



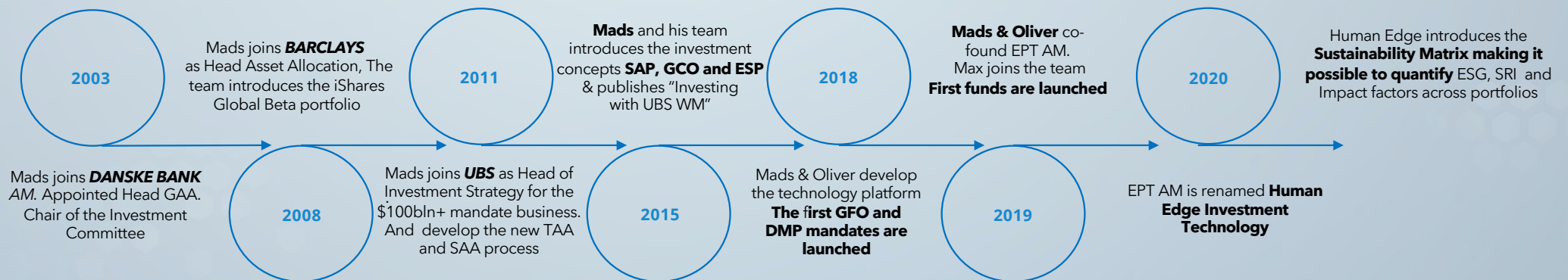
HUMAN **EDGE**
INVESTMENT TECHNOLOGY

EDGE Global Fixed Income Opportunities

An actively managed fixed income strategy with a proven track record of capturing return in the post zero-rate environment

Introduction and Innovation Track Record

- **HUMAN EDGE Investment Technology AG** was founded in 2019 and offers behavioral finance-based investment solutions incorporating algorithms for alpha generation and risk management. All solutions are available as ESG compliant solutions based on our Sustainability Matrix methodology.
- **Mads N. S. Pedersen** is Managing Partner. Prior to founding Human Edge, Mads was GMD at UBS, where his GAA team developed the company's asset allocation methodology and the SAP, GCO, and Endowment Style Concepts. USD 100+bn are managed based on these concepts today.
- **Oliver Dressler** is partner, co-portfolio manager, and CTO. Oliver has built our portfolio management system with its integrated Sustainability Matrix.
- **Maximilian Helletzgruber** is partner and head of business development responsible for delivering the right solution to our clients and prospects.

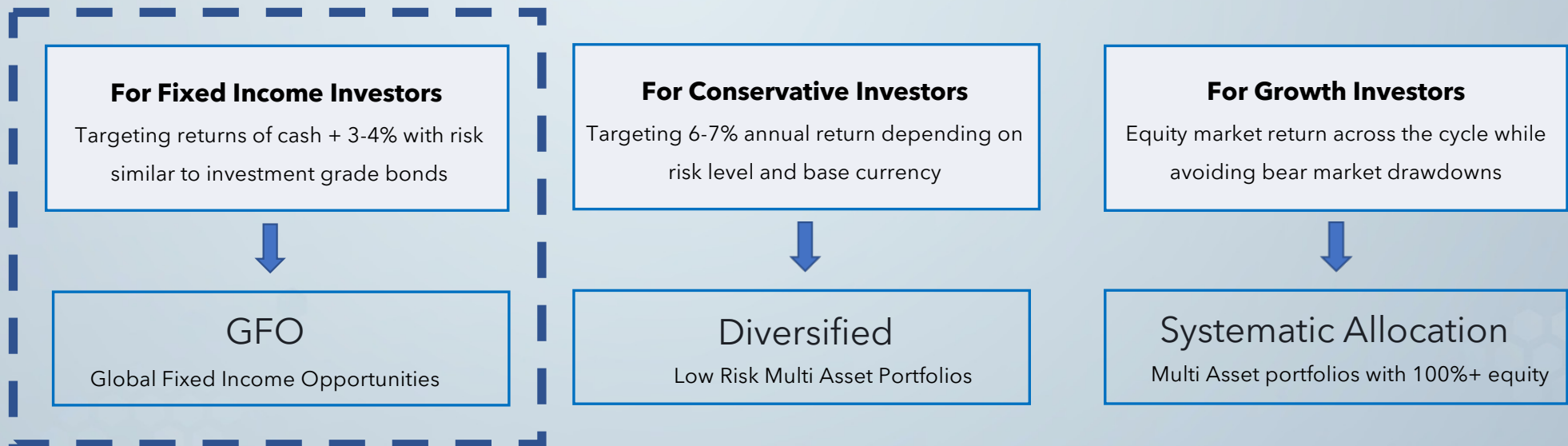


Concepts for sustainable investment solutions

To capture market upside while managing drawdowns, we offer investment solutions using behavioral finance insights and machine learning

Our offering is divided in three categories: Global Fixed Income Opportunities, Diversified portfolios and Systematic Equity Allocation

All solutions are available in ESG and SRI compliant versions based on our proprietary Sustainability Matrix



Our Investment Philosophy

A combination of science and experience

We use machine learning & algorithms to:

- Analyse big data sets
- Perform systematic and objective analysis
- Analyse complex relationships
- Identify patterns and repeatable cycles
- Secure consistency and limit reaction time

Manage risk and assess market outlook

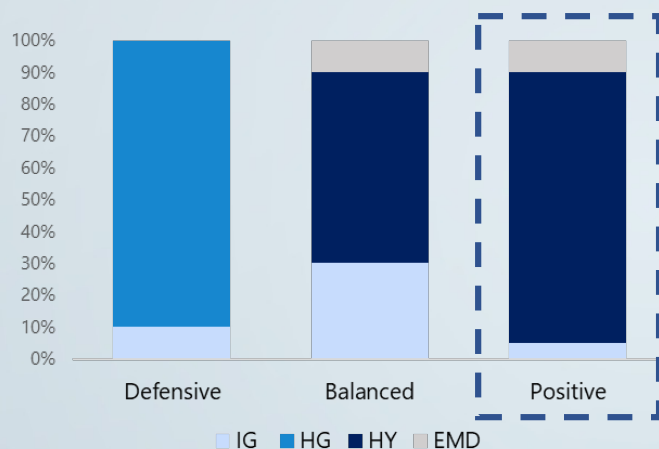
We use experience and expertise to:

- Identify regime and paradigm shifts
- Detect trends and structural changes
- Analyse politics and policy changes
- Recognize the important exceptions
- Create new and innovative solutions

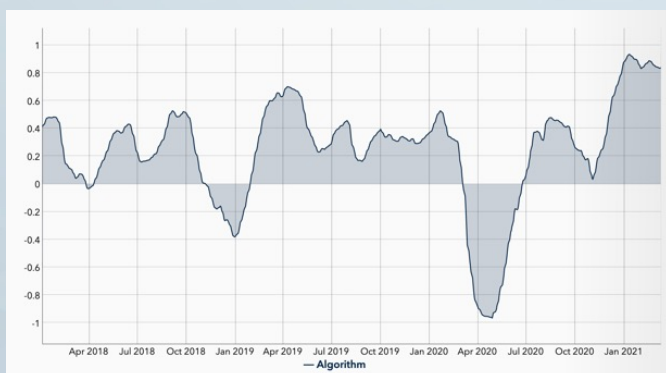
Create concepts and portfolios

The Dynamic Allocation Concept

Portfolios for different market conditions



Algorithm for assessment of market conditions



*Data Source: Edge by Human Edge Investment Technology. All calculations here are including instrument costs

Generating excess return with the help of machine learning

Long Term Total Return is increased by:

- Managing portfolio risk levels via systematic asset allocation
- Capturing positive trends in credit markets by holding a "Positive" portfolio when market conditions are accommodative
- Limiting volatility and drawdowns by holding a "Defensive" portfolio of high grades bonds in the most uncertain periods

Behavioral finance inspired machine learning algorithms

- The allocation decision is based on a combination of data covering financial conditions and macro economics
- We avoid the inconsistency of human decision-making with the use of behavioral finance and machine learning algorithms
- When our algorithms change, we change allocation, in this example from zero to 60% and from 60% to 100% high yield and emerging market debt.



HUMAN **EDGE**
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EDGE - Global Fixed Income Opportunities

An actively managed strategy with a proven track record of capture return in the post zero-rate environment



The GFO Strategy - Current positioning

| Positive | |
|---------------------------|--------|
| Equity Exposure: | 0 % |
| Positions | Weight |
| US HY (Xtrackers U) | 19 % |
| US HY (Lyxor U) | 19 % |
| US HY (iShares U) | 19 % |
| US HY Short (SPDR U) | 15 % |
| US HY Short (Pimco U) | 15 % |
| Euro HY (USD-H iShares U) | 13 % |

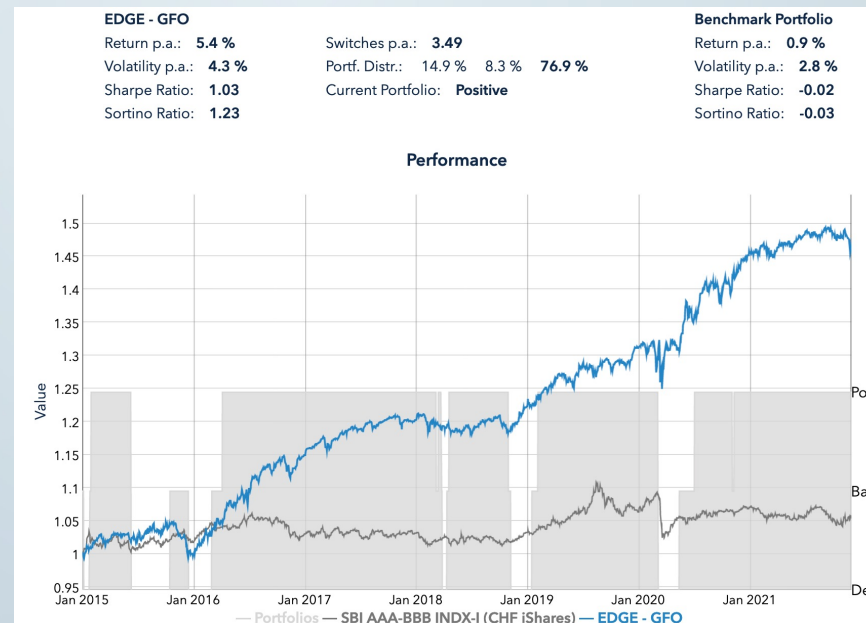
Algorithm calculating market conditions



- The GFO strategy is the latest version of the Dynamic Allocation Portfolio concepts we have developed over the last decade. The first version was launched with client assets in June 2015.
- To achieve the return target of cash + 3-4% we mostly hold a “Positive” portfolio of sub-investment grade bonds.
- Fixed income portfolios can lose money both on credit risk in recessions and, seen more recently, on duration driven sell offs in high grade bonds
- We have been running the underlying strategy for 3 years. By moving from 95% high yield and EMD to 100% high grade bonds in March 2020, we limited the drawdown to 10%.
- We are now back at 100% high yield and EMD and stand ready to step out again should the recovery falter

From a bull market to stagnation in Fixed Income

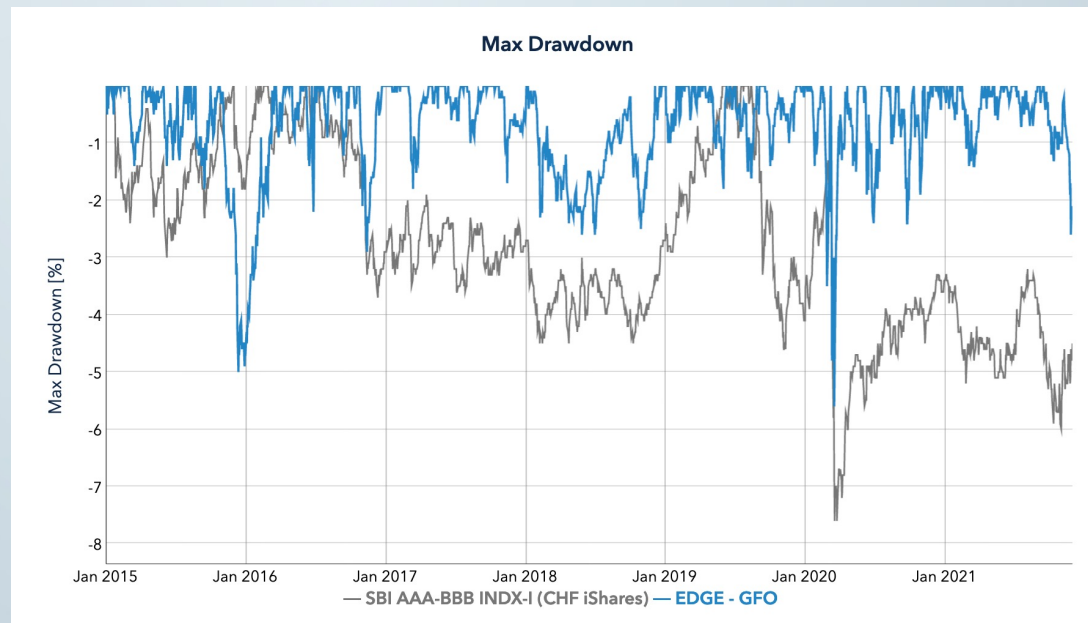
- As central bank rates are close to or below zero and the US is pursuing a supercharged recovery, you need the ability and willingness to change both duration risk and credit risk
- International inflation pressure is likely to spill over into Switzerland and further undermine the value of CHF savings



*Data as of November 1st, 2021. Source: Edge by Human Edge Investment Technology. All calculations here are including instrument costs

Active risk management allows us to protect on the downside

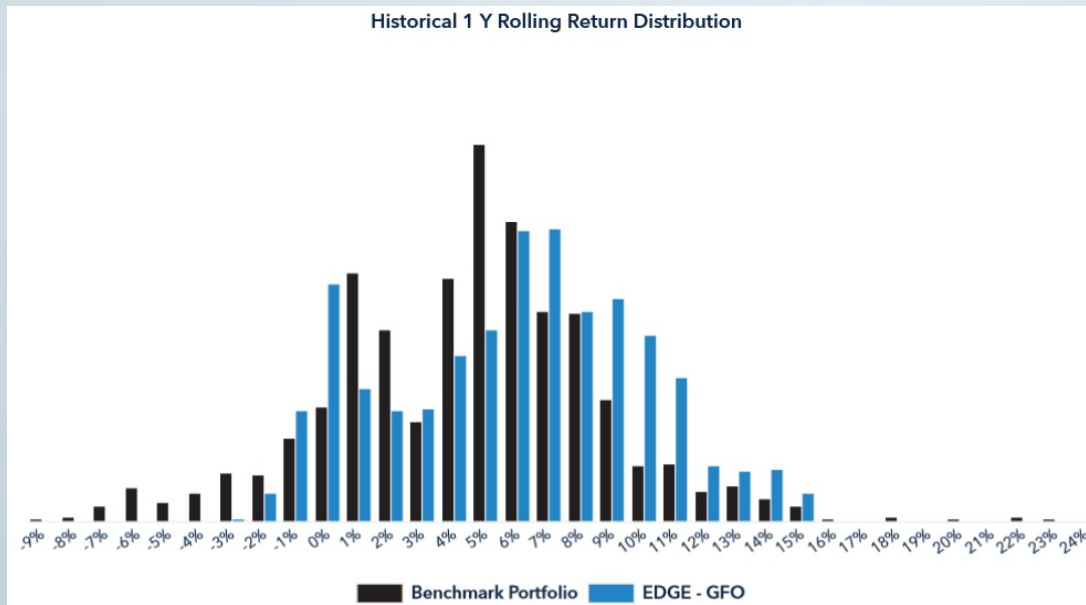
- Return of CHF bonds have been underwhelming in recent years. Drawdowns have been on level with international peers, but returns have not.
- In our GFO strategy we deploy an active and systematic risk management with focus on limiting drawdowns



*Data Source: Edge by Human Edge Investment Technology. All calculations here are including instrument costs, Benchmark SBI AAA - BBB

Strategy simulation results: Historical returns

The GFO "cuts off the left tail" of the year-over-year return distribution



| Year | EDGE - GFO | Benchmark Portfolio | SBI AAA-BBB INDX-I (CHF iShares) |
|------------|------------|---------------------|----------------------------------|
| 2015 | -0.1 % | 1.8 % | 1.8 % |
| 2016 | 15.1 % | 1.3 % | 1.3 % |
| 2017 | 4.6 % | 0.1 % | 0.1 % |
| 2018 | 1.7 % | 0.1 % | 0.1 % |
| 2019 | 7.2 % | 3.0 % | 3.0 % |
| 2020 | 11.0 % | 0.9 % | 0.7 % |
| 5 Y | 5.2 % | 0.6 % | 0.5 % |
| 3 Y | 6.8 % | 1.2 % | 1.1 % |
| 1 Y | 1.9 % | -0.7 % | -0.8 % |
| 2021 (YTD) | 0.2 % | -1.1 % | -1.1 % |

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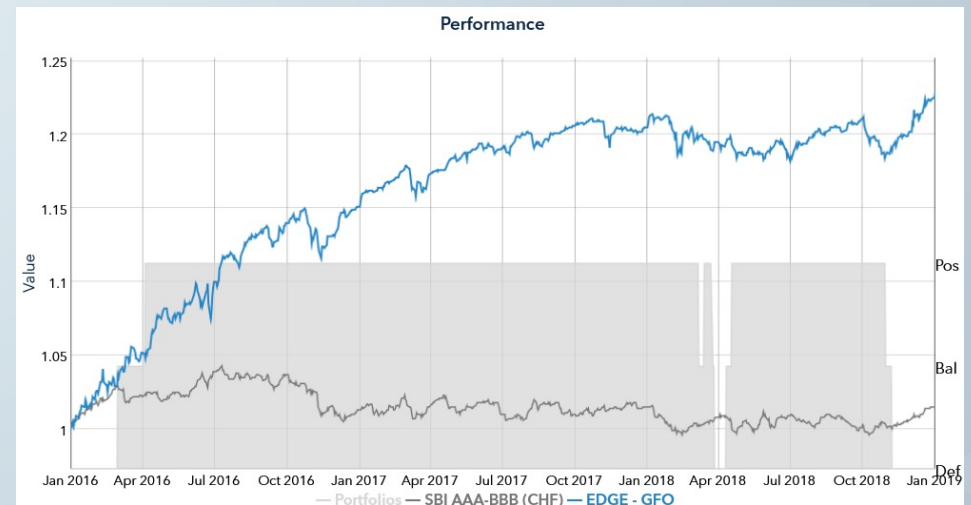
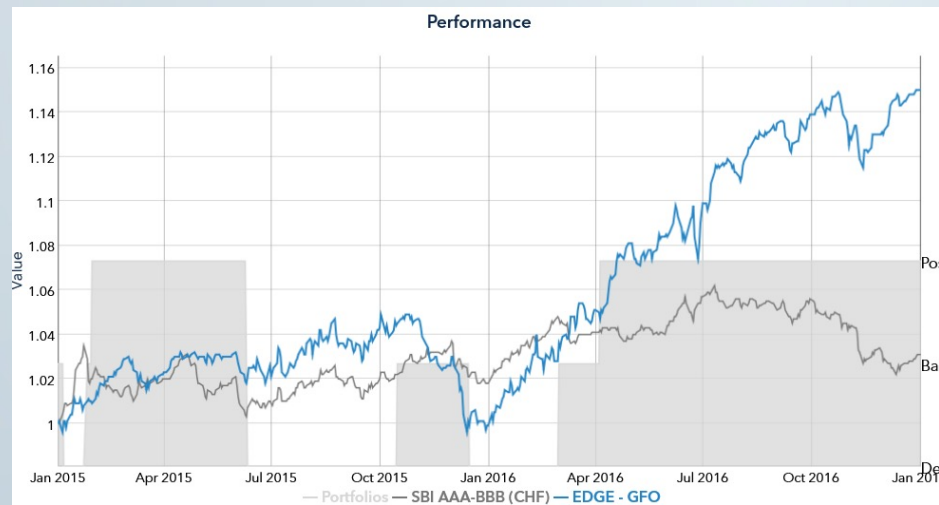
HUMAN **EDGE**
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EDGE - Global Fixed Income Opportunities
Performance through sell offs and recoveries



How GFO is navigating a correction

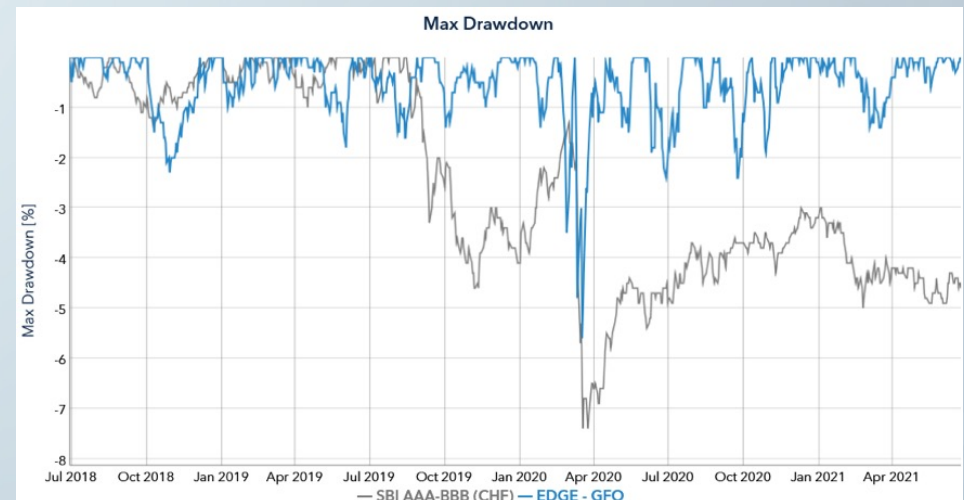
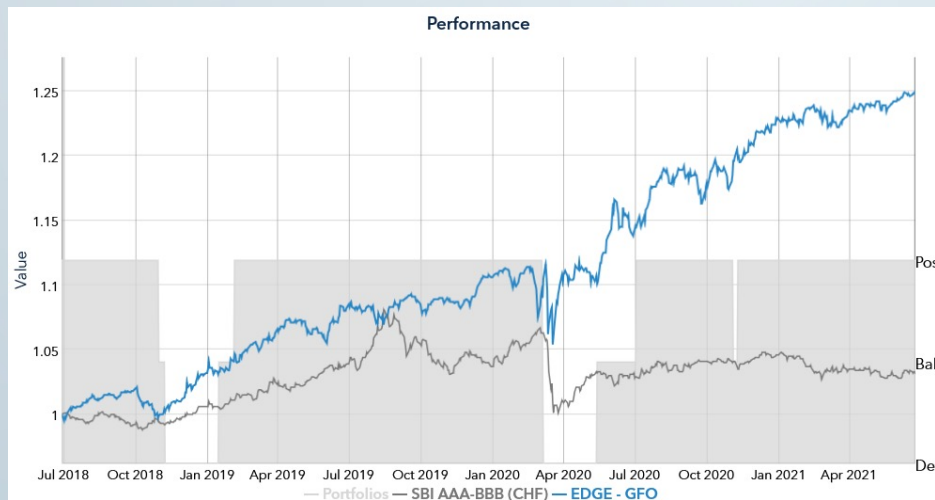
- In 2015, the EDGE GFO strategy moved out of high yield twice in the first half of the year and reduced exposure in October
- The moves helped limit drawdowns and capture returns as growth slowed and government bonds rallied.
- In Early 2016, the strategy moved back into high yield bonds and captured the recovery in credit while the Fed hiked rates through 2016-18.



*Data Source: Edge by Human Edge Investment Technology. All calculations here are including instrument costs

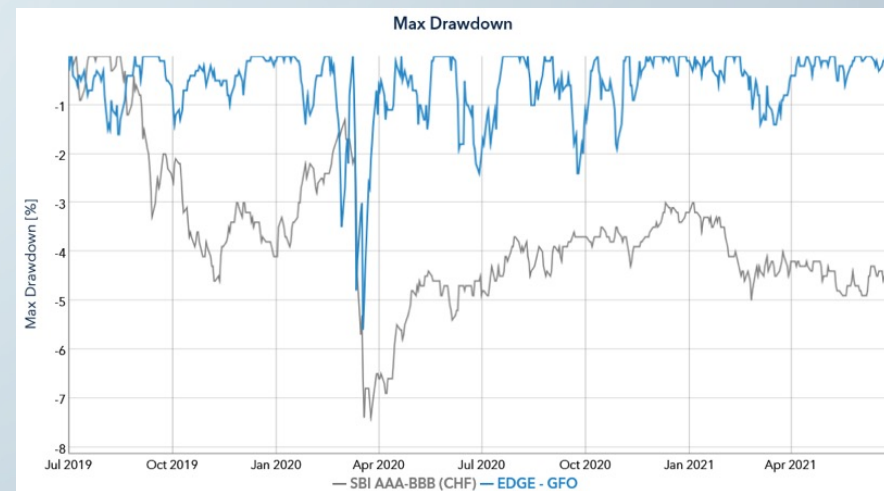
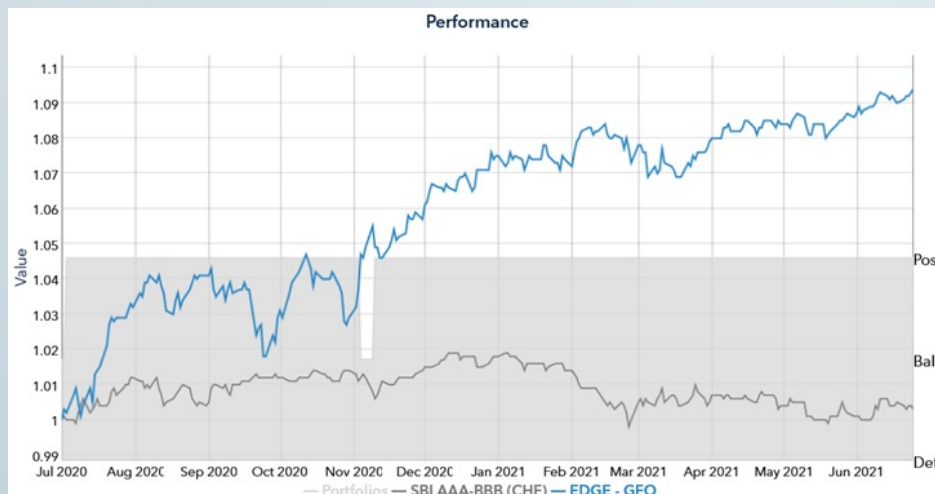
How GFO is navigating a correction

- As market unraveled in 2018, the GFO strategy reduced risk delivering a positive return through November and December.
- Cutting risk decisively in March 2020 limited the “Pandemic drawdowns”.
- Reestablishing high yield positions in May - June 2020, meant that the strategy captured the recovery and avoided the sell of long duration bonds through 2020-21.



How GFO is navigating a correction

- As yields sold off in 2020 and into 2021, the GFO strategy has remained invested in high yield bonds with short duration.
- This way the strategy delivered a solid return of 9%+ while long duration bonds sold off and have remained under water.



*Data Source: Edge by Human Edge Investment Technology. All calculations here are including instrument costs



Team

Mads N. S. Pedersen (CIO & Managing Partner)

Prior to joining Humen Edge Mads was Group Managing Director at UBS, where he headed the Global Asset Allocation team managing the strategies for the banks USD 100bln+ discretionary portfolios. In 2013 the team introduced the new TAA and SAA methodology and in 2015, the new portfolio concepts, GCO, SAP and Endowment Style Portfolios all collected in the publication "Investing With UBS Wealth Management". Prior to joining UBS, Mads was Head of Global Asset Allocation at Barclays and Head of Macro & Asset Allocation at Danske Bank Asset Management.

Oliver Dressler, PhD (Chief Technology Officer & Co-portfolio manager)

During his PhD in Chemical Engineering at ETH Zurich, Oliver focused on applying modern machine learning techniques to control miniaturized chemical systems with microfluidics and nanotechnology. Prior to joining Human Edge Oliver has worked as a data scientist and software developer in several startups, ranging from blockchain technology to organizational web apps. At Human Edge Oliver have built our Edge portfolio construction with its integrated algorithm factory and the Sustainability Matrix. Oliver is Co-portfolio manager for our multi asset portfolios.

Maximilian Helletzgruber (Head of Business Development)

Maximilian has experience in areas as diverse as commodities trading, art trading, consulting, business development and innovative technologies. He has worked at global companies, including Glencore and PwC, as well as start-ups in the technology space. His passion lies in innovation, in particular generating value from technological advances and the use of data.

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