

The logo for actiam, featuring the word 'actiam' in a dark blue, lowercase, sans-serif font. The letter 'i' is stylized with a blue dot above it. A thin horizontal line is positioned below the letters 'a', 'c', and 't'.

**Responsible  
for growth**

**Managing Climate Risks, SAA and beyond**

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Fixed Income & Multi-Asset  
December 2021**

# A note on the application of the methodology presented

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- Due to issues unrelated to the methodology implementation for the ACTIAM Sustainable Mix Funds has been postponed
- As a result we will not show the new asset class weights but demonstrate the impact on an optimal max Sharpe portfolio
- Our risk & return assumptions are for illustrative purpose only and on a gross basis

# Agenda

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1. Our views on:
  - The impact of climate risks
  - The impact of ESG and Impact Investing
2. Adjustment of risk & return assumptions
3. Portfolio optimization

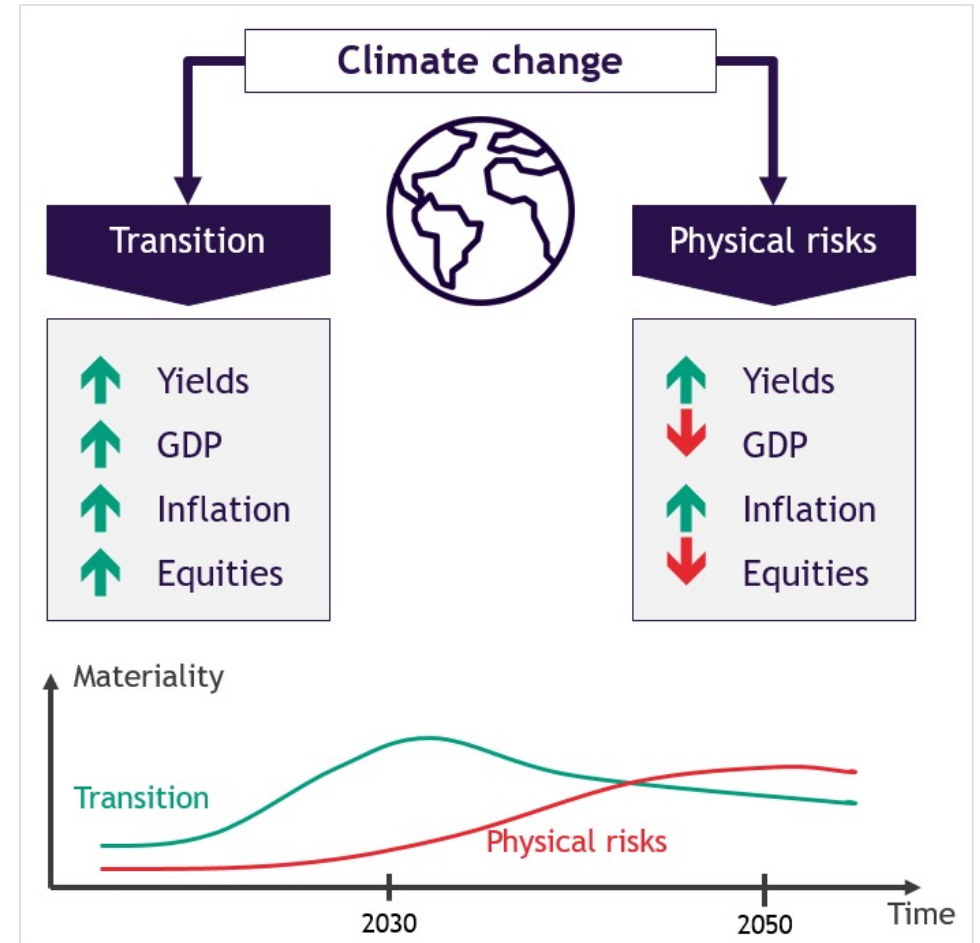
# Impact climate risks

## • Transition will add up to 1.5%\* of GDP next 10Y

- Massive transition investment and borrowing
- Higher growth & inflation
- Rise in bond yields limited by central banks\*\*
- Positive for equities but shake out will produce winners and losers

## • Beyond 10 years negatives start to dominate

- The tailwind for GDP will diminish/roll over
- Physical impact will increase
- Negative for equities



\* "Global Energy Transformation: A Roadmap to 2050", IRENA, 2018 Also Kahn et Al expect abiding the Paris Agreement may not only limit the long-term loss but even boost GDP/Capita within the next 10 years, see "Long-Term Macroeconomic Effects of Climate Change: A Cross-Country Analysis", IMF Working Paper 2019 \*\* We assume the 10Y Bund yield to rise to 2%, much more than implied by the 10Y forward (-0.11%) but real rates will likely remain zero to negative which we assume is a positive for (EPS) growth and limits a negative valuation impact for equities.

# Impact of ESG & Impact Investing

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- **Jacobsen et al\* expect ESG will lower volatility or increase returns**
    - They assume ESG excess returns for the Orderly scenario (temperature rise <2 °C) slightly above the historical outperformance for the MSCI ACWI +30 bp vs +20 bp)
  - **JPM AM\*\* regards ESG as a “free option” to align portfolios to:**
    1. Changing regulation and consumer preferences which should be persistent
    2. Increased demand for these companies’ shares but repricing should be transient
  - **Our own 5Y track record supports the view that ESG & Impact Investing pay**
    - Outperformance MSCI World 0.36% (ESG), MSCI ACWI 1.46% (Impact Investing)
- ➔ We expect ESG & Impact Investing will continue to reduce risks and/or increase returns

\* “Climate change and Asset Allocation”, Jacobsen et al, *Journal of Portfolio Management* 2021    \*\* “Doing good and doing well: ESG trade-offs in investing”, JP Morgan Asset Management 2021

# Adjustment of expected 10Y annualized returns

Expected gross returns	Non- climate aware TRR	Adjustments for:			TRR incl:		Comments
		Climate*	ESG	Impact Inv	Climate+ESG	Climate+Impact	
<b>Fixed Income</b>							
EUR AAA Sov 1-3	-0.1%	0.0%	0.0%		-0.1%		- Climate impact negligible, impact small rise yields compensated by higher carry on 10Y horizon
EUR Sov 1-10	0.2%	0.0%	0.0%		0.2%		
EUR Non-SOV	0.5%	0.0%	0.0%		0.5%		
EMD 1-10 hedged	2.2%	-0.1%	0.1%		2.2%		- Climate impact felt but limited the next 10Y
Global HY hedged	2.1%	-0.1%	0.1%		2.1%		
Micro Finance hedged	4.5%	-0.1%	0.1%		4.5%		- ESG may mitigate risk but no upside
<b>Equities</b>							
ACWI	4.0%	0.2%	0.3%	1.0%	4.5%	5.2%	- Climate impact positive next 10 years, negative on a longer horizon
Europe	5.0%	0.2%	0.3%		5.5%		
N-America	3.5%	0.2%	0.3%		4.0%		- US policy lagging Europe but heavy weight in low carbon tech stocks
Pacific	4.0%	0.1%	0.3%		4.4%		
Emerging Markets	5.5%	0.1%	0.3%		5.9%		- ESG and Impact expected to add upside based on VAR & track record
EUR Real Estate	5.0%	0.2%	0.3%		5.5%		

\* Assuming an orderly scenario

# Adjustment of expected 10Y annualized volatility

Expected volatility	Non Climate aware SD	Adjustments for:			Volatility incl:		Comments
		Climate*	ESG	Impact Inv	Climate+ESG	Climate+Impact	
<b>Fixed Income</b>							
EUR AAA Sov 1-3	0.6%	0.0%	0.0%		0.6%		- Climate impact negligible
EUR Sov 1-10	2.4%	0.0%	0.0%		2.4%		
EUR Non-SOV	3.0%	0.0%	0.0%		3.0%		
EUR Corporates	4.3%	0.0%	0.0%		4.3%		
EMD 1-10 hedged	7.9%	0.2%	-0.1%		8.0%		- Climate impact felt but limited the next 10Y
Global HY hedged	6.5%	0.1%	-0.1%		6.5%		
Micro Finance hedged	2.5%	0.2%	-0.1%		2.6%		- ESG expected to mitigate risk
<b>Equities</b>							
ACWI	13.0%	0.1%	-0.2%	-0.4%	12.9%	12.7%	- Winners & losers on the security level will slightly increase index volatility
Europe	15.2%	0.1%	-0.2%		15.1%		
N-America	15.0%	0.1%	-0.2%		14.9%		- ESG expected to more than compensate additional "climate" volatility based on historical data
Pacific	14.6%	0.1%	-0.2%		14.5%		
Emerging Markets	19.0%	0.2%	-0.2%		19.0%		
EUR Real Estate	15.5%	0.1%	-0.2%		15.4%		

\* Assuming an orderly scenario

# Correlations

CORRELATION MATRIX		A	B	C	D	E	F	G	H	I	J	K	L
A	EUR AAA Sov 1-3	1.0											
B	EUR Sov 1-10	0.6	1.0										
C	EUR Non-SOV	0.6	0.7	1.0									
D	EMD 1-10 hedged	0.2	0.4	0.6	1.0								
E	Global HY hedged	0.1	0.2	0.6	0.8	1.0							
F	MF hedged	0.1	0.2	0.2	0.3	0.2	1.0						
G	EQ ACWI	0.0	0.1	0.4	0.5	0.7	0.1	1.0					
H	EQ Europe	-0.1	0.1	0.4	0.6	0.8	0.2	0.9	1.0				
I	EQ N-America	0.1	0.1	0.4	0.4	0.6	0.0	1.0	0.8	1.0			
J	EQ Pacific	0.1	0.1	0.4	0.4	0.6	0.2	0.9	0.8	0.8	1.0		
K	EQ EM	0.0	0.1	0.4	0.6	0.8	0.3	0.8	0.7	0.7	0.7	1.0	
L	EQ EUR RE	0.1	0.3	0.6	0.6	0.7	0.1	0.7	0.8	0.6	0.6	0.6	1.0

- Our correlation assumptions are based on 10Y historical correlations of traditional asset classes except those for Micro Finance for which we made a, partial, judgemental call (available return data likely underestimated risk and correlations).
- No adjustments have been made (yet) in relation to climate change.



# Portfolio optimization

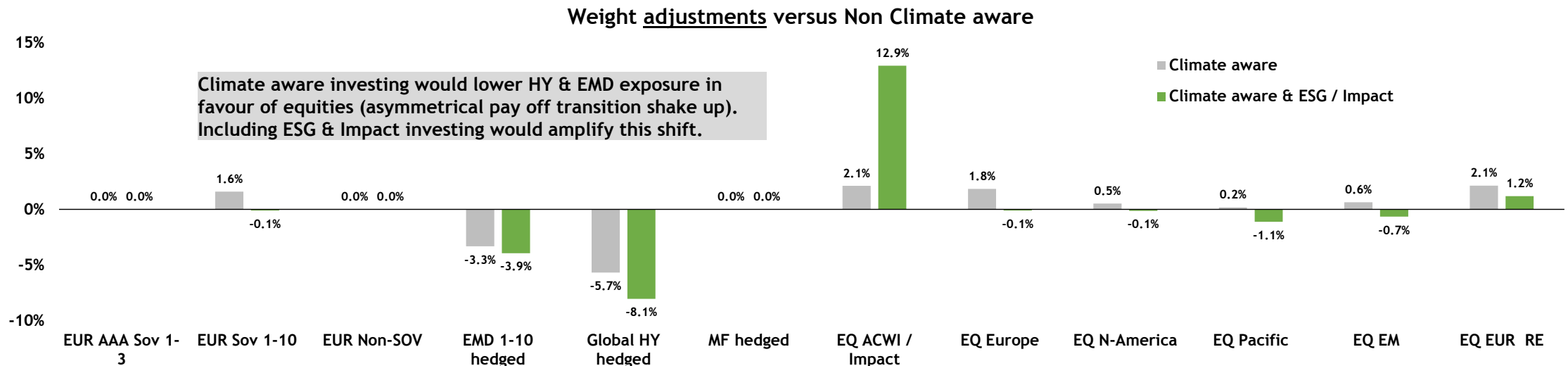
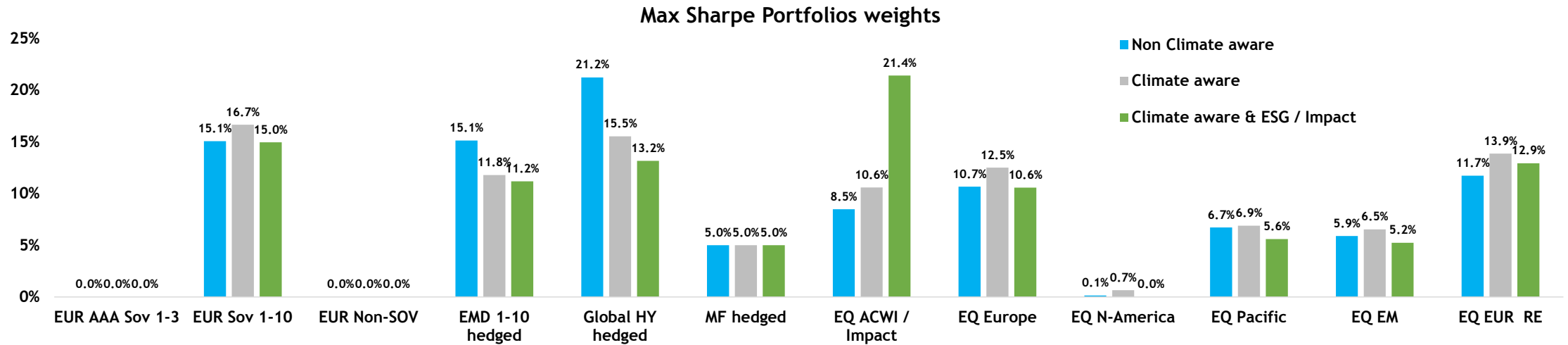
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We set the following objectives and constraints for each of the 3 portfolios:

- **Objective**
  - An asset allocation with the highest excess return per unit of risk or Sharpe ratio\*
- **Constraints**
  - A maximum allocation of 5% toward less liquid categories like micro credit
  - A maximum allocation of 60% toward any liquid asset category
  - A max weight for Impact Investing of 50% of global equities in order to limit TE
  - No short positions

\* We use the expected return on our EUR AAA 1-10 bond portfolio as the risk free rate. An alternative approach would be to find portfolios that offer the highest excess returns given an predefined risk level. This is what we do for the ACTIAM Mix funds.

# Max Sharpe portfolios with different risk & return assumptions



# Max Sharpe portfolios with different risk & return assumptions

## Risk & return statistics

	Return	SD	VAR 95%	VAR 99%	Sharpe
Non Climate aware	3.1%	6.2%	10.3%	14.5%	0.45
Climate aware	3.3%	6.7%	11.0%	15.5%	0.45
Climate aware & ESG / Impact	3.8%	6.8%	11.2%	15.9%	0.51

## •Summary & Conclusions

- For the next 10Y we expect massive transition investments and a corporate shake out
- In contrast with our more pessimistic longer-term view, we think these next 10Y will be positive for equities\* (still modest returns!) and negative for sub investment grade debt
- We expect ESG and Impact Investing will continue to reduce risks and/or increase returns
- This will allow for an even bigger shift into equities when targeting a max Sharpe portfolio with only a modest increase of risk versus the Climate aware portfolio excluding ESG

\* One important assumption within our base case scenario is that real (government) bond yields will remain zero to negative which would limit the risk of a negative rerating of equities. Consequently, the biggest risk to our base case scenario is inflation getting out of control forcing governments to resort to fiscal contraction and central banks to push up real rates far above zero for multiple years.