk, volatility, correlation, outperform, optimize*. One of the most pernicious is "work." The word can be used to mean: made positive returns, outperformed the index, acted as a hedge, acted as a diversifier, did what the investor expected, etc. Indeed we must understand what our objective is. We could just use absolute returns which is tempting (and that's why the financial press uses it). We could maybe look at outperformance of an equities benchmark, this however is hardly appropriate for bonds or commodities.

- We could use the convention used in other social science research: significance at the 95% level – the t-stat. It is the Sharpe Ratio of the investment strategy divided by the square root of the number of periods over which it is measured. The sheer randomness of finance makes this a very high bar. E.g. it is likely the true equity risk premium is around 3% and the average volatility of equities is around 20%. Therefore, we need 178 years

of data to be "confident" that equities return more than cash. A simple systematic strategy may raise the overall Sharpe ratio of a portfolio of equities investments considerably. Therefore, in some sense it "worked." So, by work over a significant period of time which should be related to the expected Sharpe, it should raise the Sharpe ratio of your portfolio not on a standalone basis.

- Thus by work, it may sound blindingly obvious thing to say, but they work in the past. This is fundamental to all systematic strategies. By definition you can test them in the past and so therefore that is what you do. Nobody would consider a systematic strategy which hadn't worked in the past. It is thus absolutely critical to understand: all the biases present in the test, what the objective function is for the investor, understand the significance of periods of underperformance and outperformance (generally the answer to this is "it isn't significant").

- Moreover, we can then try and understand will systematic strategies work in the future. Assuming our rules-based investing has worked in the past we can make some statements about the future. Systematic investments which have worked in the past are more likely to work in the future than any old random guess. "This time it's different" is an expensive phrase, and much influenced by recency bias. If systematic strategies were to stop working, what would be the process for them to stop working? Entire market characteristics change? Total economic disruption? These all seem unlikely so we can finally answer the question of the talk. So … when do systematic strategies work? Always … probably. Do not look for certainty, they will probably work.

Conclusions

- Systematic strategies are rules-based investments.

- A systematic strategy works if it raises the overall Sharpe ratio of a portfolio of equities investments.

- Systematic strategies will always probably work.

Q&A

- Does the scale of losses when a systematic strategic doesn't work matter? Ewan responded, clearly it does matter. You can look at the characteristics of the return. We would want something that never loses money. E.g. cross-sectional momentum, an interesting problem. Whether or not it lost money today, last week or last month you will always have behavioral biases. It's easier to overlook when you've lost 3% in a day. We've all forgotten about 2008, the days we lost 25% in a day. I'm interested in the psychology of investing in something where there have been many days losing 25% in a day.

- A further question asked how do you know whether a new strategy you've started is working or whether it has stopped working? Ewan answered by (jokingly) saying that whenever you put a new strategy into a portfolio it has a tendency of losing money in the 1st month. It's hard to continue with

this but you must: continue to run your back-test. If the real return does not look like the backtest it must be out. You must monitor performance; you must put some statistical significance on the test metric. If it's going to be drawdowns it must be drawups as well. Imagine there's a very large move is it in the expectation band? The hard thing to do is understand; impression we get is that methods fail to losses. I believe they fail due to random noise. We in essence, do not have enough time - the likelihood is that you almost never find out if the strategy has stopped. This is one of the hardest problems in any investment not just equity: it's not hard to come up with models/systems the difficult thing is to know when they're not working.

Our Key Takeaways

- Very difficult problems surrounding the systematic strategy space.
- Clear elucidation of systematic strategies being rule-based investments: what to invest in, what size your investment has to be, and it informs you when to change the size/direction of that investment, and that, importantly, there is no discretionary overlay.
- Hardest thing in finance is knowing when your strategy is not working

Momentum, Carry and Value: Time Series versus Cross Section

Matthew Sargaison
CIO, AHL/Man Investments

Summary

- Mr. Sargaison shared his thoughts on two approaches towards constructing Models for Momentum, Carry, and Value strategies i.e. the time-series and the cross-sectional approach.
- The choice between time-series vs. cross-sectional seems to be less empirical and more ideological. As an example, a quant equity strategy would build a market neutral long - short portfolio to hedge a common fundamental factor (i.e. cross-sectional approach). On the other hand, trend-practitioners such as CTAs are fully directional and are exposed to the underlying market beta (i.e. time-series approach).
- While the profits from adopting the cross-sectional (long / short) typically come from relative movements, the time-series approach profits from the underlying market movements.
- The speaker then shared signal construction and back-testing results from both the approaches for Momentum, Carry, and Value strategies across 4 asset classes: Currencies, Commodities, Equities, and Interest Rates.

- Interestingly, there is little difference in Sharpe ratios for both the approaches when looked at in combination across all asset classes. However, the Sharpe ratios for Momentum get much stronger following a time-series approach whilst Value on the other hand has much stronger performance following the cross-sectional approach.

- It was therefore suggested that Momentum could be implemented in a time-series whilst Value and Carry are better applied cross-sectionally.

- The speaker then took us through further analysis highlighting the low correlations within assets for the two approaches (with a few exceptions for same signals within FX and commodities).

- A PCA decomposition also showed the impact of the 1st principal component on the overall portfolio variance, potential workarounds i.e. either hedging out the 1st factor or concentrating the loading within 1st factor or perhaps a bit of both approaches.

- Finally, the Mr. Sargaison also highlighted how Commodities have exhibited higher stock market beta since 2007 (which could be attributed to their financialiation/ broader investment appeal).

Conclusions

- Generally the time-series and cross-sectional decision making is seen as an either-or choice, however an agnostic selection process i.e. ideological indifference is better.

- As the analysis in the presentation indicated, a combination of the two approaches yields better results than running a purely cross-sectional or time-series approach.

Q&A

- The first question was on using time-series modeling for FX as it might be biased to home currency effects. The speaker acknowledged that it would indeed work better after neutralizing for base effects.

- One more question was on whether there would be any effect of overlapping time-zones, for instance, having Japan, Europe and US in the same mix. The speaker highlighted that while there may be relations, they use a week of rolling returns to normalize.

Our Key Takeaways

- As an increasing number of quantitative processes expand into the cross-assets space, it does indeed make sense to identify the best approach for individual strategies rather than going through with a pre-conceived preference for one or the other.

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How Smart is Smart Beta?

Thomas Kieselstein
CIO, Quoniam

Summary

- Mr. Kieselstein started the presentation by comparing some of the more recent definitions of 'Smart Beta' with a 20 year old definition of Style Investing by Richard Bernstein - and not much had changed. He used the adage 'old wine in a new bottle' to sum up this opening.

- Then, a quick summary of the popular styles of smart beta (from low-risk, Quality to Size, Value etc.) and the implementation must include a realistic construction.

- An interesting slide was presented showing the long-term performance of these different types of smart beta and how the Value premium has deteriorated since the 1980s as has the Size premia (since academic publications on both proliferated). The more recently publicized Low Beta/Vol risk premia is also possibly now at risk of performance degradation.

- So what is new about 'Smart Beta'? It comes down to **construction**, some **new styles**, the **providers** and also the **demand**.

- Mr. Kieselstein goes on to comment on the low-risk anomaly and how it is not just to do with declining interest rate yields.

- Also concerns on demand vs. capacity were raised. Very broad brushed estimates indicate around USD 900 billion in low-risk Smart Beta, but this is at odds with the AuM in low vol from the Morningstar fund holdings database. The big unknown is the in-house index tracking implementations where there is no transparency.

- Further concerns on capacity were in time to invest – where a quick simulation showed that potential Min Vol strategies in EM might take more than a year to trade!

- Demand at the same time is rising - driving the price of low-risk higher.

- As to the providers – is there now a new type of manager for Smart Beta? And are they cheaper? Not necessarily as the asset-weighted expense ratios are still much higher than market cap or style index ETFs.

- Mr. Kieselstein concludes that Smart Beta is not always that transparent either. The fine print on a Low Vol MSCI World Index that uses unhedged currency risks from the USD perspective is in fact heavily biased towards US stocks! Something the end user should know but probably does not.

Conclusions

- Smart Beta is not really new
- While Low Vol does have a negative correlation to change in interest rates, interest rate regime dependencies are not as high as some think
- Capacity might become a big issue and more transparency is needed

Q&A

- There was some clarification on the number of stocks in the EM Min Vol portfolio, as a subset there was about 200 stocks (out of ~800 in EM)
- There was a question about the fees shared between Smart Beta providers, and Mr. Kieselstein pointed it really came down to how they split the cake!

Our Key Takeaways

- While it may be 'old wind in a new bottle' Smart Beta certainly has the investor's appetite under this new branding. Where there is increasing demand at some point capacity will become an issue and 'crowding' concerns will arise especially in less liquid markets like EM. Finally investors need to be better informed on the risks they are really being exposed to, and the smart beta providers can help this with better transparency and education on their products.

Risk Parity Portfolios

Michael Mendelson
Principle, AQR

Summary

- Mr. Mendelson began the presentation making a light reference to market movements during August and risk-parity on the receiving end of bad press.
- Sharing their motivation for having a risk-parity approach, the speaker discussed a review of their allocation where they found their portfolio risk was concentrated in equities and they were missing important risk premia.
- The approach is to allocate to each of the assets weighted by risk whilst making very few assumptions about the allocation. Put simply, the exposure to assets is proportional to their risk-adjusted returns (more where better, less where worse).
- Linking the risk-parity approach back to MVO, the speaker highlighted the similarities additionally noting that generally a fear of leverage keeps people from approaching risk-parity.
- Further emphasizing through a hypothetical representation of Japanese Pension Capital Allocation, it was suggested that investors that are mostly

risk-averse may already be following risk-parity, even if they don't realize it or choose not to call it such.

- Finally on the comparison with various other methodologies (MVO, minimum assumption, environmental balance etc.), it was put postulated that they may all be different roads but ultimately leading to the same goal.

- On recent acceptance and performance, it was highlighted that the approach has had a good time during and since the GFC both in terms of performance and AUM growth.

- The speaker also shared some of the common criticisms for risk-parity including their relative expensiveness to a 60:40 approach and that following the approach hurts Sharpe ratios.

- Further on criticism and media attention, it was mentioned that while performance has been hurt by commodities exposure, it has been made more difficult with the additional scrutiny and (incorrect) blame for the increased market volatility in August.

- To elaborate on the point that it wasn't risk-parity per se that led the selling pressure during August, the speaker presented that risk-parity accounted for ~0.36% of daily equity volume.

Conclusions

- Risk-parity remains an important approach for diversification and portfolio allocation.

- Performance of risk-parity portfolios has been under pressure especially from the commodities; however the approach follows a diversified exposure across asset classes some of which will do better while some others do worse.

Q&A

- Q: Is the better performance of risk-parity owing to the exposure to commodities. A: They are a diversifying asset and while the earlier performance has been helpful, the overall impact to the portfolio is limited.

- Several questions touched upon rates topic e.g. the relevance of the low yield environment to the success of risk-parity approach, a reference to Fischer-Black paper on low rates, Fed raising rates etc. Michael responded that they don't take a strong view on rates coming up on how they position. He also responded that backtests are not the most ideal way to do it and there could be forward looking numbers incorporated. Finally, he posited that the Achilles heel for a risk-parity approach is a real-rates shock just like Achilles heel for a general portfolio is stocks going down. Going back to the question on commodities, it was pointed out that the 70s were good for commodities but bad for everything else, and, therefore, diversification is essential.

- A question asked for insights on efficiency of risk-parity vs. tail-risk-parity. Michael mentioned that they have analyzed it and broadly the allocation for

either approach is similar. AQR also implement several controls, for instance, limits on leverage.

- Q: How do you achieve leverage? A: Michael mentioned they use inflation linked bonds and futures.

Our Key Takeaways

- We find a lot of interest in the risk-parity approach and while there is not a complete agreement in whether an investor running a risk-parity portfolio within a multi-strategy portfolio, there is no disagreement in their effectiveness from a both AUM and performance perspective.

- In a multi-asset space, a risk-parity approach is one of few approaches that has been tested and accepted by practitioners and academics alike.

Panel I: Insights from Risk Premia Managers

Panelists

Peter Emmevid, Head of Quantitative Investments, *AP1*

Devin Dallaire, CIO, Alternative Beta Strategies, *Magnetar Capital*

Renato Zaffuto, Head of Equities, *Fideuram Asset Management*

Markus Ebner, Head of Multi Asset Research, *Quoniam*

Anthony Lawler, Head of Portfolio Management, *GAM Holding AG*

We attempted to use this session in a way that each panelist shared their insights on risk-premia strategies, and in turn most made short presentations on their key topics. Below we present a quick summary of their discussions/presentations.

Peter Emmevid, Head of Quantitative Investments, *AP1*

- Mr Emmevid suggested that Risk Premia could be treated in two ways, firstly as 'just another portfolio' allocated with a weight such as 5%, or the alternative is to use RP as the building blocks of the fund, and strategically allocate to each RP strategy (along with cash).

- Developing internally versus externally is a difficult decision. Internal development offers benefits, while external products open up more opportunities with fewer demands. Peter did caution against a lack of academic research in some offerings.

- Peter said that RP should be benchmark for CTA (and other investments) but not as a replacement. The current benchmarks are not ideally set,

allowing some of these strategies to extract returns from beta (rather than true alpha).

- Peter also noted that they started looking at risk premia in 2012. They are always looking for new strategies that incrementally add to their overall portfolio, rather than test each as a stand-alone strategy. The overall aim is to reduce the funds dependencies on equity returns.

Anthony Lawler, Head of Portfolio Management, *GAM Holding AG*

- Mr Lawler noted that GAM has been investing in Risk Premia for over 4 years now (up-to 10 years for some products), with a new focus on Alternatives. They are seeking low correlations with existing strategies for their clients (the 'alternative' part). He further suggested that GAM uses a mix of internally and externally built products. However, GAM only uses external RP products when the cost and quality makes sense.

- Returns to RP are cyclical; some are predicable, and some are not. Combining the risk premia with an aim to take into consideration the non-normal correlations and a specific focus on tail properties. Key risk in the space is of over-promising; such as results that show Sharpe Ratios over 2. Their back-tests and portfolios show SR of 0.7 to 1.

- Focus on Value, Momentum and Carry (includes volatility) across all asset classes; equity, fixed income, FX and commodities. Insurance linked alternatives and others are not considered liquid enough to meet their daily requirements.

- Risk controls around exposures, and strong cost focus are important. The market is becoming more competitive now, and in some cases it can be more cost effective to buy external IB products rather than build internally.

- Anthony said that the expected draw-down analysis is a big focus of their risk process. Don't focus on normal volatility, but rather the tail events and aim to protect capital during these extreme periods. As a result the risk premia with fatter left tails have lower weight allocations than expected.

- Mr Lawler concluded by stating that an understanding of crowding is important. Unless you are in an infinitely deep market you must consider the squeeze in spreads as the trade becomes more common. Also know your market impacts and other trading costs.

Devin Dallaire, CIO, Alternative Beta Strategies, *Magnetar Capital*

- Mr Dallaire began by explaining how they are a traditional asset and hedge fund manager. Historically Magnetar has had a single minded focus on delivering alpha. But the fastest growing part of the business is on alternative risk premia strategies.

- Magnetar use a strategy specific benchmark approach to determine the value added, which is critical when creating 2 & 20 products. Devin said that a pure index is the simplest benchmark but often not applicable to Hedge Fund products. Using factor loading risk and return reporting framework

make sense for Long and L/S investments, but less so for specialist or dynamic products.

- Risk arbitrage or distressed credit strategies, which are focused on dislocation and structural change, mean Multi Factor Models often don't work at explaining risk. So for these reasons, Systematic Strategy Replication (SSR) is used to construct an investment model, which is used as a benchmark, rather than simply using the stocks universe.

- Devin spent some time explaining the process of replicating a fundamental event driven HF to build an SSR, focusing on the parts of the process that can be automated and arranged effectively and cheaply, without using expensive and time consuming processes such as building stock models and meeting management.

- Mr Dallaire then showed how the systematic SSR can be used as both a benchmark for the HF manager, and also as an alternative RP product.

- He concluded with a comparison of risk and return. Devin said that it was interesting how, relative to an equal weighted benchmark; the alpha is greater, the beta is higher, the value bias is higher, size bias lower, but more importantly the risk lower. He also noted that the dynamic exposure to factors (and sectors) is difficult to capture when using a classical risk model.

Renato Zaffuto, Head of Equities, *Fideuram Asset Management*

- Mr Zaffuto began by suggesting that they are facing a big switch from Government Bonds to factor investing strategies using dynamic long term portfolio to exploit factor premia in Italy.

- He suggests that different strategies should be focused on at different times, and as such is an advocate of market rotation models and factor timing. At some stages of the business cycle it is better to switch between strategies and factors based on macro environment and volatility environment.

- The aim of Fideuram's capital protected fund is a focus on reducing draw-down. They exploit traditional market exposure beta, smart beta (low vol, value, momentum, size etc) and rotation. Historically they viewed the investment process along two dimensions but lately a third has emerged. First dimension is country, second is sector, and the new third is style, all of which can be timed.

- Renato was complimentary of current trading systems and product offerings, stating how easily it was to change from one basket to another using equity swaps. He noted this style switching was more difficult historically. They time markets using an overweight smart beta portfolio vs. overweight market portfolio.

- He noted that by utilizing a stock basket approach rather than simple country or sector indices allowed greater control of not only the style to invest in, but also the side. He suggested switching from decile 1 or 10 was possible, but also an added benefit was that they can now target decile 2 when appropriate.

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Markus Ebner, Head of Multi Asset Research, *Quoniam*

- Mr Ebner suggested that the lack of yield in bonds has forced investors to take risk in equity. He warned that bonds can't cushion us from any downturn as they have in the past (assuming traditional 60:40 allocation model) because of these low yield levels. As a result Equity Risk Premia are becoming more important to offer the required levels of diversification.

- Quoniam use 5 standard risk premia and 11 alternative risk premia in their new funds which have been launched recently.

- Is the correlation between risk premia stable? To answer this Ebner has used a simulation based on different risk premia across asset classes. The Long-Only market risk premia; US Equity, Govt Bond, Corp Bond, REITs, Commodities. 11 alternatives are dollar neutral and include; Momentum, Size, Value & Carry across different asset classes.

- The simulation shows that standard equity and bond portfolios loose out in a Lehmann type scenario. In contrast the 16 risk premia have more stable returns in such a scenario.

- Digging deeper Markus found that Market RP are highly sensitive to a series of common risks. Alternative RP are still sensitive, but much lower. Finally he found that a combination of all RP has the lowest sensitivity, although the combination still looses money in this scenario. The additional RP also reduces portfolio's excess kurtosis (less fat tail exposure).

- In conclusion he noted that RP portfolios are less sensitive to macro economic factors, inflation, liquidity and volatility. They also have superior (return) distribution characteristic (c.f. Long Only). Linking this to the current scenario of a decline in EM and pending rate hike in US, we expect poor equity and commodity outlook. Bonds wouldn't be able to protect a portfolio. Under this scenario a combined RP portfolio is less affected.

Question to Dallaire. You talked about risk on/off risk premia. This should be uncorrelated to market risks. I imagine it has some interesting properties. What is the capacity in this space? Say, if a traditional risk manager, how much extra capacity is there?

It depends on which event you focus on. E.g. spin-offs only have a handful of events per year. So, these have limited capacity. On the other hand, Buybacks, Debt Redemptions and Repurchases have hundreds of events per year so way more capacity. Also, your definition of the universe in terms of market cap and liquidity cut-off - influence the number of stocks, returns and capacity.

Question to Zaffuto. Some suggest market regime timing is the holy grail of quant investing. Rule based approaches can be late in the process and incur excess turnover. How do you address these concerns?

We update our model 2 times per month. The current environment is impressive due to its low volatility displayed between February and April. In September the model changed momentum. How you change from one view to another is as important as the macro indicators.

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The adjustment process is not so quick. The point of the model is to use; inflation, inflation expectations, some GDP or cycle proxies like PMI, all of which depend on medium frequency data, along with prices or commodity prices. What is important is that 10 days ago we changed factor exposures, even though for 1 year we have had more growth than momentum.

Question for Emmevid. How do you think about sizing positions between direct and externally managed strategies?

A lot of pension funds setup with 5% of the fund allocated to risk premia. But it can be done differently. For example a 10% allocation to risk can be given to JPM or others. We keep it in house, we use a style bucketing approach and allocate between buckets. We started managing everything internally using monthly rebalancing of futures. As we scaled control became more important, and demanding on infrastructure and people, but it is important to keep some knowledge internal.

As to how often to rebalance, it is a trade-off. For a backtest you can use long-term/short-term, volatility tilting etc. As others have mentioned today, the historical back-test is good, showing SR of 2. I'd be happy with 0.5. I have different views on correlations, so my allocations might be different. I'm not a strong believer on tactical views because it's difficult (useful to tell stories as some think it is more important to do something than nothing).

The Next Frontier of Factor Investing: Corporate Bonds

Jeroen van Zundert
Senior Quantitative Researcher, Robeco

Summary

- Mr. van Zundert presented on a possible factor investing model for corporate bonds, using parallels from the ample research already available from equity markets. The aim being to earn the bond default premium in a 'smarter' way.

- First with the results, factor investing in the corporate bond market realized improvements in Sharpe Ratios of up to 0.3 in both Investment Grade (IG) and High Yield (HY) markets. The multi-factor approach in the corporate bond market gave Sharpe ratios twice as large as the traditional bond market benchmark.

- SIZE: buy bonds of small firms, avoid bonds of large firms - because small bonds carry an illiquidity premium. LOW-RISK: buy low risk bonds, i.e. based on high rating vs. short maturity. VALUE: buy cheap bonds, calculated as the credit spread = market spread/fair spread, where fair spread = model using time-to-maturity and credit rating. MOMENTUM: buy winners, using past 6-month return with a 1 month lag

- The data was the index constituents of the Barclays US Investment Grade and High Yield indices, Jan 1994 to Dec 2013. Empirical tests in both IG and HY showed that the factors generated higher returns than the market, and always better on a risk adjusted basis too. Testing for multi-asset portfolios also showed improvement in risk-adjusted returns when using multi-factor portfolios instead of the market index.

Conclusions

- There is abundant research on factor investing in equities, and this presentation is an attempt to transfer this into the corporate bond space.
- Factor investing in corporate bond markets can improve risk-adjusted returns in the empirical back tests.
- This has been slow to be adopted in practice, but, hopefully, this will now accelerate with research such as this.
- Liquidity and transaction cost concerns can be overcome with careful implementation.

Q&A

- The first question was the concerns in applying these factors to smaller bond markets; would the size bias increase and what about capacity? Mr. van Zundart said techniques for limiting turnover can make this still viable. In the appendix he shows the net performance measures.
- What about the classification between IG and HY – is it perhaps arbitrary at times? Mr. van Zundart agreed it can be problematic especially when IG bonds that are 'losers' get downgraded and 'leave the universe.' It's a problem that is present with the momentum factor for example.
- Why has this not been adopted or discussed until now? Mr. van Zundart stated that research in bonds is about 20 years behind that of equities. Hopefully work like this can help increase the acceptance of bond market factor investing.

Our Key Takeaways

- As equity quantitative research it makes perfect sense to us to try and apply the same factor techniques to other asset classes. Mr. van Zundart is 'preaching to the choir' with this research and we look forward to seeing more work done on factor investing in corporate bonds, especially to explore the liquidity and t-cost concerns further.

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Alternative Risk Premia: An Active Risk-Based Framework

Jerome Teiletche, PhD
Head of Cross Asset Solutions, Unigestion

Summary

- Jerome Teiletche's presentation aimed at introducing an active risk-based framework for alternative risk premia (ARP) which attempted to address how to allocate between ARP. The standard approach in industry is to use Equal Risk Contribution (aka Risk Parity). Taking an agnostic approach, can we do more?

- Jerome started by highlighting some stylized facts of ARP. ARP benefit from risk control whereby the risk-return profile can largely be improved by controlling the level of risk. Secondly, a point of contention and non-consensus, ARP are not immune to economic and market conditions. As an example they behave differently during NBER recessions. Jerome highlighted 9 ARP during recessions in the US and found asymmetric return profiles across the ARP. There were some patterns that made sense however performance was not broadly homogenous.

- In allocating to ARP, the risk-based investing solution means to take the "no expected returns" hypothesis to get to the solution. This indeed does lead to robustness however common criticism is that the "no views" feature might lead to more risks. The question then is: how to integrate tactical views in a risk-based strategic framework. Here we have from J.P. Morgan their Style Rotation work. We detail an analytic solution which marries risk-based investing with Black-Litterman active views approach.

- A typical risk–based portfolio would use volatility-weighting scheme; higher (lower) volatility assets are given lower (higher) weights. Albeit simple, well grounded as is equivalent to RP or maximum diversification portfolios for constant correlation case, a solution used by practitioners such as multi-asset risk parity managers or CTAs, outperform other traditional asset allocation methodologies, and transposition in the risk-based world of characteristic-based portfolio literature.

- We incorporate active views by interpreting the active portfolio deviations. These deviations are an increasing function of the confidence level, increasing function of the volatility target, increasing function of the difference between views and implied returns and a decreasing function of the individual (idiosyncratic) risks. Here, assets with higher (lower) expected Sharpe will receive positive (negative) active weights. We can calibrate the confidence in the views by monitoring the tracking error associated to the active Black-Litterman weights for which there are several choices the most common of which is the simple target tracking-error rule.

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- Jerome tested the framework on 9 ARP spread across different asset classes (FX, Equity, etc). Sharpe ratios range from 0.3 to 0.8 (Sharpe for traditional assets over the same period are ~0.3). Average correlation is almost zero: some sizeable correlation in the equity space or among similar styles (momentum). Assets with higher volatility or poor diversification properties (high concentration factor) necessitate higher implied returns to be held at optimum. On average, implied and historical Sharpe Ratios are fairly consistent, suggesting that the risk-based portfolio would have been mean-variance optimal over the period.

Conclusions

- Alternative risk premia are not immune to economic and market regimes. And they are not reacting to them in the same way.
- Investors might incorporate this information both tactically (RP) and strategically (dynamically shifting allocation).
- The framework presented is useful in that regard as it allows investors to incorporate active views on top of a risk-based portfolio in an integrated way.

Q&A

- The first question was on how to actually incorporate views given differing regimes? Jerome responded that the idea is to build a more diversified portfolio.
- The second question was on assessing the risk of the RP portfolios, how do you choose the period for view? Jerome responded that the timescale for regimes can be different. We isolate periods of the regime and compute the return over the period fore the different risk premia and compare.

Our Key Takeaways

- ARP are long/short strategies to extract systematic returns from investment styles.
- ARP are not immune to economic and market regimes; we leverage a systematic framework to determine the optimal portfolio in different regimes.

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Digital Revolution: Smart Alpha or Smart Beta Opportunity?

Gerben de Zwart, PhD
Head of Quantitative Equities, APG

Summary

- Gerben de Zwart began with an exploration of the digital revolution, noting the change from analog, mechanical and electronic technologies to the digital age. In 1984 just 8% of US households had a personal PC, by 2000 this was over half, and today tablets and smart phones are almost ubiquitous.

- The growth of not just technology, but also data is exponential. Gerben asked the audience to consider how the digital revolution could reshape quant investing. He cited three key technological catalysts; the internet, big-data and machine learning, suggesting these should provide opportunities for Smart Alpha or Smart Beta.

- Dr de Zwart showed some interesting details of the connected and publicly available datasets listed on DBpedia. The dataset extracts structured information from Wikipedia and makes it available. The aim of this service is to allow machines to learn facts and relationships about such things as; CEO's, Cities, Populations etc.

- In the next segment of his talk, Gerben cited the Gartner Group's definition, stating that "'Big Data' is high -volume, -velocity & -variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making".

- He argued that there are challenges to combine different frequency data (Annual Reports, Twitter, High Frequency Trade Data) and how to convert this mix of un-structured and structured data into information.

- The Big Data Eco-System is complex, with no 'one-size fits all' solution, according to de Zwart. New infrastructure such as Hadoop and NoSQL are emerging to store the wide variety of data, along with new analytics, applications, and start-up companies (as well as internally built systems). Gerben suggested that any predictive big-data intelligence should be built internally (to best protect IP).

- Next Dr de Zwart cited a selection of academic research covering linguistic-based systems such as News, Twitter and Conference Calls. He suggested the data is becoming commoditised with availability on Bloomberg, Factset and others. Additional research on unstructured data included work showing links between customer firms and suppliers returns and also between social ties such as school attendances.

- Finally Gerben described a selection of artificial intelligence systems based on complex algorithms such as; regression models, decision trees, random forests, and (un-) supervised learning.

Conclusions

- Dr de Zwart concluded by stating that the Digital Revolution is reshaping the quant landscape, due primarily to three technology catalysts: the internet, big data and machine learning.
- He suggested that adapting big data intelligence in an early phase could provide an alpha opportunity, and that eventually index vendors or investment banks will follow with smart beta offerings.
- APG started several initiatives to explore the added value of big data for the long-term investor, starting with a framework across several different projects. He suggests that these should start off small, and be killed off early if they don't show success.

Our Key Takeaways

- Big Data is often un-structured making compatibility with existing structured database systems limited. For this reason new storage systems and analytics are being developed for on-line or in-house use.
- Although cloud based and other shared systems are available, any proprietary 'alpha-creating' IP should be kept in-house.
- Big Data analytics can be created to investigate all manors of novel relationships between firms and people, with the potential to add alpha or reduce risk.

Combining Risk Premia with Fundamental Stock Selection

Bas Peeters, PhD
Head of Quantitative Research, NN Investments

Summary

- Dr. Bas Peeters delivered the last presentation of the day, highlighting the process of bringing together the best from two worlds i.e. a quantitative factor driven investment premia and a fundamental stock selection process.
- From the quantitative perspective, the process involves identifying and ensuring positive exposure to equity risk premia (ERP). He suggested

having exposure to multiple (uncorrelated) factors helps reduce risk and improves performance. Examples put forward were Value, Quality and Momentum ERP.

- From the fundamental side, the speaker discussed processes focusing on the longer term with extensive bottom-up research capabilities. Thematic idea generation and ESG integration were also discussed.

- In a slide summarizing the combined approach, the speaker highlighted the ERP-overlaid-fundamental approach as Quality ("companies must create value"), Valuation ("must not be overvalued"), and Momentum ("should appeal to the market").

- Whilst the fundamental approach helps harvest idiosyncratic alpha, the quantitative approach helps to systematically exploiting factor anomalies.

- He provided evidence to show that the two approaches are complimentary as the correlation between the quantitative and fundamental IC is -37%.

- In discussing the challenges, the speaker highlighted three concerns from the fundamental approach (i) the coverage of stocks would be limited to as many covered by the analysts (ii) the well-documented optimism bias of analysts (i.e. more buys than sells) and (iii) since the fundamental analysts are a diverse group of people, the views cannot be easily cross-applied across coverage.

- It was finally shown that combining the two approaches leads to increase in the information ratios and a structural positive factor exposure.

Conclusions

- The quantitative and fundamental analysis may be both as similar as chalk and cheese but it is indeed possible to combine them for an improved investment process.

- On one hand, high conviction fundamental portfolios can benefit from having positive factor exposures (e.g. "cheap biotechnology," "quality miners" etc.) and on the other hand, a factor portfolio could be made more robust by having a fundamental overlay (e.g. adjusting factor exposures to macro event surprises).

Our Key Takeaways

- This presentation illustrated how we have seen investment managers and processes evolve since the financial crisis. There has been a steady increase to the number of "Quantamental" managers we serve in several ways, such as through bespoke quantitative screening criteria, regime-specific thematic basket ideas, identification of factor-driven portfolio risk and so on.

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Panel II: Insights from Risk Premia Managers

Panelists

Philip Seager, Head of Institutional Strategies, *Capital Fund Management*

Yazann Romahi, PhD, Head of Quantitative Strategies, *J.P. Morgan AM*

Francois Millet, Head of Quantitative Fund Development, *Lyxor Asset Management*

Stuart Doole, Director, New Product Development Research, *MSCI*

Luc Dumontier, Senior Portfolio Manager, *La Francaise Investment Solutions*

We attempted to use this session in a way that each panelist shared their insights on risk-premia strategies, and in turn they all made short presentations on different topics. Below we present a quick summary of their presentations.

Francois Millet, Head of Quantitative Fund Development, *Lyxor AM*

- Mr Millet highlighted the evolution of α and β and how smart β strategies provide low cost access to conventional, well-researched anomalies such as Value, Size, Quality, and similar risk factor exposures.

- From a risk-management and scalability perspective, a portfolio with concentrated holdings based on stock-picking on one hand exposes to a lot of idiosyncratic (stock-specific) risk and on the other hand is also less likely to be scalable. Citing academic studies, the presenter posited that over 90% of institutional portfolio returns were explained by various risk factors.

- The presenter also emphasized the importance of making a distinction between well identified risk-factors and those offered as a result of data mining and misleading marketing.

- Finally, the presenter highlighted the diversification benefits to these risk-factor strategies and stressed that instead of being seen as a threat to active managers, they offer opportunities in the realm of hedging and providing access to other risk-factor exposures.

Luc Dumontier, Senior Portfolio Manager, *La Francaise Investment Solutions*

- Mr Dumontier shared his thoughts on myriad universe of commodity risk premia and ways to implement it in a multi-asset framework.

- Primarily addressing the mitigation of risk, the presenter discussed the heterogeneity of the commodity universe through the method of a PCA decomposition. Unlike equities and fixed income, where the first principal component explains 60-70% of variance and the second principal components explains less than 10%, the commodities universe has under 40% variance explained from the first and over 15% from the second.

- Finally, the presenter stressed upon the importance of robustness of weightings within inter-commodity allocations and variations within

matching the long and short legs of portfolio (e.g. accounting for changing weather, old vs. new crop etc.).

Philip Seager, Head of Institutional Strategies, *Capital Fund Management*

- Mr Seager shared his thoughts and experiences on deconstructing hedge fund returns and their capabilities to reverse-engineer CTA and Hedge Fund indices.

- The presenter highlighted CTAs that have been around for longer periods typically have a Sharpe ratio of ~0.5 and the performance spreads conform to the mean; in-line with the Gaussian statistics.

- Interestingly, the Sharpe ratio has a higher probability of increasing when non-CTA managers are combined; highlighting the strong positive correlation among most CTA managers.

Yazann Romahi, PhD, Head of Quantitative Strategies, *J.P. Morgan AM*

- Mr Romanhi discussed potential improvements to multi asset allocation strategies, by using risk factors and risk premia as the building blocks.

- The focus was on building efficient portfolios by maximizing exposure to compensated risk premia (Value, Momentum, and Carry) and using uncompensated risk factors (such as sectors, regions, and economic data such as inflation) as tools for diversification.

- The presenter discussed how a factor risk parity approach provides for improvements over a traditional balanced (60:40), and a traditional risk-parity approach (though a long/short factor risk parity portfolio might use slightly higher leverage).

- Finally, the presenter showed the performance comparison of a global developed market index and how a diversified factor index outperforms this benchmark with a 95% upside participation and 74% on the downside. Generally, the beta of a factor based allocation portfolio is lower than the traditional approaches whilst offering superior results.

Stuart Doole, Director, New Product Development Research, *MSCI*

- Mr Doole spoke about the evolving landscape of 'Factor investing' and underlying challenges in the space.

- To highlight the changes in investor preferences, the speaker charted the trends from the 1960s (portfolio returns) through 1980s (where returns were segregated in to α and β) and in 2000s (where factor investing has been also added to traditional α and β). Particularly, the growth in AUM tracking their factor indices has grown ~6-fold over the last 3 years.

- While on the active side, most of the benchmarking has been in the Income / Dividend strategy space, by contrast the growth on the passive side has been in favour of Minimum Variance/Low Volatility. Taking this as an example, the presenter shared intricacies of constraints and optimization on construction of a factor index addressing biases (sector, country, style), turnover and investability.

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- The presenter further highlighted recent innovation in combined approaches (top-down, bottom up) and an approach towards localization of these factor indices in international markets.

- Finally, the presenter addressed concerns of crowding into factor indices and highlighted that systematic factor investing is not a recent invention but a practice that has been in place since at least the 1980s.

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