



INFORMED PORTFOLIO MANAGEMENT

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From GTAA (Global Tactical Asset Allocation) to GDRA (Global Dynamic Risk Allocation)

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From GTAA to GDRA – A Strategic Evolution

Introduction

This paper explains the concept of Global Dynamic Risk Allocation (GDRA), an evolution of the Global Tactical Assets Allocation (GTAA) process.

GDRA retains the basic approach and benefits of GTAA, but understands the portfolio in terms of exposure to particular 'risks', as opposed simply to certain positions held.

In achieving this, the notion of 'related risk factors' is introduced in the GDRA process and this has an impact on the final positions recommended by the strategy.

Overview

GTAA has proved to be a reliable source of alpha for institutional investors. Over the last decade, several GTAA managers have consistently delivered good returns and diversification in different market environments - including difficult years like 2007 or 2008. However, some managers have had problems with reliability at these critical moments, and this has led to some question marks about prospective performance in the GTAA sphere going forward.

IPM is in the fortunate position of having delivered consistent returns over the past few years – especially in the difficult months of market crisis alluded to above. Nevertheless, concerns raised by the investment community, and in particular, our experience of these critical months, resulted in a determination to further develop the concept of GTAA to cope with potential challenges ahead.

In this article we discuss the evolution of GTAA into ‘Global Dynamic Risk Allocation’ (GDRA). We introduce this new concept as an enhancement of what we believe will be an improved source of uncorrelated alpha for investors going forward.

The conceptual difference between GTAA and GDRA is straightforward: whereas traditional GTAA concentrates on the forecast returns of its modelled markets, in addition GDRA also focuses on the portfolio’s overall resulting exposure to specific risks. It takes a comprehensive view of all assets/positions held at any given moment in time, and understands the complete portfolio in terms of exposure to risk.

Therefore, like GTAA, GDRA is also about what assets are more likely to outperform others in relative terms - but in addition it explains the portfolio in terms of what risk exposure delivers better (risk adjusted) returns.

The Evolution of GTAA

Tactical asset allocation (TAA) can be understood as a natural process of investment decision relevant to most institutional investors: after having positioned their portfolio according to the 'strategic' asset allocation recommended (e.g. 50% equities, 50% fixed income), the funds' portfolio managers or investment committees might seek to change this allocation in response to market conditions. Subject to internal investment guidelines this might lead to a tactical overweight of one asset class relative to the other. Done in only the domestic market using cash equities and bonds for implementation, this early version of TAA represents a relatively inefficient and costly source of alpha.

Over time however, TAA evolved into GTAA, where significant changes were added:

Firstly, GTAA is usually implemented using very liquid instruments like index futures and currency forwards. This reduces trading costs and increases the capacity of the strategy.

Secondly, the horizon is extended to include the global universe of markets, thereby increasing the number of opportunities for profit at any given time.

Finally, GTAA usually comprises at least four independent models. Most managers use a combination of the following:

- Asset class selection: equities against bonds and cash
- Equity market selection: country equity indices traded against one another
- Bond market selection: country bond markets traded against one another
- Currency selection: currency futures or forwards traded against one another

In some cases, other processes such commodities or specific curve plays may also be included. GTAA managers tend to take positions in developed markets but increasingly include emerging markets into their asset universe as well. Traditionally GTAA managers tend to build part of the process on the concept of (relative) valuation in addition to other type of factors such as macro-economic etc.¹

¹ More recently the area has seen a few new entrants which would otherwise be branded as CTA managers. Their strategies are also liquid, cheap to trade, with good capacity and are extended to a broad global universe of asset classes, but the investment process is different from "classical" GTAA.

The IPM GTAA Model

The IPM GTAA strategy employs the above four models. It takes advantage of opportunities in the currency, bond and equity markets by simultaneously holding long positions in markets with high relative return prospects and short positions in markets with below average expected returns. Only the most liquid currency forwards, bond and equity index futures are traded.

The investment approach is research driven and 'fundamental', seeking to add value through superior quantitative models of short and long term determinants of asset returns on a relative basis. It is central to the building blocks of each model that we use rational 'common sense' risk factors in our approach, which make intuitive sense in justifying the positions taken. This allows us to run the GTAA process in purely systematic manner without interference or overriding the model. All portfolios are independently risk controlled on a daily basis.

From GTAA to GDRA

Traditional investment discipline tells us that returns are the rewards for risks taken in appropriate quantities and in a timely manner. Similarly, it tells us that the only 'free lunch' to be had is acquired through diversification. Therefore, GTAA managers try to time the entry into and exit out of the broad markets in order to reap the rewards associated with bearing the accompanying risks, and they also diversify across many markets and several asset classes.

Traditional GTAA takes as a starting point the attractiveness of each modelled market and measures these against each other, after which an optimisation is carried out in order to come up with the resulting desired portfolio. This process may be carried out in different ways depending on who the GTAA manager in question may be. The important point here is that an analysis is centred around expected returns on specific assets.

This process usually works well in most market environments as it generates portfolios that are well diversified under normal circumstances. However, as referred to earlier, this does not hold true for all managers in all market conditions. Many portfolios constructed using this traditional method suffer from more or less pronounced drawdowns when investors least need them, i.e. typically when broad markets experience significant losses of value. Such periods include e.g. Fed's surprise hike of rates and the Mexican Peso crisis in 1994, the Asian financial crisis in 1997, the LTCM and Russian crisis in 1998, the burst of the Tech Bubble in 2000, 9/11 and most significantly the recent financial crisis that kept the markets depressed for well over a year after August 2007.

What these crises have in common is that portfolios that would normally be considered well diversified suddenly appear to be much less so. This is the case principally due to the fact that some of the risks taken by investing in apparently uncorrelated (or diversifying) assets may derive from very similar risks. Hence, when the unexpected strikes and normal relationships no longer apply, once well diversified portfolios turn into portfolios of highly correlated assets. As a result, returns usually end up being large in size, and often negative.

The single most complicating factor responsible for this behaviour is that past data, which is usually averaged over longer periods of time, does not describe these events in an appropriate way. Even worse, in some cases, the assets that are considered to be independent and diversifying by most investors, exhibit quite meaningful correlation even during non-crisis times.

This insight has prompted the IPM research department to focus more specifically on the underlying risks that GTAA strategies benefit from, and to attempt to reformulate the GTAA investment philosophy in terms of these risks rather than exclusively in terms of assets.

Naturally, in order to gain exposure to certain risks, positions in the market have to be taken, i.e. views have to be expressed via long or short exposures to certain assets or their derivatives. However, in a GDRA view of the world, these market positions are a way of expressing a view of which risks we want to bear, and is not only an expression of what assets we believe will outperform going forward.

What is GDRA?

Global Dynamic Risk Allocation is, as the name suggests, about the identification of risks and the dynamic allocation of positions to exploit these categories of risk. The significant difference between GTAA and GDRA lies not in the identification of assets' return prospects, but rather in the active allocation between different risk exposures.

Firstly, when risk factors within a process (for example, within the FX model) are correlated this is most often captured by a regression analysis, and as a result each risk factor will receive a smaller influence in the position it recommends. However, when risk factors are only correlated at the tails, this will not necessarily be picked up.

Furthermore, risk factors used in different processes (for example, the FX and country equity models) are not likely to enter the same regression analysis. However, recent experience in financial markets has shown that certain positions, even in different markets, may lead to a poorly balanced portfolio in overall risk exposure terms. Some GTAA managers already acknowledge this risk and do measure correlations of factor in different models. However, the IPM GDRA approach sets out to control for any such correlations and tail co-dependence as a core part in our process.

The IPM GDRA solution is to take account of this potential problem by examining all factors in the GTAA strategy as a whole. In line with our general 'fundamental' approach to modelling, we seek to identify risk factors which may be correlated across all models. We label these as 'strongly related' if their linear correlation is high or if their tail (negative tail or positive tail) dependence is high - regardless of whether or not they belong to one or different models. We may also treat risk factors as 'strongly related' if our qualitative understanding of their nature suggests that they may expose a portfolio to the same underlying risk. Using either of these classification approaches we are able to limit the combined exposure to 'strongly related' factors.

Tail dependent thinking at IPM has a long history and the first quantitative tools for our approach were developed already in 2004 and implemented in 2005. The full GDRA approach was launched earlier this year.

Summary and Conclusion

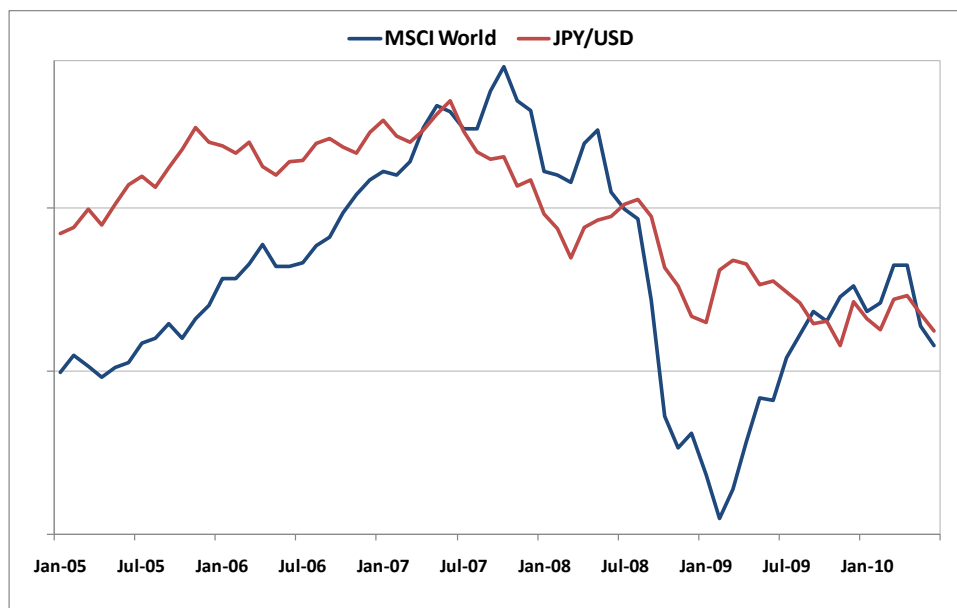
Our work on GDRA began with a desire to respond to the potential threats from tail events in the markets. These threats have become real over the past few years and vindicated the basic approach we saw as paramount, namely examining in greater detail the complex relationship between different risk factors in a typical portfolio. The culmination of this work has been the successful introduction of the GDRA approach into the IPM GTAA model.

It is our belief that this has re-defined the traditional view of risk management, incorporating the very concept of risk into the heart of the GTAA portfolio construction process.

Appendix: A Concrete Example – Thinking in terms of Risks rather than Assets

A valuation model based on the purchasing power parity (PPP) concept shows us whether and how strongly a particular currency is over- or undervalued. Assume that we take long positions in undervalued and short positions in overvalued currencies. Eventually exchange rates tend to revert to their respective fair values as implied by PPP and when they finally do so, we would make money. The potential reward is clear: it is the difference between the PPP-implied and actual exchange rates.

The risk we bear in trading according to this theme is the market's willingness and ability to properly recognise currencies' 'fair value' as outlined by the PPP. The market may, however, fail to recognise or price this for an extended period of time and even bring the apparent imbalance further away from equilibrium before it decides to reverse the trend. The figure below shows an example of such exaggerated market movements:



The chart shows the US Dollar vs. Japanese Yen exchange rate and the return of the MSCI World index. Between 2005 and 2007, the Yen depreciated and diverged further away from 'fair value' as global equities were rising, only to strengthen and converge towards its modelled equilibrium level as markets began falling. However, it would be simplistic to deduce that the Yen is negatively correlated with equity markets. In retrospect, the Yen was weak until late 2007 while equity market volatility stayed low and only when market volatility did increase in 2007 did the Yen strengthen and move closer to its presumed 'fair value'.

It would in fact be more accurate to explain the movements of the Yen in terms of overall risk appetite. As market volatility/risk increased, the appetite for holding 'higher risk' (read 'higher yielding') currencies diminished, the result being that valuation cases such as the Yen were penalised in periods of benign market conditions and rewarded in high volatility spikes.

GDRA is able to recognise this relationship between valuation and risk appetite, and as a result, able to intelligently limit the exposure to related risk factors at any given moment in time.