EXPERT OPINION

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MULTI-ASSET INVESTMENTS

INTRODUCING ALTERNATIVE RISK PREMIA: A NEW FRONTIER FOR MULTI-ASSET PRODUCTS

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Adding alternative risk premia to multi-asset portfolios opens a new area of opportunity, adding diversification and boosting performance.

Investor appetite for flexible multi-asset products in the long-only segment has sharply increased over the recent years. With valuations on major assets classes looking extended, the appetite for those strategies is understandable. Indeed, pure buy and hold strategies are increasingly at risk of drawdowns, while flexible asset allocation processes, especially when they incorporate thorough risk management, are a robust alternative.

Yet there is always room to improve these products and the addition of Alternative Risk Premia (ARP), which we are now including in our ARMA multi-asset strategy[1], is designed to enhance risk-adjusted returns and help mitigate drawdowns.

Most multi-asset strategies invest in traditional asset classes. In doing so, they benefit from what's often called the only free lunch available in financial markets – the fact that combining uncorrelated assets in a portfolio will enhance risk-adjusted returns thanks to diversification.

In that sense, ARPs represent the natural next step for multi-asset strategies. These risk premia are constructed as long/short positions linked to either a typical hedge fund strategy or market styles such as value, momentum or carry. Uncorrelated to traditional assets, they can add a steady stream of returns, like those in a carry trade. In our view, combining traditional assets and Alternative Risk Premia thus is a clear source of value for any diversified strategy.

However, integrating ARPs into a portfolio can be challenging, as their carry-like stream of returns exhibits skewness, potentially leading to sizeable losses. This makes the rigor of processes behind selecting ARPs, and allocating to them, crucial for success.

THE BENEFITS OF ADDING ARPs TO TRADITIONAL ASSETS

We describe ARMA as a long-only multi-asset strategy with significant tactical leeway. It has a flexible investment process with three performance engines: risk-based allocation, trend following and judgmental global macro. These engines allocate across two portfolios. The core portfolio is invested

[1] The ARMA strategy can be accessed in two versions: ARMA 3 and ARMA 8, each defined by their maximum volatility level.

WHAT IS A RISK PREMIA ?

In its most simple definition, a risk premium is the reward for taking a non-diversifiable risk. It is the return of a specific asset over the risk free rate. In the case of sovereign bonds, the risk premia is going to be the term premium. For corporate bonds, it is going to be the sum of the term premium and the credit premium. As for equities, it is going to be the sum of the term premium and the equity risk premium.

in traditional assets, such as world equities, sovereign bonds and commodities, which can easily be allocated to with risk budgeting tools. The satellite portfolio is meant to add performance via a carry-like stream of returns, and is currently invested in credit instruments.

In a way, ARMA's core portfolio can be viewed as a dynamic allocation process on traditional risk premia. Moreover, since ARMA invests in liquid underlyings such as futures on equity or bond indices, and ETFs, these traditional risk premia can be easily accessed. Of course, since they are a delta one exposure on the corresponding market, these positions will carry a straightforward directional risk. However, this is where the diversification benefits of a multi-asset product become relevant. Indeed, traditional risk premia can present low or negative correlations among themselves. Bonds for instance are expected to perform during economic downturns, while equities will tend to rally during growth episodes.

Academic research[2] has recently outlined that traditional risk premia were not the only risk premia that investors could access in a systematic way. These alternative risk premia, which, have traditionally been related to sometimes illiquid hedge fund strategies, have, over recent years, become available via liquid market indices. Since they are, by nature, decorrelated from traditional asset classes, this makes them an attractive addition to ARMA's traditional investment universe. However, as their returns' stream has carry-like characteristics (including skewness), traditional risk budgeting allocation processes such as the ones implemented in the core portfolio will not yield robust results. We thus integrate them in ARMA's satellite portfolio, raising its weight in the overall strategy's risk from 10% to 20%.

DIVERSIFYING AND ENHANCING RETURNS

An alternative risk premia is the compensation for being exposed to a particular nontraditional financial risk. From an academic perspective, and as underlined by Thierry Roncalli [2016][2], ARP returns are rewards for their non-diversifiable skewness. The fact that ARPs are harvested via long/short positions when they are linked to traditional assets also differentiates them from smart beta, which can be defined as weighting schemes that differ from market capitalization weighting.

Often linked to market or behavioral biases, ARPs create opportunities that can be systematically exploited and which are uncorrelated to traditional assets. For a strategy like ARMA, with a core portfolio of traditional risk premia, they can be a further source of uncorrelated returns and performance. Indeed, ARPs are structurally uncorrelated to traditional assets. In that sense, they are not expected to be safe havens during market downturns. Instead, we expect them to deliver a steady stream of incremental returns, diversifying positions and adding to performance. When traditional market correlations rise, as they did in 2015, this can be particularly useful.

The latest academic research showing that ARPs could be systemically harvested has clearly made them a new frontier for multi-asset products. Historically related to sometimes illiquid hedge fund strategies, ARPs have recently become accessible via liquid market indices, making them viable investments for a strategy like ARMA.

(ONE OF MANY) MAPPING OF ARP CANDIDATES

STRATEGY	EQUITIES	RATES	CREDIT	CURRENCIES	COMMODITIES
Carry		X	X	X	X
Momentum	X	X	X	X	X
Reversal	X	X		X	X
Value	X	X		X	X
Volatility	X	X		X	X
Event	X				
Growth	X				
Low Volatility	X				
Quality	X				
Size	X				

Source: Thierry Roncalli [2016]

THOROUGH SELECTION IS CRUCIAL

We are not alone in seeking out ARPs. But, when adding them to a portfolio, a thorough selection process based on the following three points is crucial:

1. Respect ARMA's key values. The strategy prioritizes: the liquidity of underlying instruments, transparency of the allocation process, and straightforward performance attribution.

Therefore, we avoid exotic, 'black box' risk premia with obscure investment rules and economic rationales that are hard to understand.

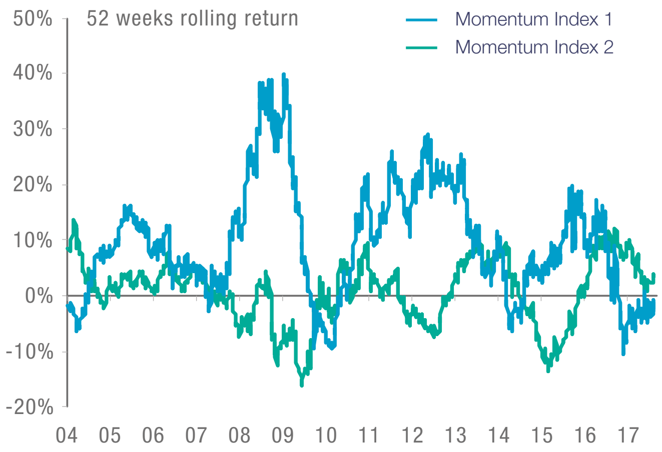
[2] Hamdan, Pavlowsky, Roncalli, Zheng [2016]: A Primer on Alternative Risk Premia, Lyxor White Paper Series

2. Check risk premia qualities. We also need to make sure that a selected strategy is indeed a risk premium. Typically, it needs to exhibit a consistent, carry trade-like stream of positive returns.

Moreover, we need to discriminate between indices which carry the same name, but which do not necessarily behave in the same way.

Chart 1 for instance shows two momentum ARPs which exhibit wide discrepancies in performance.

TWO MOMENTUM ARPs, BUT WHICH ONE SHOULD YOU CHOOSE?



Source: Lyxor AM

To discriminate ARPs, we rely on our in-house database, which tracks nearly 400 ARP indices. Thanks to this data base, Lyxor's research team has built, for each academically identified ARP, a theoretical index. To be eligible for an investment in ARMA, an ARP must be statistically well linked to our in-house theoretical index[3].

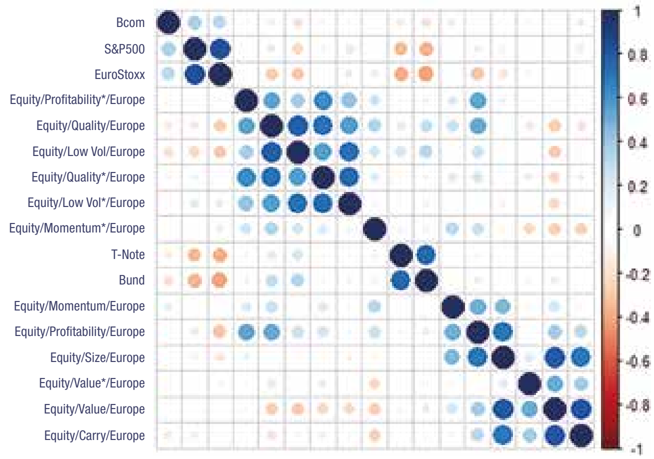
SCREENING A VAST ARP UNIVERSE

EXPLANATORY FACTOR (SENSITIVITY)				
Index Name	R^2	1st	2nd	3rd
Value 1	25.9%	+30% Value	+22% Merger Arb	-21% Growth
Value 2	56.2%	+70% Value	-43% Low Vol	-27% Quality
…				
Momentum 1	50.3%	+70% Momentum	-70% Value	+20% Reversal
Momentum 2	32.1%	-38% Low Vol	-24% Momentum	+17% Growth
…				

Source: Lyxor AM

3. Ensure enhancement of existing portfolio. The last step in the selection process is to make sure that the ARP has a low or negative correlation to the existing portfolio, and enhances risk/adjusted performance.

CORRELATION CLUSTER BETWEEN SELECTED ARP AND ARMA'S CORE PORTFOLIO



Source: Lyxor AM

A TAILORED APPROACH TO RISK ALLOCATIONS

While risk-parity investment allocation processes based on risk budgeting work well for multi-asset long-only portfolios of traditional assets (equities and bonds), the picture is more complex for ARPs.

Their skewed returns' profile which, as shown by Bruder, Kostyuchyk and Roncalli [2016][4], is highly related to 'jump risk' or market shocks, implies that standard risk budgeting methodology will yield less attractive results. Illustrating this point, the short volatility risk premium that delivers a regular, ultra-low volatility return in normal market conditions, can suffer brutal losses in a stressed market. Using risk parity to allocate to this ARP would not account for this tail risk when sizing the position, potentially leading to major losses in a market downturn. Moreover, once the jump (i.e. the market shock) had materialized, a risk budgeting allocation would trim exposure to the ARP, missing out on much of the recovery. As shown again in Bruder, Kostyuchyk and Roncalli [2016], it is more appropriate to consider an expected shortfall measure than volatility when allocating to assets exhibiting skewness. This expected shortfall measure is calibrated by using a mixed distribution with two regimes: the normal regime, and the stressed regime with jumps.

Such a regime switching model provides a handy approach: by distinguishing two states it finely estimates on one side the day-to-day volatility risk, and on the other side the probability of occurrence and the extent of extreme losses. The resulting expected shortfall measure shows how much capital is at risk in volatile markets. This measure can be used for allocating to ARPs using an equal risk budgeting approach that avoids the pitfalls of traditional risk parity.

Quite naturally, as we have integrated new ARPs into the satellite portfolio, this new set of opportunities has called for a larger allocation, which is why we have extended its budget from a maximum of 10% of the fund's risk to a new ceiling of 20%.

[3] First a Lasso regression is run in order to select the top 10 explanatory factors. Second, an OLS regression in order to compute the sensitivities to those 10 selected factors with a specific focus on the first three
[4] B. Bruder, N. Kostyuchyk & T. Roncalli [2016] : « Risk Parity Portfolios with Skewness Risk : an Application to Factor Investing and Alternative Risk Premia », Lyxor AM White Paper Series

SUMMARY OF ALLOCATION PROCESSES IN THE ARMA STRATEGY

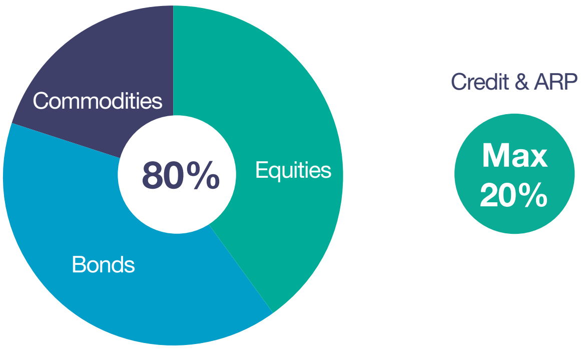
Core portfolio (Traditional assets)

Risk budgeting + Momentum + Judgmental Macro

Satellite (Alternative Risk Premia)

Skewness risk is integrated via expected shortfall metrics

CORE PORTFOLIO   SATELLITE ASSETS



Source: Lyxor AM

PUSHING BACK INVESTMENT FRONTIERS

Based on our thorough selection process, we have initially chosen the following three risk premia, all focused on European equities:

- Low volatility
- Quality
- Momentum.

We introduced the strategies in July 2017, using swap instruments linked to listed indices.

Their high level of diversification has allowed us to enlarge the satellite portfolio without increasing volatility. In fact, adding these strategies barely impacted overall volatility when back testing, while materially enhancing performance since ARMA's inception. The improved performance is summed up by a significantly higher Sharpe Ratio. Note that maximum drawdowns also fell, showing the benefits of a broader and more diversified universe.

TABLE 3	SINCE ARMA INCEPTION*	
	ARMA 8	ARMA 8 + ARP
Annualized Return	7.79%	9.49%
Volatility	7.20%	7.33%
Sharpe Ratio	1.06%	1.27
Max DD	-14.32%	-12.99%

* Simulated data from 31/05/2010 to 26/07/2017.Real data since 27/07/2017
Source: Lyxor AM

These encouraging results underline the importance of constantly pushing back frontiers in the investment universe. While traditional risk premia are well-charted territory, ARPs open a new area of opportunity. However, the profusion of ARP strategies, and the lack of consistency among them, calls for a vigilant and careful approach to selection.

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