THE CFA SINGAPORE Quarterly

CFA Society Singapore

Issue 22 | July 2016 | www.cfasingapore.org

5 annual

Forecast Dinner

David Wong
Kay Van-Petersen
Michael Thompson, CFA
Arun Kelshiker, CFA, MBA

9

Multi-Asset investing

Pranay Gupta, CFA

14 investing in

Renewables

Jay Mariyappan, PhD

18

Turning Point

Joerg Kuehn
Louise Tagliante

Multi-Asset Investing

It is well established that ***asset allocation*** contributes most of the returns of a portfolio. Some 90% of variation in total plan return was explained by asset allocation (Brinson, Hood and Beebower, 1986). The remainder comes from stock selection, bond selection or manager selection.

Yet the investment industry employs far more stock and bond analysts than asset allocation specialists, and there are far more investment products from fund management firms focusing on security selection relative to a market benchmark, rather than asset allocation. Even pension funds spend the majority of their resources on selecting relative return active managers, rather than allocation.

The industry only has a disproportionately small group of people involved in allocation, when compared to its importance to a portfolio.

Inefficient diversification

A typical allocation strategy is 60% to equity and 40% to fixed income. Allocation is also usually done over 8 major asset classes:

- The 4 equity regions of US, Europe, Asia and Japan.
- The 3 fixed income categories of sovereigns, investment grade and high yield bonds.
- A commodity basket.

The traditional investment approach believes that investing in multiple asset classes lowers risk through a diversified portfolio.

However, data from 2000 to 2012 showed the correlation of returns between equities in the US, Europe and Asia Pacific region to be as high as 80% to 90%. Correlation between corporate and sovereign grade bonds was also as high as 90% to 95% when the credit beta is removed.

"Returns depend not so much on whether you have invested in a US index, an European index or an Asian index but whether you've decided to invest in equities," Pranay Gupta, CFA, Head of Multi-Asset Strategies at Fullerton Fund Management.

Despite the accepted fact that a substantial part of the risk and return of any portfolio comes from asset allocation, we find today that the majority of investment professionals worldwide are focused on security selection.

Multi-Asset Investing: A Practitioner's Framework questions the basic structure of today's investment industry and outlined fresh methods of reducing risk and increasing diversification that address shortfalls of the traditional investment process.

Its author, the award winning fund manager Pranay Gupta, CFA has been developing multi-asset investing methodologies since the time he worked for APG, the Dutch government pension fund. Over the last 15 years, his multi-asset toolkit has continued to expand and prove useful.

He addressed CFA members at a Professional Development talk on 30 May. All charts in this article come from Mr Gupta's book.

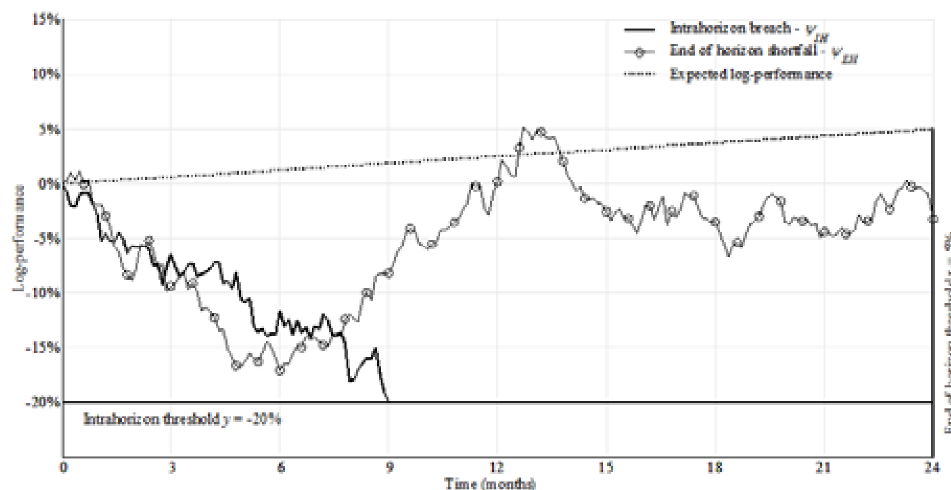


Illustration of the risk decomposition in intra-horizon and end of horizon risk.

Harnessing equity risk premium

A second basic belief is that investing in equities harnesses a long-run equity risk premium and is a hedge against inflation. When asset owners create policy portfolios, a 3-year horizon is commonly used.

Mr Gupta has found that while returns for 5-year and 10-year rolling periods over the course of 100 years have generally been above zero, the return for a 3-year rolling period is much more volatile, and can range from a negative zone in excess of 10% to a positive of more than 20%.

"From a practical standpoint, if we have an absolute return target, there is nothing like the long term horizon. In reality, institutions are people with a much shorter investment horizon that could be quarterly or annual. No one waits 30 years to believe if your investment was the right thing to do," he said.

Intra-horizon drawdown risk

"Assume you hold the stock in Chart 1 and expect to get a 5% return over 24 months. If the stock goes down by 20% after 9 months, chances are you will sell the stock even if you were perfectly right that the stock would have gained 5% if you had held it for 2 years. The problem is the stock has touched your threshold of maximum loss.

"We know that markets can go up and down. But when you lose money in a crisis, bosses and government bodies will tell you that's a risk that they cannot take.

"We know individuals who patronise casinos, when they touch their threshold of loss, walk out and never regain their money again. And that's what we do in the investment space. We don't measure this risk of breaching tolerable risk threshold that leads to investment closure.

"Even though a longer investment horizon increases the chance of reaching your investment objective, the probability of an intra-horizon drawdown also goes up. For example, the probability that the STI falls 10% tomorrow is quite low. But the probability of the STI falling 10% over the next 5 years is much higher. As we extend the time horizon from one day to 5 years, the chance of a 10% loss goes up dramatically.

"But we don't measure, monitor or manage this intra-horizon risk in our portfolios. We don't have the tools to do it. And this leads to the scenario that portfolios are normally not aligned with the risk tolerance thresholds of our clients.

"When we are constructing a client portfolio, we always ask the client: *What is your target return?* But the next question should be: *How much money are you prepared to lose at any given time?*

"If the committee says, *I can only lose 2%*, that translates into the cap on the horizon that the investment is allowed to have. You can only have a long term horizon if you truly do not need that money during your intended investment period," he said.

Mr Gupta proposed using a tail-risk measure that comprises of intra-horizon risk and end-of-horizon risk as this should lead to a portfolio with fewer unexpected outcomes.

Alpha-beta separation not a must

"The *capital asset pricing model* segmented investment returns into alpha and beta. Today, it is the industry basis for passive management and active management.

"Ten years ago, if a fund manager put money into China, and China was not in the benchmark, he was considered really smart, and the return was counted as alpha. Today China is in the benchmark, so if you invest in China, it is beta. Similarly, 50 years ago if you had figured out that low P/E stocks generally outperform the market, this was considered alpha. Today if you follow this strategy, you are given a Value benchmark, and it is considered beta.

"As time goes by, all these factors that we thought were *alpha*, as they became available in investable form, became *beta*. Risks which were non-commoditised in the past (like alpha) can be now be commoditised to become available in liquid, cheap forms (like beta). This can be expressed using the *arbitrage pricing theory* framework, which says that return on capital is a function of the risk that you take.

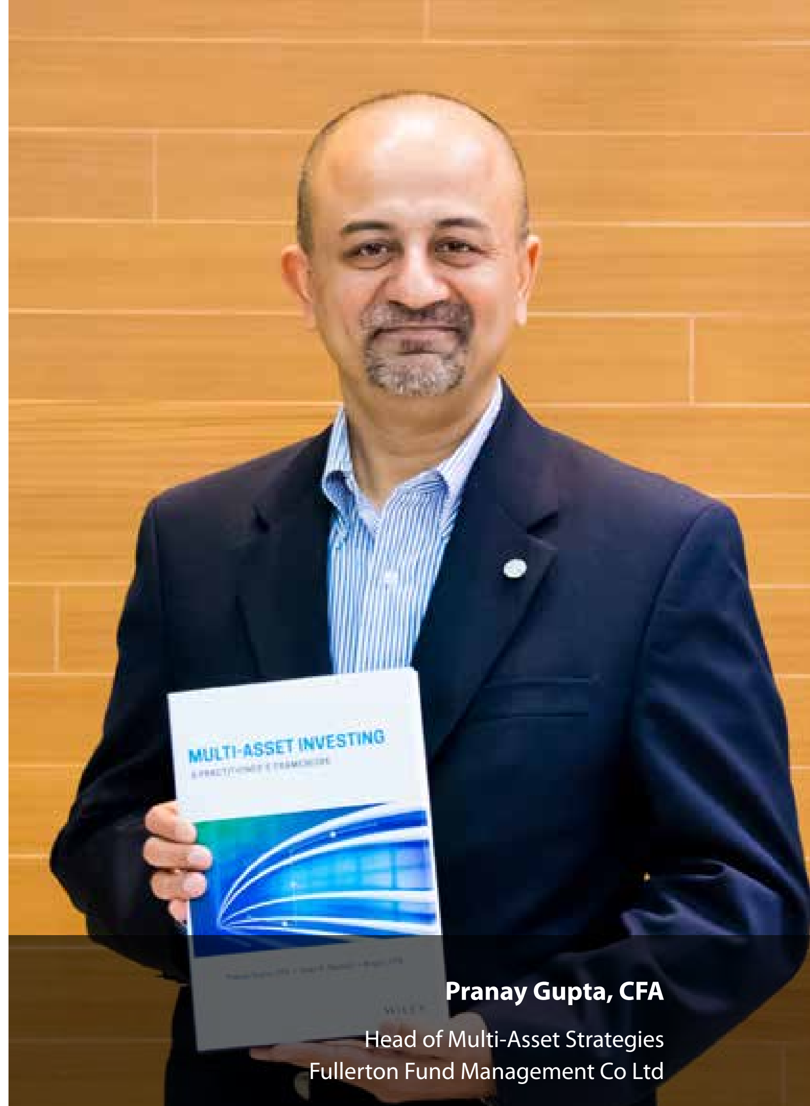
"In the US, we consider market beta to be the return to the S&P500 index, and size, value and momentum are considered systematic risk factors. However, we cannot consider this to be universally true across all global markets. If you asked somebody, *'Why do you invest in Asia or Emerging Markets'*, they will tell you, it is because of high economic growth, outsourcing, domestic demand or population. These turn out to be the systematic factors in Asia, and there are no universal systematic and unsystematic risk factors across the world.

Redefining risk premium structure

"When we talk about equity risk, it is equity return over risk free rate. When we talk about credit risk, it is credit spread over risk free rate, and so on. But from an allocation standpoint, this does not make sense because what you would like to have are buckets which are not correlated to each other. We would like to have factors that are as distinct as possible from each other, but here they overlap.

"My colleagues and I defined equity risk premium as that which is above credit risk premium and credit risk premium as that which is above the sovereign risk premium, which in turn is above the risk free rate. We then separated out equity and credit exposures into buckets that are relatively uncorrelated to each other.

"The first thing we did was: Instead of changing allocation structure, we looked at what managers we had and analysed what were the risk factors that each of them provided exposure for. Once we have done



Pranay Gupta, CFA

Head of Multi-Asset Strategies
Fullerton Fund Management Co Ltd

Mr Gupta has 25 years of experience in Europe, UK, US and Asia, managing portfolios in all global liquid asset classes. As Chief Investment Officer for ING Investment Management and Lombard Odier in Asia, he was responsible for overseeing US$85bn in institutional, retail and insurance assets with over 250 investment professionals across 11 countries at ING, and for the management of US$8bn of multi-asset absolute return portfolios at LOIM.

While at Lombard Odier, Mr Gupta was awarded as the Best Discretionary Asset Manager in Asia for two consecutive years.

Prior to this, he helped manage US$55bn in multi-asset hedge fund investments in London, and a US$22bn multi-strategy fund in Amsterdam. He has also been the Chief Investment Strategist for Societe Generale, Asia and Head of Quantitative Research for JP Morgan Investment Management, New York.

Mr Gupta's areas of experience and interest include asset allocation, investment strategy and risk management. A detailed discussion of quantitative approaches to multi-asset investing can be found in his book, ***Multi-Asset Investing: A Practitioner's Framework***.

Pranay Gupta, CFA, at autograph session after his talk on Multi-Asset Investing. The event was organized by CFA Singapore's *Professional Development Committee* and took place at the SGX Auditorium on 30 May.

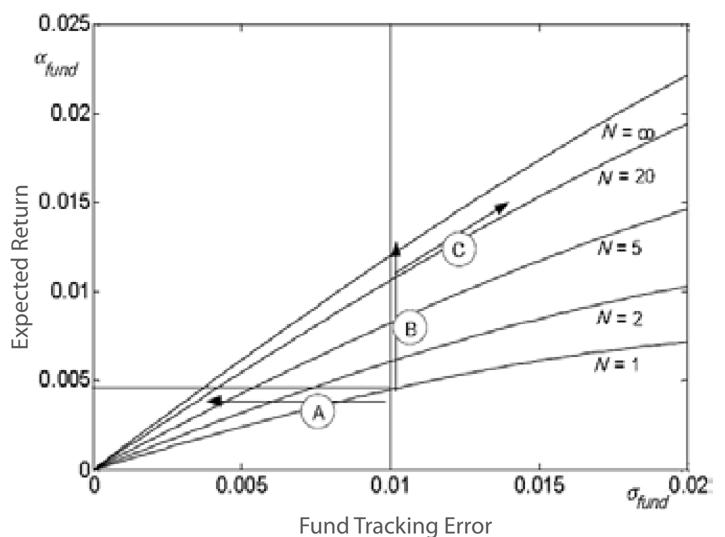
that, we started to create strategies across diversified structures that gave us the exposures that we wanted.

"After that, our allocation no longer needed to be between equities, bonds and alternatives. After removing the overlap between asset classes, we can now allocate such that the risk exposures are what we want to have and that can be in any direction. It can be geographic, it can be factor, it can be risk-based, or any concept. That is when you are allocating risk on a product basis and the product is fulfilling its investment objective," he said.

Mr Gupta believes portfolio diversification through exposure to multiple forms of beta and absolute return strategy will become much more widespread in the decade to come.

Better efficient frontier

"Traditional portfolio theory teaches us there is an efficient frontier when you plot risk versus return. If we have a client with a high return requirement, we moved him along the frontier to where there is high return and high risk. If he is more conservative, we bring him along the frontier to where there is lower risk and lower return."



Evolution of risk and return in a multi-alpha fund, as number of alpha sources (N) moved from 1 to infinity.

"What we found was that strategy diversification led to much more stable returns. For example, if we had $100 million, breaking it up into 5 tranches before calibrating any asset allocation strategy improved our risk-return ratio. When we went from one allocation strategy to five, efficient frontiers actually moved up. That meant we could maintain our return target at much lower risk. Or, we could keep the same risk at much greater return.

"A single allocation means a single time horizon of either one year or 3 years. In the manager space, we have short-term fund managers, medium term fund managers and long term fund managers. When any institution, individual or private bank places his money with a value manager, a growth manager, or a Europe manager, that is a single allocation. That is not efficient allocation strategy.

"In the last one or two decade, we have innovated ways to create alpha. If we spent more resources in allocation, we will also be able to innovate different ways to do allocation," he said.

E

"Multi-asset investing is a cornerstone to building a great investment portfolio.

"Pranay's exciting new book takes a lead in sharing innovative best practices used during his successful career in money management."

- **Arun Kelshiker**, CFA, MBA (left)
CFA Singapore Professional Development Committee Chair