Active Risk Allocation

Strategic Wealth Management -
Portfolio optimisation

31 August 2023

ORIGO
CONSULTING

Inconvenient facts
Investments version 1.01

- ☐ Return forecast are always wrong

- ☐ Asset covariances are unstable

- ☐ Autocorrelation do exist

- ☐ Markets are not always efficient

NB Broad application of the Capital Asset Pricing Model (CAPM) is puzzling, from an academic vantage point.
It is used, because its simple, used by all bank peers and so fits the bank industry business model.

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

Portfolio Risk Target

Allocation to risk assets

Optimal risk allocation

Daily follow up
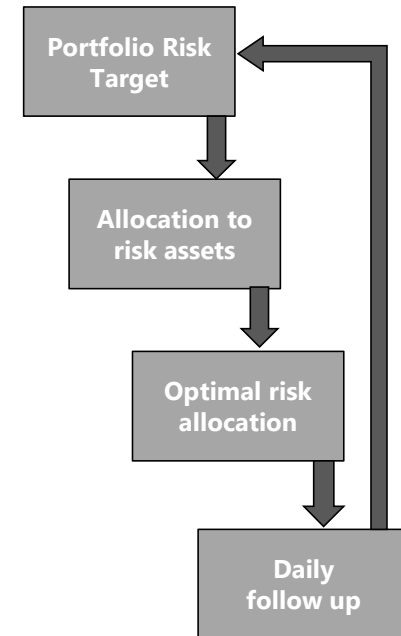
ARA optimisation

IR Benchmark (baseline) Approximately a 60/40

Performance structural deficits *);
- as choice of assets correlate
- benchmark deviate from peers
- when regionally US stocks outperform
- when growth style 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	

Consequences of structural deficits:
2021, no US stocks, too much emerging markets and no US IT-sector
2022, no uncorrelated asset classes, too much emerging markets and no USD
2023, no US stocks, too much emerging markets and no US IT-sector
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ARA portfolio

August 2023

IR Medium risk model portfolio

Name	Minimum	Limit used Prior	Allocation	Change	Limit used Maximum	ETF proxy
Cash		15%	15%	0%		Cash
IR Basis		26%	20%	-6%		Composite
IR Danmark		17%	15%	-2%		BIKF DC
IR Vækstlande		0%	0%	0%		BRIC LN
IR Short Stoxx		10%	15%	5%		XSSX DE
IR Erhverv		17%	15%	-2%		IHYG DE/HYG US
IR Højrente		0%	5%	5%		EMBE LN
DK DMB		15%	15%	0%		Nyk Composite
		100%	100%	0%		

Underweights in stocks including inverse stocks and underweight in bonds all contributed to excess performance

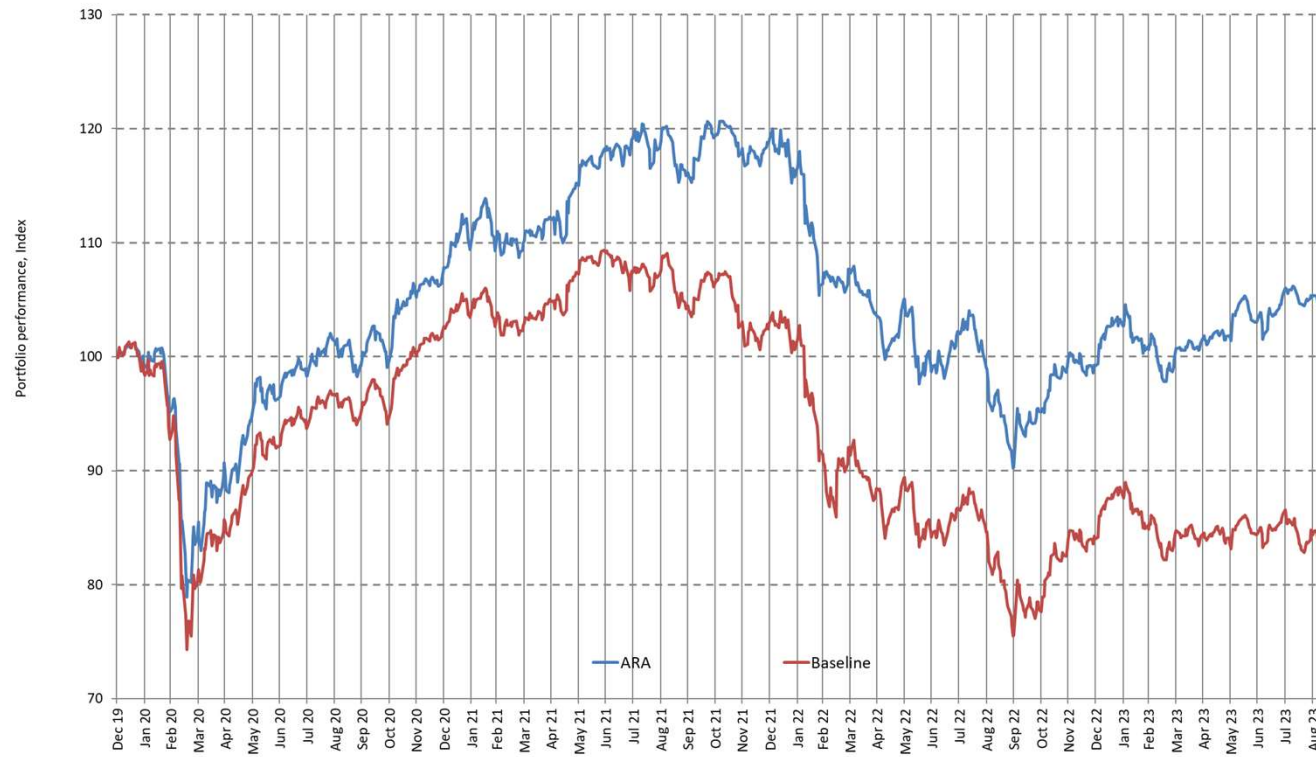## ARA optimisation

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 report of 25.11.2021

Baseline portfolio vs ARA portfolio
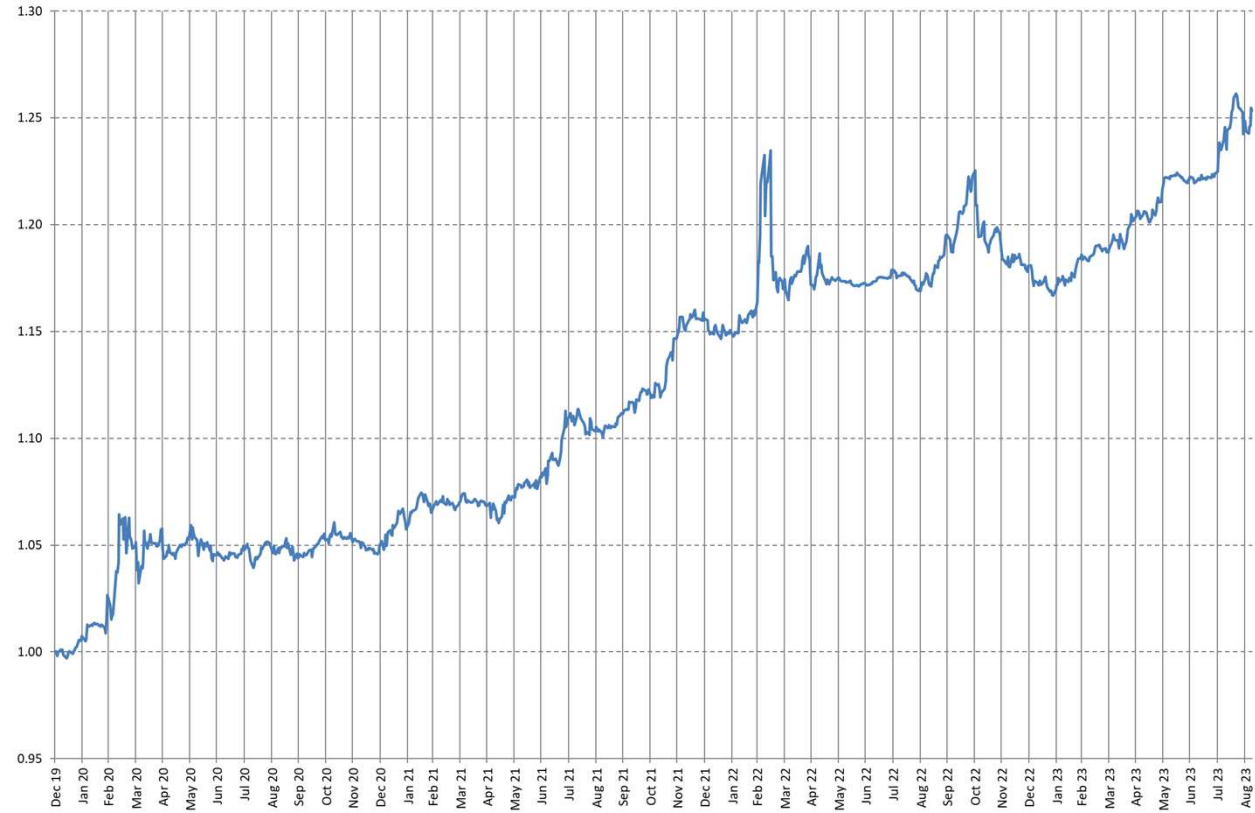

-0.66%

-2.54%

ARA optimisation

Performance

Uptrend in excess performance remain firmly intact

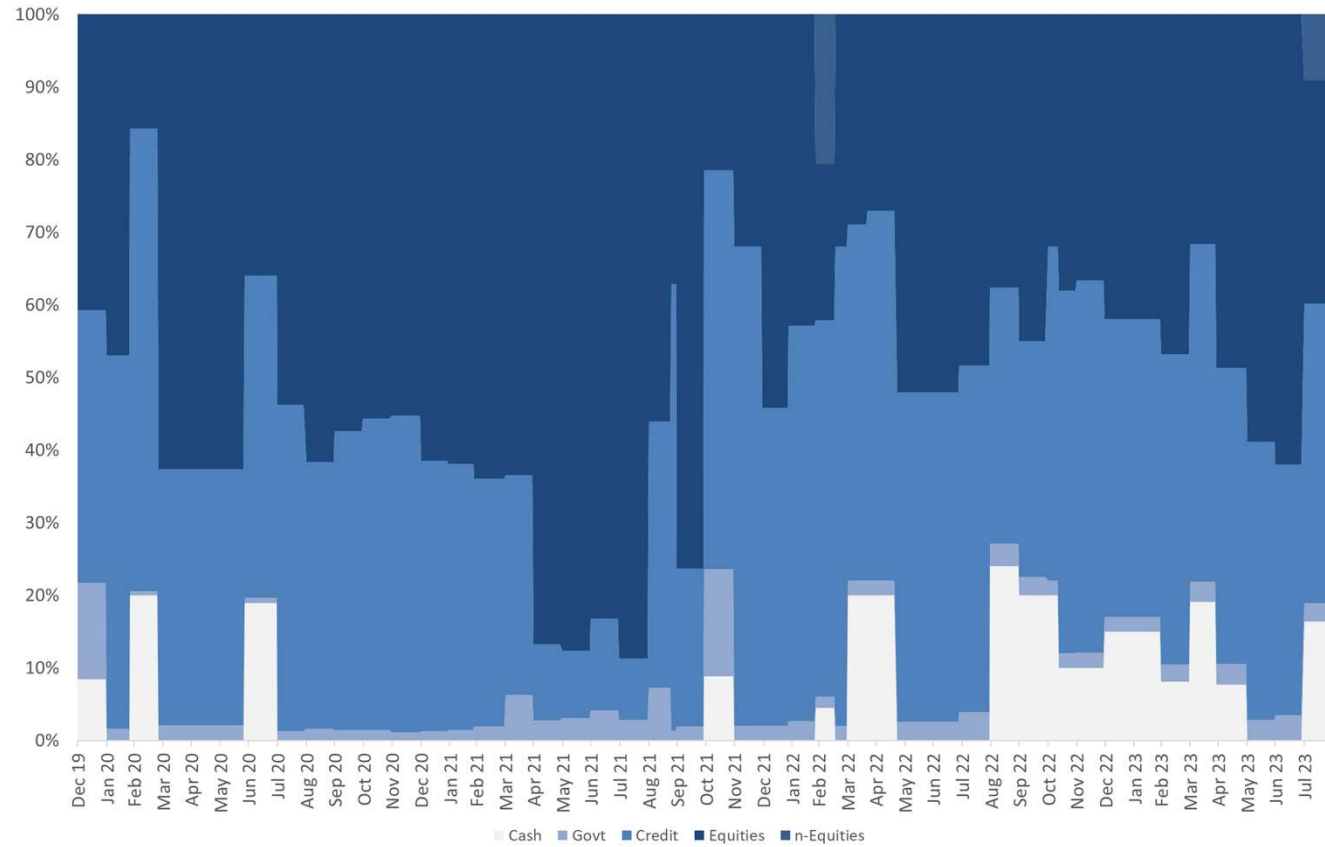**Accumulated excess performance**

+24.85%

IR Asset Allocation - timeline

Asset Allocation

ARA portfolio

September 2023

Increasing correlations push portfolio risk higher
=> Increase allocation to low volatility and inverse (short) assets

IR Medium risk model portfolio

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		100%	100%	0%		

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