Active Risk Allocation

Strategic Wealth Management portfolio optimisation

31 March 2023

ORIGO CONSULTING

Independent | Transparent | Disciplined

Inconvenient facts Investments version 1.01

- Return forecast are always wrong
- Asset covariances are unstable
- Autocorrelation do exist
- Markets are not always efficient

Targeting returns vs Risk management

- *The traditional way:*
  Return targeting

- Based on **expectations** of future returns
  - Expectations are most often wrong
  - Fixed intervals for portfolio rebalancing
- Changes in risk/volatility not taken into consideration
- Assumes that assets move in stable patterns relative to each other
- In times of trend changes, portfolio is only rebalanced as trend estimates are revised

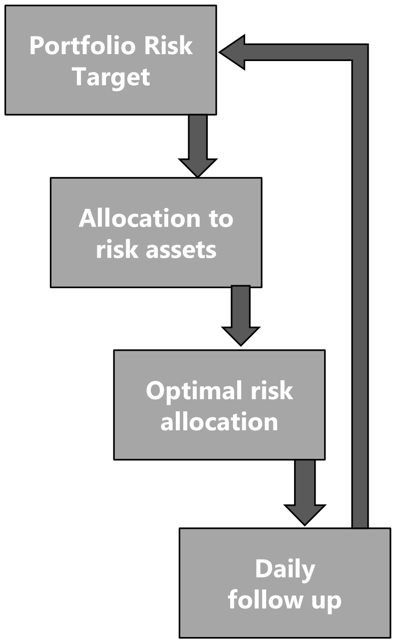
- *The ARA way:*
  Volatility targeting

- Based on **existing** volatilities
  - No guesswork as the volatilities are available
  - Adaptive intervals for rebalancing determined by target volatility
- Adjusting to changes in risk
- Takes into consideration that correlation patterns change
- In times of trend changes, volatility changes force a portfolio rebalancing

ARA optimisation

Summary of process

- Decide on desired portfolio volatility band
  - 3.5-5%, 6-8% or 9-11% target
  - Depending on model input
- Allocate between risk assets and non-risk assets
  - Between 0 and 100% of portfolio may be allocated to risk assets
  - Depending on model input
- Calculate portfolio allocation
  - Allocating assets in a way that no asset class gives a too large risk contribution (almost Risk Parity)
  - Respecting overall volatility target
  - Respecting overall allocation target
- Daily follow up
  - Daily calculation of expected portfolio volatility
  - Daily supervision of OMRI and portfolio risk allocation
  - Corrective action if necessary



ARA optimisation

IR Benchmark (baseline)
Approximately a 60/40

Performance structurally challenged *);

- as choice of assets correlate
- benchmark deviate from peers
- when US stocks outperform
- when USD strengthen

*) Ref. analysis of 25.11.2021

IR Medium risk model portfolio

Name	Class	Mid	ETF Proxy
IR Basis		25	Composite
	Aktier-EU	60	XSX6 DE
	Bonds-EU GOV	10	XGLE DE
	Bonds-DK MBS	10	Nyk dmb Composite
	Bonds-HY	15	IHYG DE
	Cash	5	XEIN:GR
IR Favoritter/IR Danske Aktier	Aktier-DK	25	BIKF DC
IR Vækstlande	Aktier-GEM	20	BRIC LN
IR Erhverv	Bonds-HY	10	IHYG DE
IR Højrente	Bonds-HY	15	EMBE LN
Danske obligationer	Bonds-DK	5	NYK DMB Composite
		100	

ARA optimisation

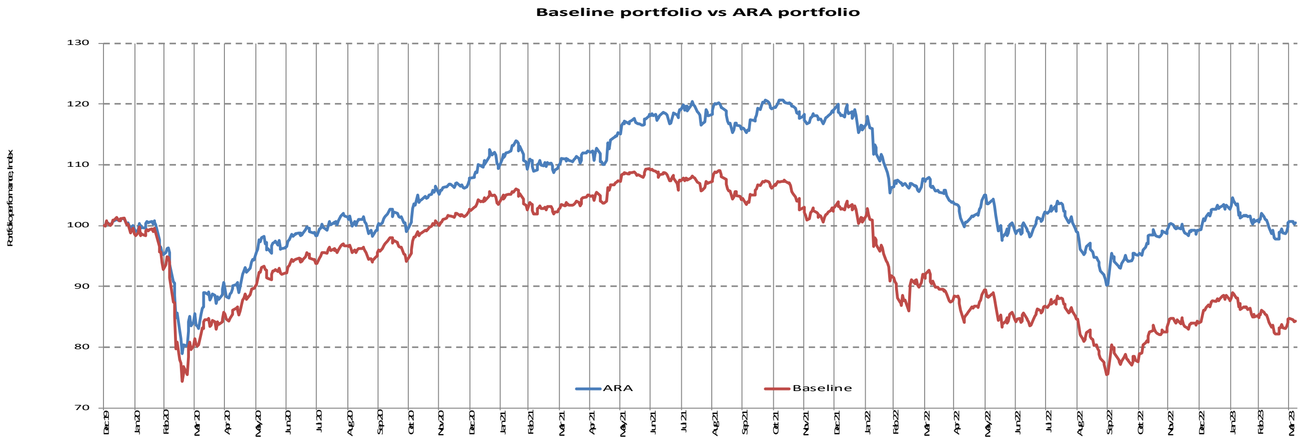
Performance

IR optimised vs Baseline

Performance structurally challenged *);

- as choice of assets correlate
- benchmark deviate from peers
- when US stocks outperform
- when USD strengthen

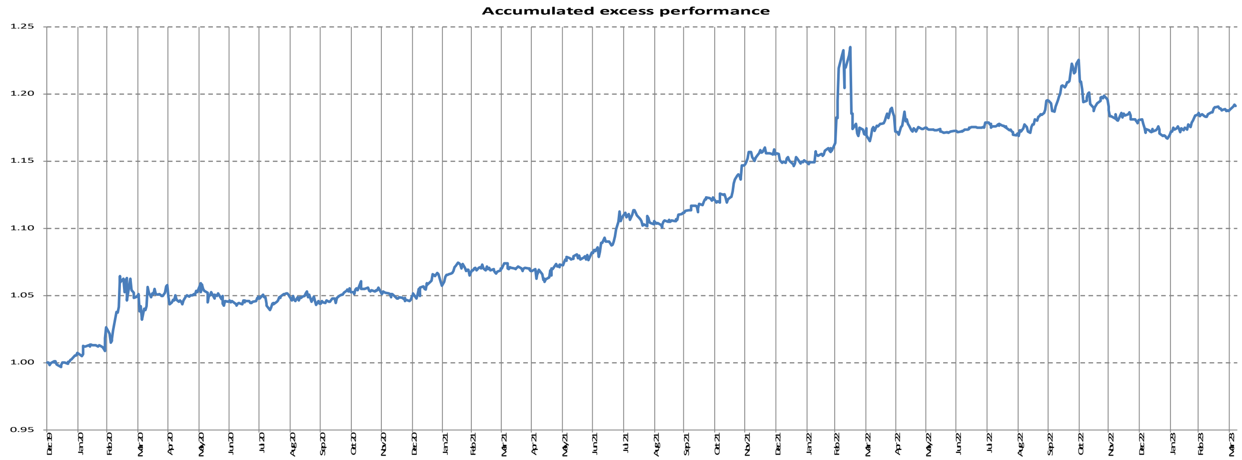
*) Ref. analysis of 25.11.2021



March 2023

0.20%

-0.15%



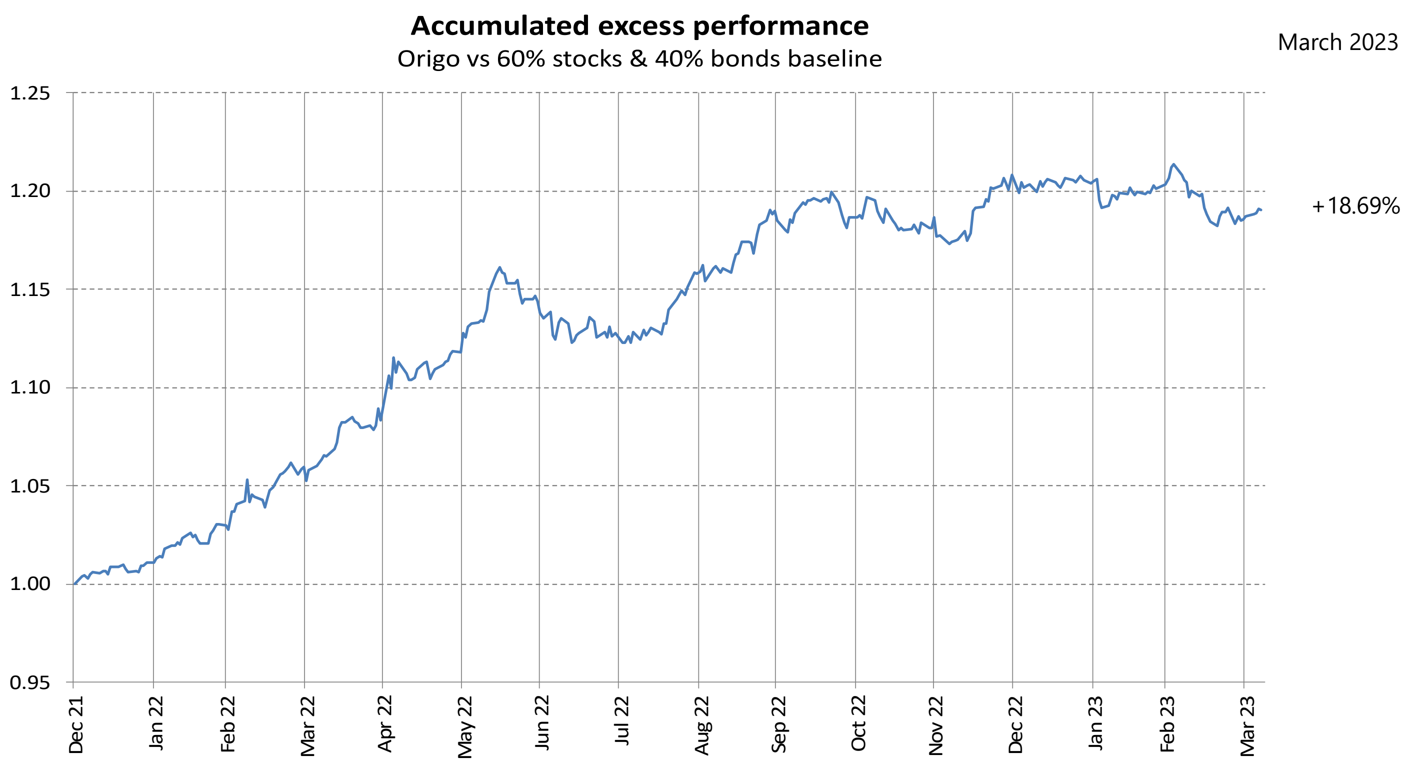
+19.06%

EXAMPLE

ARA optimisation

Performance

An optimised **diversified** “compact” portfolio vs Baseline

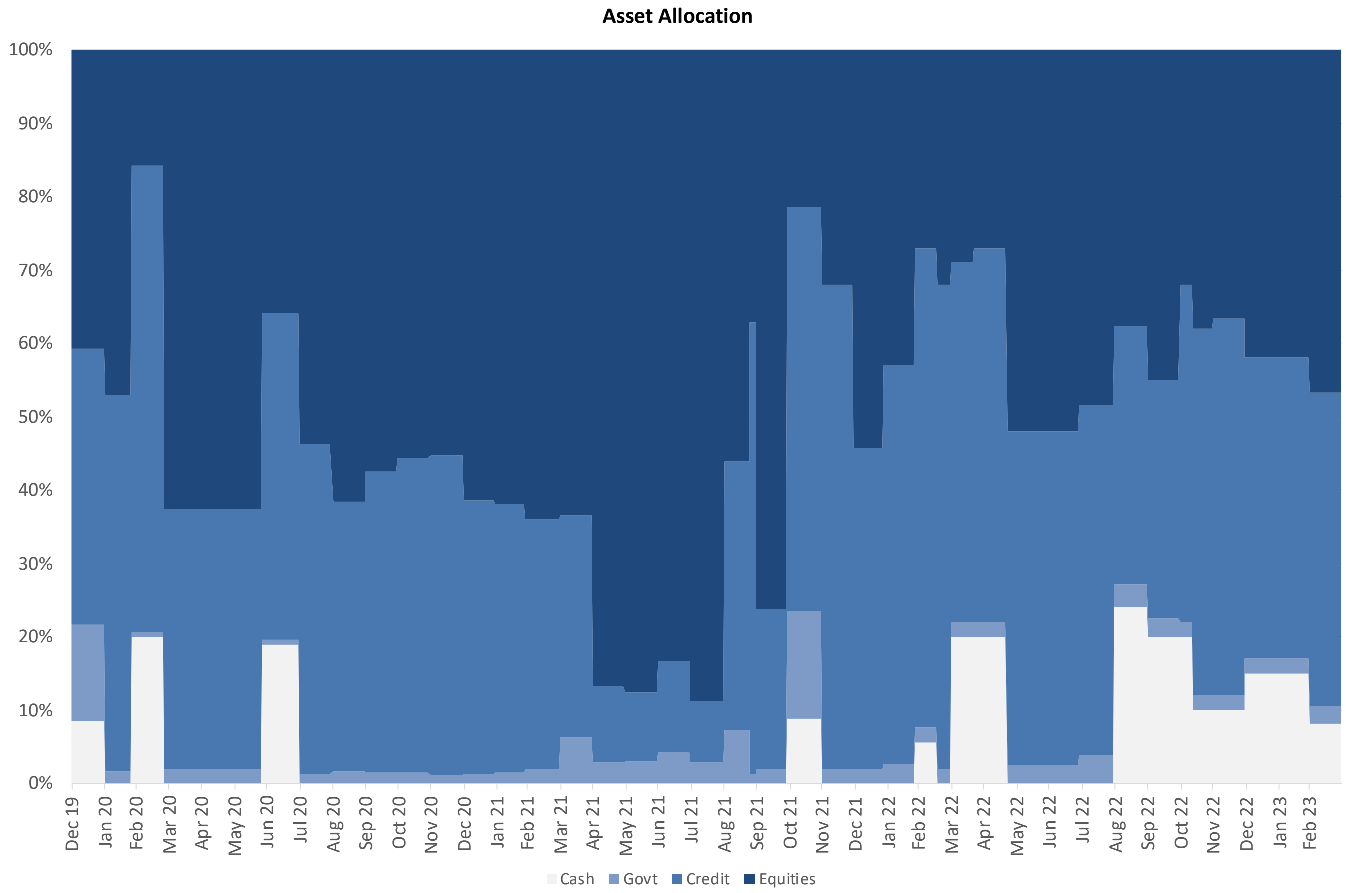


IR Asset Allocation - timeline

OPRA limits risk allocation

No asset diversification possibility through 2022

Since 2023, correlations are starting to improve, but are not yet "normal"



ARA portfolio

April 2023

Big change in correlations
Increase in cash at the expense of bonds

IR Medium risk model portfolio

Name	Limit used Minimum	Prior	Allocation	Change	Limit used Maximum	ETF proxy
Cash		4%	19%	15%		Cash
IR Basis		24%	20%	-4%		Composite
IR Danmark		17%	15%	-2%		BIKF DC
IR Vækstlande		11%	8%	-3%		BRIC LN
IR Short Stoxx		0%	0%	0%		XSSX DE
IR Erhverv		28%	25%	-3%		IHYG DE/HYG US
IR Højrente		5%	13%	8%		EMBE LN
DK DMB		11%	0%	-11%		Nyk Composite
		100.0%	100%	0%		

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