

ARA- Active Risk Allocation

Asset allocation is the outcast of the funds and portfolio management industry. There is no agreement on the right approach. Yet it has been verified repeatedly that a correct asset allocation is the foundation of a healthy investment return.

We offer you an advanced yet practical method to asset allocation. It is innovative, it is data-driven and it allows for an integrated risk control. And it allows integration of actively managed asset classes, or ETF index funds where your organisation may have less resources.

At Origo we do asset allocation. We have been active in this specialty for 10 years. We have constructed a systematic way of approaching asset allocation. We prefer to use ETFs to represent the asset classes creating an active allocation of passive asset classes. The method can be adapted to any number of asset classes. It can also be adjusted to existing investment restrictions and be a supplement to managers who are active managers within a specific asset class.

It is a well-known fact that some 90% of the secret in obtaining a satisfactory return is to get the right balance between portfolio asset classes.

Yet there is no universally accepted method for asset allocation. Some do it by committee. Some do it by painstakingly laying out their expected future returns and risks for a relevant horizon.

We call our method Active Risk Allocation because we actively allocate the risk to the various asset classes. The portfolio weight of a given asset class is derived from the risk allocated – and the current volatility of that asset class.

Our method is flexible and can be adapted to nearly any portfolio investment strategy.

The stylised facts of Asset Allocation

Asset allocation is typically rooted in methods that are problematic. Asset allocation by committee typically leads to very static results. A significant number of organisations employ a variation of the CAPM methodology derived from the works of Markowitz. As a consequence, they rely on detailed return expectations and antiquated historical risk measures for each asset class.

The less broadly used but equally viable Risk Parity approach similarly has drawbacks, most notably that it ends up being challenged on the returns.

We have deliberately constructed our method in order to avoid some of the best-known weaknesses in most other approaches:

- Daily returns are not normally distributed
- Trends exist
- Correlations between asset classes are not constant
- Volatile spikes most often happen when markets fall
- Expected returns are never right

And maybe the most important: there is no such thing as an automatic algorithm that will give you the optimal asset allocation. Even if we have a systematic method, we still need to analyse the readings of the data on a daily basis.

The importance of market risk

The point of departure is that we want to avoid significant losses. If we manage that, we are on track for a good long-term return. In other words, we focus on detecting signs of imminent market upheaval.

The approach builds on a simple empirical observation, namely that in most cases of a significant market fall, two things happen ahead of the fall.

Firstly, individual asset classes display an increasing volatility. This is the simple mathematical expression of “gains come slowly but losses come swiftly”. Sure, market increases may also be related to higher volatility but in a different order of magnitude.

Secondly, if the situation is about to develop into a proper market sell-off, the covariances of financial assets tend to turn positive. In trader lingo, everybody tries to get out of the door simultaneously.

In such a situation, increased portfolio volatility has two sources:

- Increased volatility of the individual asset classes
- covariances change so overall portfolio risk increase due to less diversification effect

In other words, we detect changing patterns of correlation and use that as a major storm warning.

Studying market correlations are necessary, but not sufficient.

Veteran market participants will remember the sudden market fall in May 2013 - the “Temper Tantrum” triggered by speculation that the US Federal Reserve was about to reverse its bond purchases.

In the two months leading up to the triggering event, stocks and bonds had moved in parallel. In such a situation, a diversified portfolio offers only little volatility protection. In the specific “Temper Tantrum” example also no capital protection as all assets dropped simultaneously.

Our market risk indicators had been flagging a high risk and our allocation indicators signalled a drawdown of risk assets.

In such a situation the only way to handle a sudden market drop is by liquidating parts of the portfolio or to apply measures of inverse market exposure as for example to hedge, depending on the investment mandate.

Around the 2nd quarter of 2019, we saw a period where the main asset classes have moved upward in parallel for some months since the beginning of the year.

As opposed to the 2013 Temper Tantrum we did not detect any serious increase in market risk, nor any indication that risk assets should be drawn down. In other words a “peaceful resolution” was the most likely outcome and it so happened that the bond markets began to fall while the stock markets continued upwards

Forcing target volatility of the portfolio

We are inspired by the Risk Parity approach where a mechanic method is used to keep the risk contribution from each portfolio asset class roughly equal. In order to apply this method, no return expectations are necessary.

A risk parity portfolio is close to the “Minimum Variance” portfolio in the CAPM universe. It means that it will also be close to the “minimum return” portfolio.

In order to avoid this outcome, we establish a target volatility and we use a dynamic method to guide the overall target portfolio volatility up or down. Once target volatility is determined, we allocate the risk as evenly as possible, given a number of constraints, particularly on the proportion of risk assets in the portfolio.

We have constructed a series of indicators that analyse the market risk and indicate the overall exposure to risk assets. We define risk assets as those whose volatility increase the most if the market perceives a higher risk: equities, high-yield bonds, commodities, precious metals, long bonds

The need to look at additional market risk factors are however obvious.

Our indicators

We use proprietary indicators to guide the desired portfolio volatility up or down. And we use other indicators to guide the main source of risk in the portfolio, the allocation to risk assets. Sometimes the two conflict and in such cases we let the most conservative set of indicators carry the day.

As a basis, we have constructed an entire set of indicators which we like to think of as constituting 4 different groups of variables. These variables give an overall view of the risk situation and they are combined into two main aggregates that summarise our views.

The four groups of variables are

- Macroeconomics
- Market risk and intelligence
- Technicals and behavioural factors
- Portfolio volatility and risk

We are oriented towards fundamentals. Macroeconomics always win in the end. But while we wait for that to happen, many momentary issues arise that dominate the markets in the short term. For any meaningful horizon relevant to an investment manager there are no correlation between macroeconomics and financial markets.

The four categories aim at giving importance to issues that has such as market sentiment and market dynamics.

For each of these four categories, we have selected a small number of variables chosen for their ability to give indications regarding the market movements.

We combine indicators of these four groups into two main indicators, one for establishing the current market risk, Origo Portfolio Risk Allocator (OPRA), and the Origo Market Risk Indicator (OMRI). [See Annexe 1]

Indicator group	Example of Indicators
	Correlation matrix of a simple global portfolio
Economic Fundamentals	Macroeconomic growth/price indicator Microeconomic inventory/sales indicator
Market risk	Economic surprise Indicator Investor risk willingness indicator Global financial stress indicator
Technical and behavioural	Mean reversal indicator Trend strength indicator
Volatility and risk	Market volatility of a 50/50 portfolio Correlation matrix of a simple global portfolio

Finally, we make a portfolio optimisation as follows:

<p>Minimise {dispersion of risk across portfolio asset classes}</p> <p>Subject to;</p> <p style="padding-left: 40px;">Target band for portfolio volatility</p> <p style="padding-left: 40px;">Limitations on total exposure to risk assets</p> <p style="padding-left: 40px;">Other portfolio constraints</p>

How we can help you?

If you apply the typical approach of a superior authority (the Board of Directors or another suitable deity) laying out variation bands for the various classes of indicators, we then simply formulate your investment limits as “other portfolio constraints” to the ARA optimisation procedure. Obviously, the narrower the variation bands, the less room there is for our input to add value.

We use ETFs to represent the asset classes as they are investable, which is not the case for constructed benchmark indices. To the extent that you follow our asset allocation, you will be able to show your ability as an active manager inside your chosen asset class.

We are agnostic about rebalancing frequencies. We run our risk indicators every day and we will recommend a portfolio change outside the agreed frequency if data signal that portfolio adjustment is necessary.

In short, we construct an optimised model based on

- Your choice of asset classes
- Your investment limits
- Your currency preferences

- Your risk tolerance
- Your subsequent choice of replacing selective passive ETF with active management

We recommend on the basis of this customised model, and obviously we provide a follow-up on our recommendations

We visit you on a regular basis to explain how we interpret the results

You can read about our current thinking:

Monthly thematic article

Dealing with an issue we believe will dominate the markets in the next 3-6 months

Quarterly strategy overview

How did ARA model perform recently? Attribution & Contribution analysis

What is likely to happen in the coming quarter?

Flash news

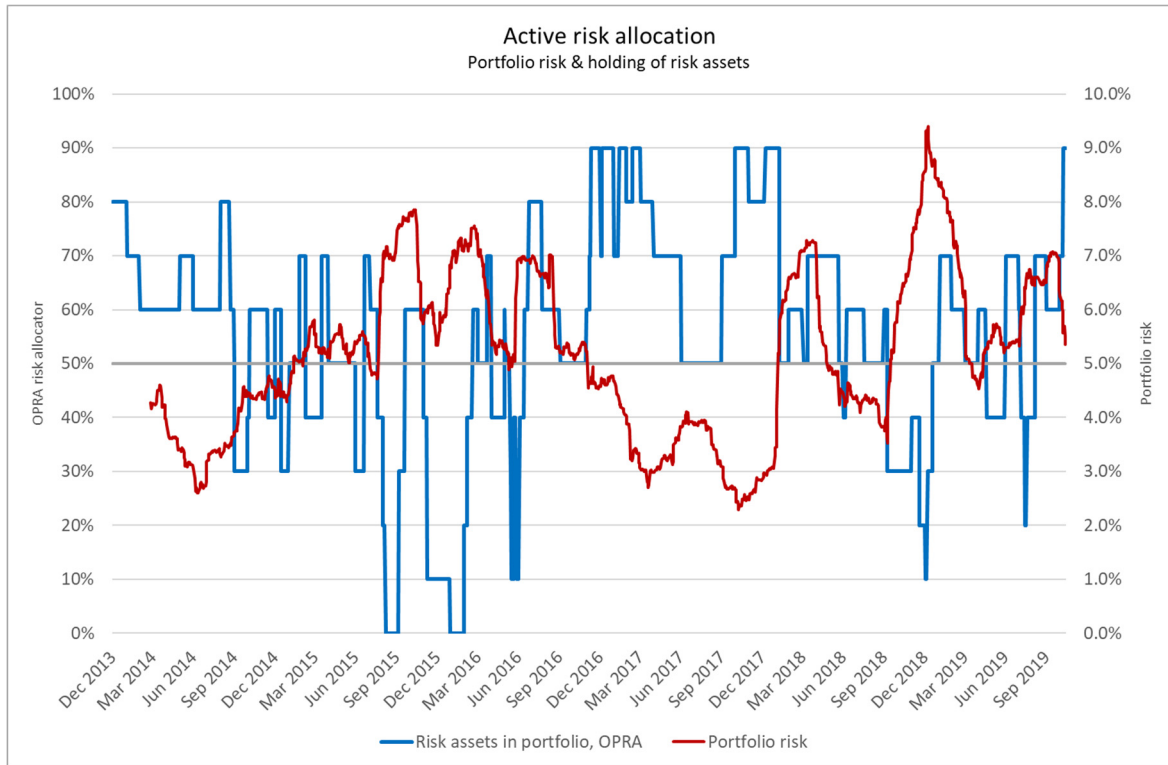
When a particular theme dominates the headline news, we will describe the issue

Does it have a real economic effect?

If yes, how does it affect the investment decisions of the model framework

ANNEX 1

OPRA risk allocator and ex ante portfolio risk*)



*) The chart above compare the holdings of risk assets in an unconstrained portfolio to the volatility of a market portfolio of 50% global stocks and 50% global investment grade bonds (calculated in EUR). An OPRA reading of 50% signify a neutral to benchmark risk weighting. We observe there is a clear tendency towards an inverse relationship; lower volatility means more risk assets in the portfolio.

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