Factor Investing in Credits: A Portfolio Manager’s Perspective

Spaulding Forum

Matthijs Geertjes & Bart Reidsma

November 2021

PGGM

Who are we?

PGGM

- Not-for-profit cooperative pension fund service provider
- Offer our clients pension management, asset management and management advice
- At the end of 2020, we managed pension assets worth EUR 268bln for 4.4mln participants

Bart Reidsma, Senior PM/Analyst Euro Credits

- Focus on the Euro credit market, both investment-grade and high-yield (BB)
- Primary coverage: automotive, technology and REITs
- ESG teamlead
- Supporting the roll-out of factor investing in credits for over three years

Matthijs Geertjes, PM/Analyst EMC + Credit Quant

- 50% EMC PM/Analyst and 50% quant for credit cluster
- Focus on utilities and telecom
- Advanced knowledge of programming languages
- Involved in modelling factor investing for over three years

PGGM

Agenda

1. Introduction
2. Method
3. Findings
4. Conclusions
5. Next steps
6. Appendices

1. Introduction

- Factor Models describe the commonality in risks and returns of corporate bonds or stocks; systematically incorporating Factor information can lead to superior performance.

- Systematic investing within fixed income has been lagging behind equity markets for a long time. **This paradigm is shifting rapidly** due to increased data availability and awareness over the past years.

- An increasing number of asset managers are adapting to these new developments by including systematic investing processes in their investment approach.

- In order to offer our customers better risk-adjusted returns PGGM needs to adapt by developing our own factor model for credit markets and integrate factor signals within the current investment process.

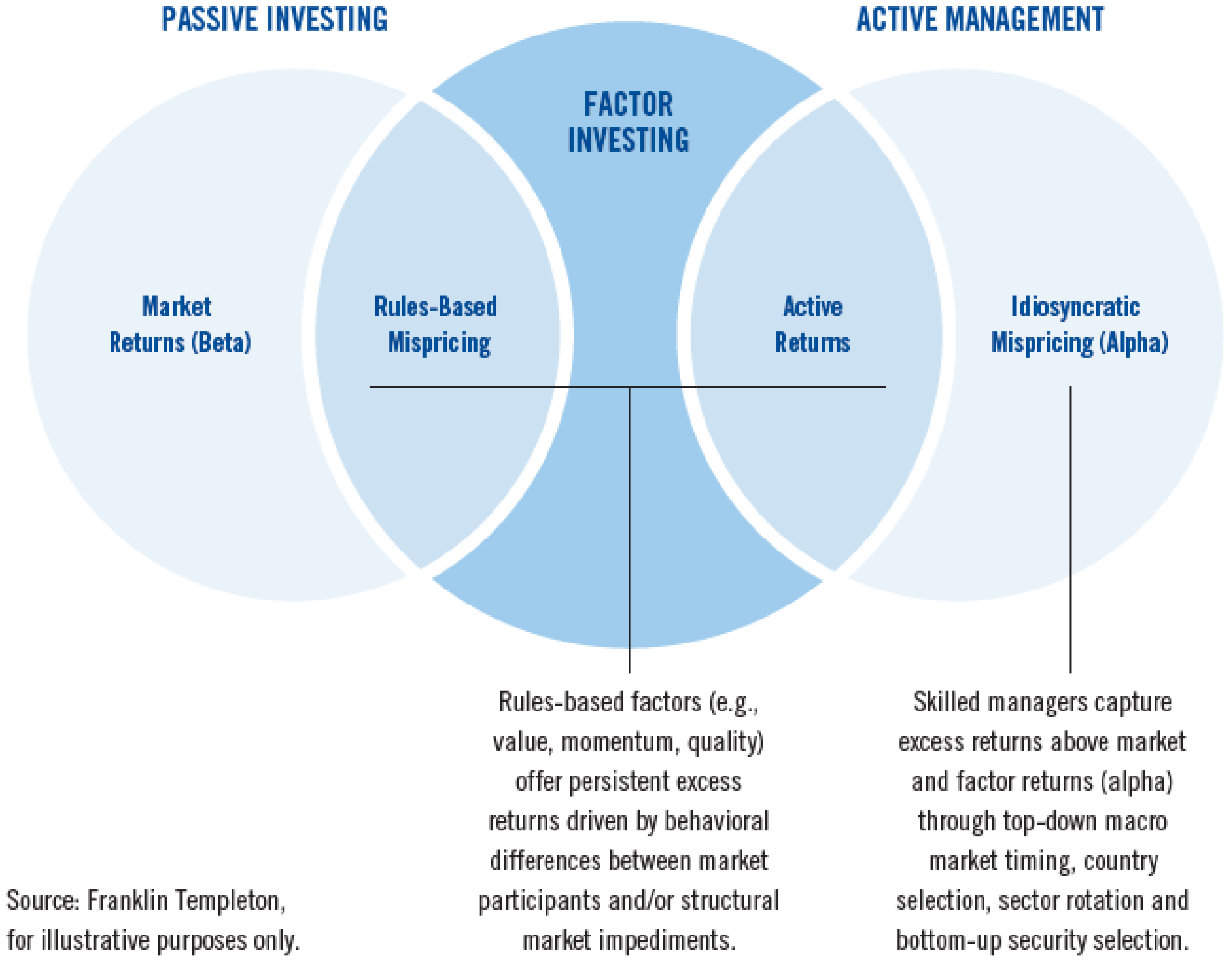
1. Introduction: What can factors be used for?

We propose to integrate factor signals within the current investment process. Factors can be used to:

- Identify **risks** in the portfolio
- Understanding of sources of returns
- Identify **structural factor underweights** that could be a drag on performance
- Universe **screening**
- EM can use the model for manager selection and monitoring

QUANTS EXTENDING INTO ACTIVE MANAGER RETURNS

Exhibit 1: Factors sit between beta and alpha



Source: Franklin Templeton, for illustrative purposes only.

2. Method

- Our analyses resulted in a 3-factor model incorporating **Value/Carry, Momentum and Low Risk**. Each factor consists of a weighted average score of metrics based on accounting, equity market, and/or bond market data. A multi factor score is calculated by taking the average of the four single factor scores.

  Components were only included in the final multi factor model if the following criteria were satisfied:

  1. Higher scores on the attribute lead to an increase in returns
  2. Returns increase monotonically in quantile portfolios
  3. Increase in return is not explained by loading on extra risk (i.e. the factor still works DTS-neutrally)
  4. Results are persistent in all markets (EU IG, EU HY, US IG, US HY)

- The analyses shown are **conducted on a liquid subset of the Barclays Euro IG index**. A single 'most representative bond' is systematically chosen for each issuer based on issue size, time to maturity, age and subordination. Only senior bonds were considered in this analysis for comparability.

- Each month, **5 quintile portfolios are constructed by ranking bonds on their Multi Factor score.** Portfolios are rebalanced each month and equally weighted. The sample period spans from June 2001 to December 2020. We consider excess returns over duration matched treasuries.

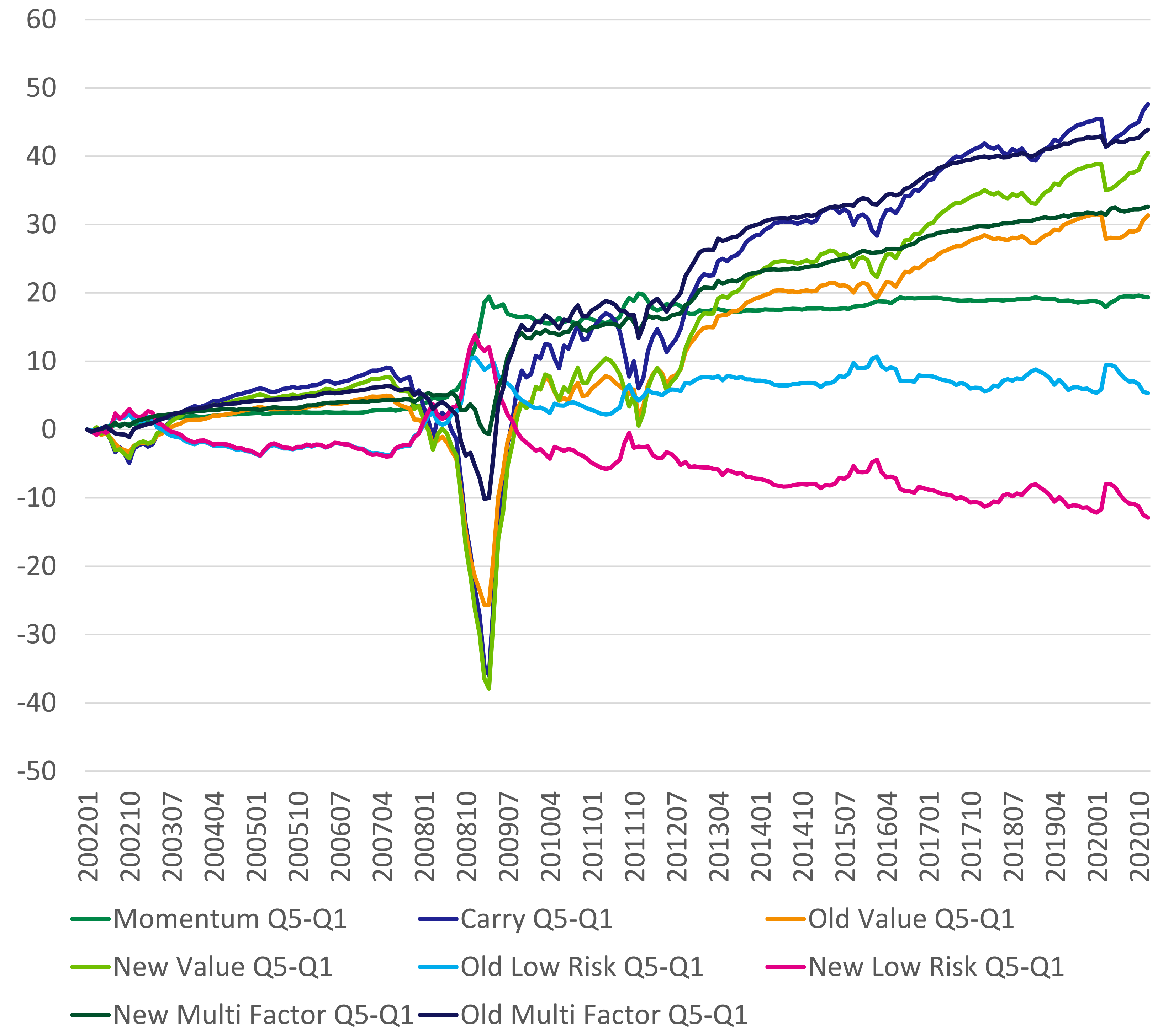
- We study both long-short portfolios (long the highest quintile scores, short the lowest quintile scores, or Q5-Q1) as well as long-only portfolios (consisting of only the top quintile, or Q5)

- The main focus of this presentation is on the Euro IG market, full results of alternative universes are provided in the appendix

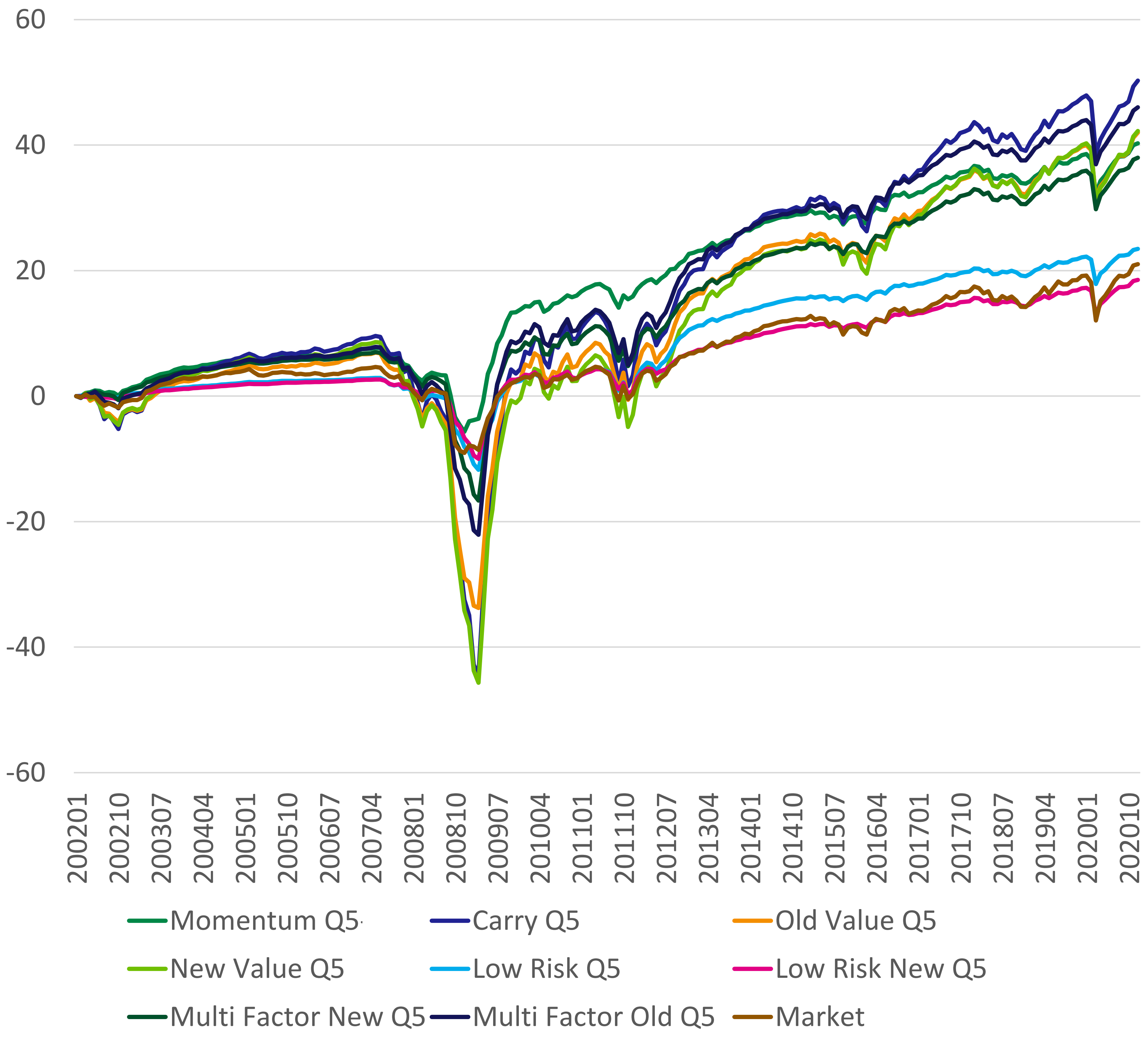
PGGM

3. Backtest of the model

Cumulative Q5-Q1 Factor Portfolio Returns



Cumulative Q5 Factor Portfolio Returns



Source: PGGM

PGGM

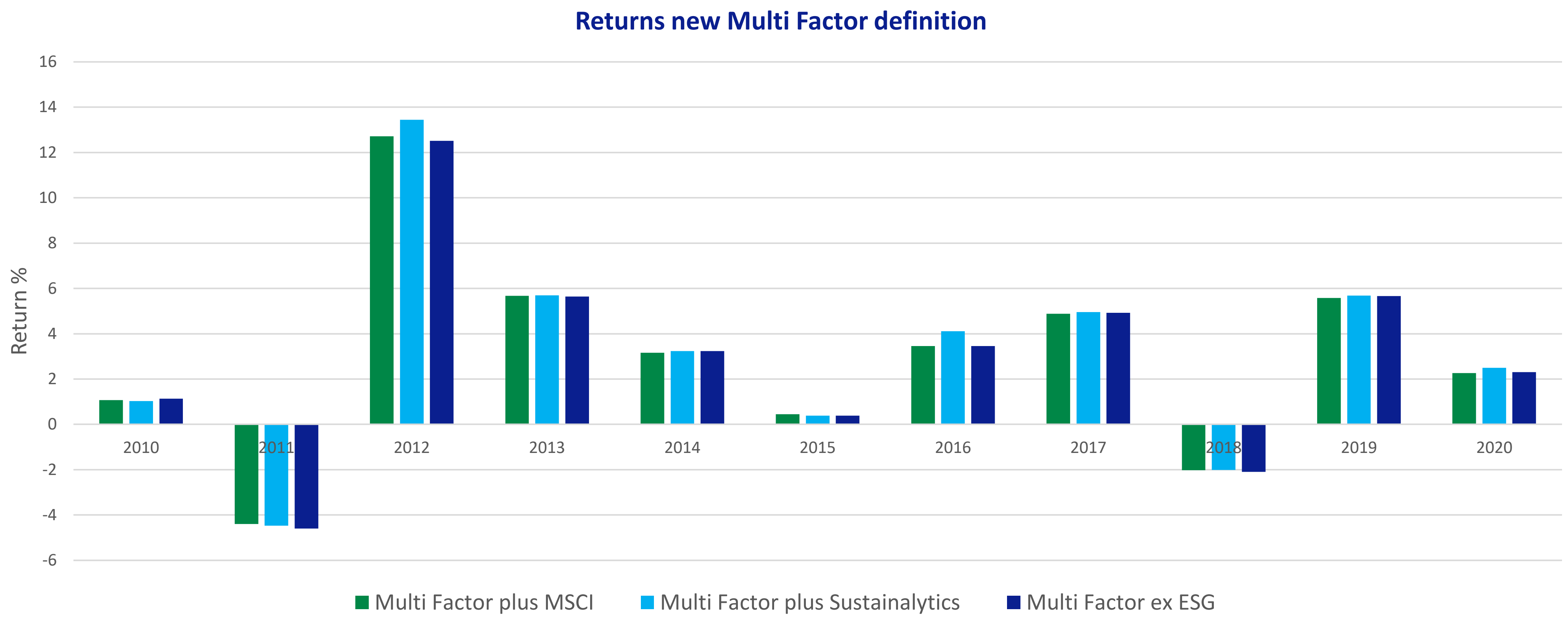
3. Backtest of the model

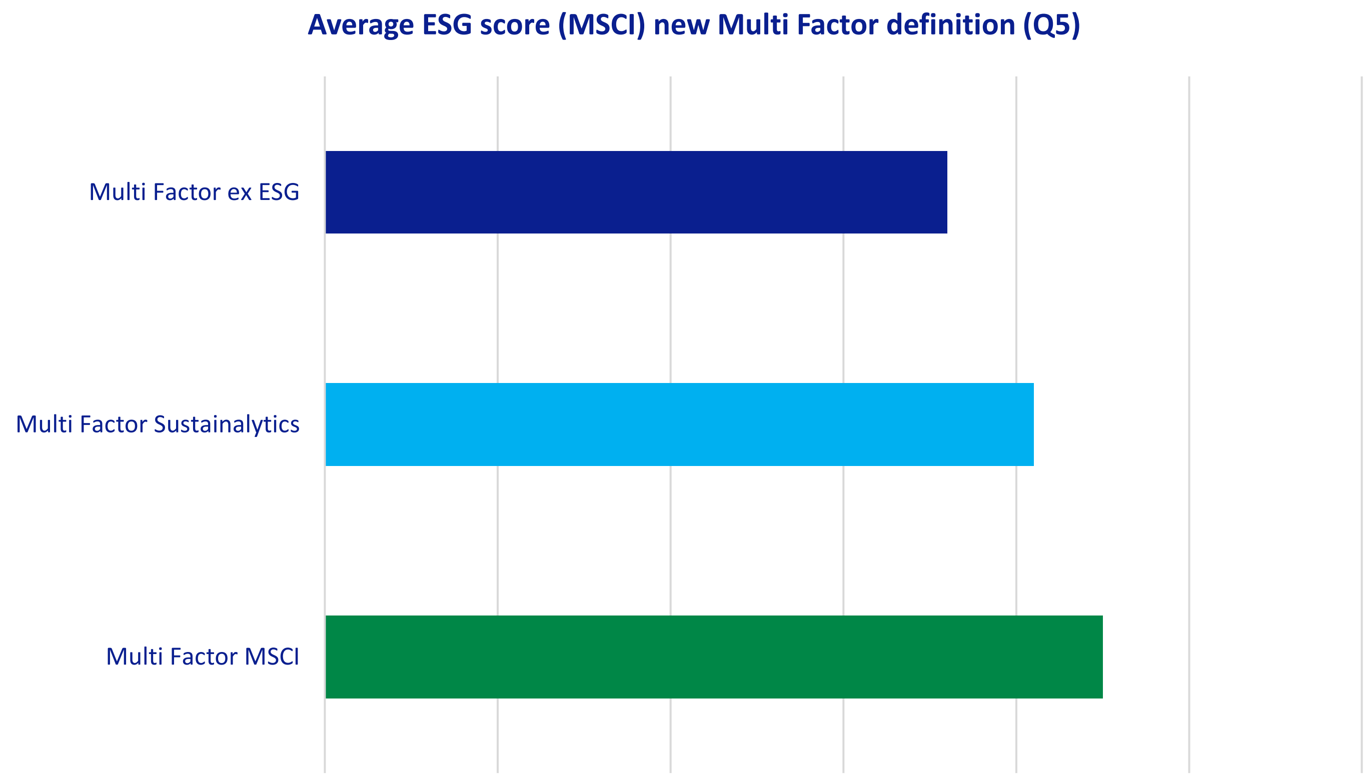
	Multi Factor New					
	Q1	Q2	Q3	Q4	Q5	Q5-Q1
Mean	0.28	0.64	1.12	1.38	2.01	1.72
Volatility	3.02	3.65	3.54	3.98	3.95	1.94
Sharpe	0.09	0.18	0.32	0.35	0.51	0.89
Max drawdown	-17.23	-21.48	-21.05	-22.31	-21.33	-5.89
One-way turnover	212.5	434.79	511.88	470.06	225.02	438.33
Median universe size	351	351	351	351	351	351
Median constituent count	70	70	70	70	71	141
Information ratio	-0.73	-0.78	0.04	0.4	0.91	0.89
OAS	124.19	140.14	151.41	163.1	175.75	51.56
OAD	5.47	4.75	4.54	4.14	3.44	-2.03
Rating	7.36	6.85	7.04	6.8	6.58	-0.79
DTS	6.7	6.92	6.7	6.55	5.91	-0.79

Source: PGGM

- Strong and monotonic increase in mean, with little extra volatility, making for strong Sharpe- and Information ratios
- Some loading on OAS due to Value/Carry, while negatively loading on OAD
- Similar rating profile and DTS

4. ESG: Our results show that ESG likely does not have a large effect on corporate bond returns





Source: PGGM

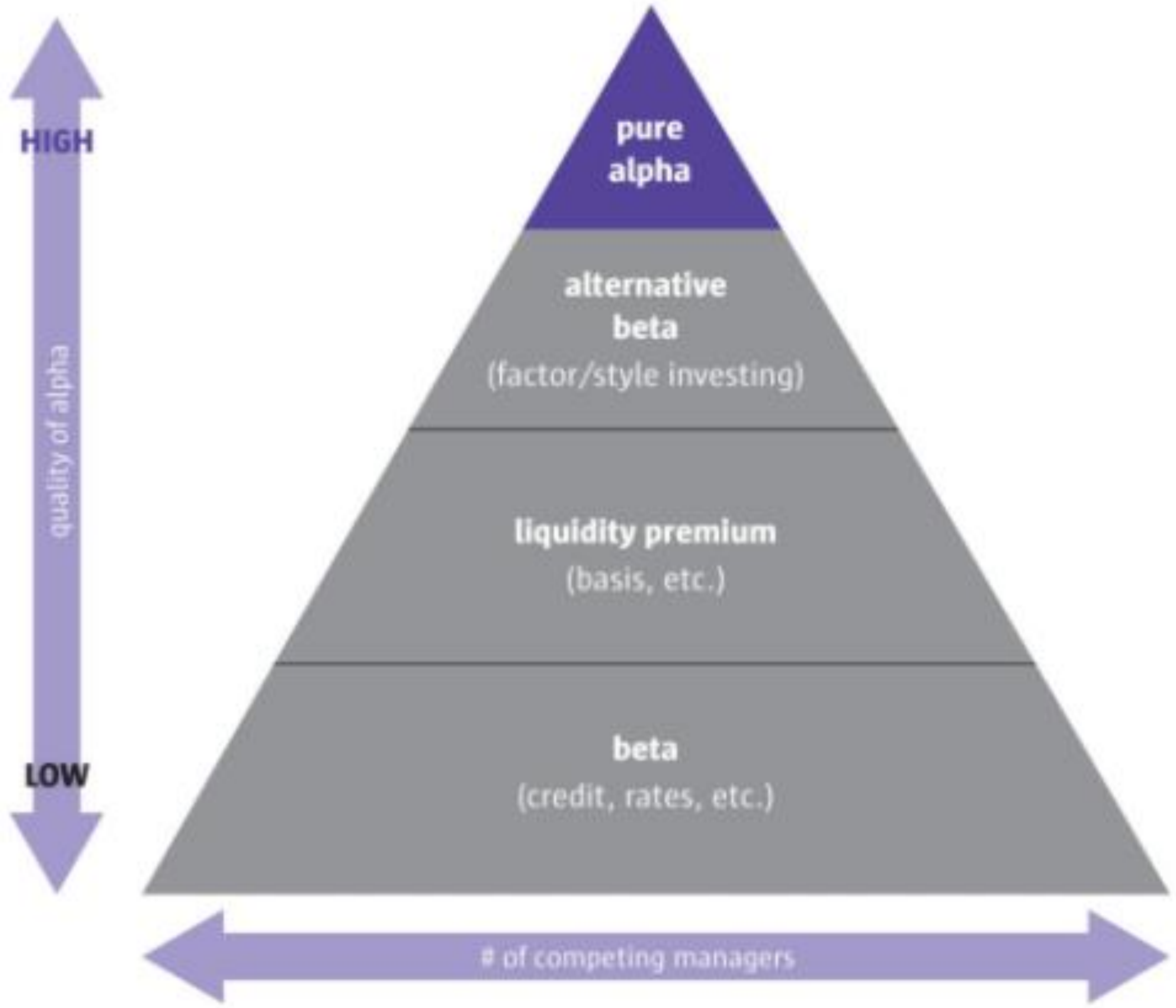
- We found no statistically significant excess return between low and high ESG and ESG subscores portfolios
- Similarly, ESG Momentum and Controversy strategies did not show statistically significant results

- Addition of ESG in Multi Factor model does not decrease returns significantly though while it increases the ESG score substantially

5. Factor attribution of the Euro IG Portfolio

- Factor exposures and returns were computed from the Euro IG Portfolio between 2014 and 2020
- Main complicating factors: off-benchmark exposure and subordinated exposure
- Result was that historical exposures to factors was very low. Realized alpha can therefore not be explained by factors
- Big difference with equity: many active managers with fundamental strategies have shown they can outperform the benchmark

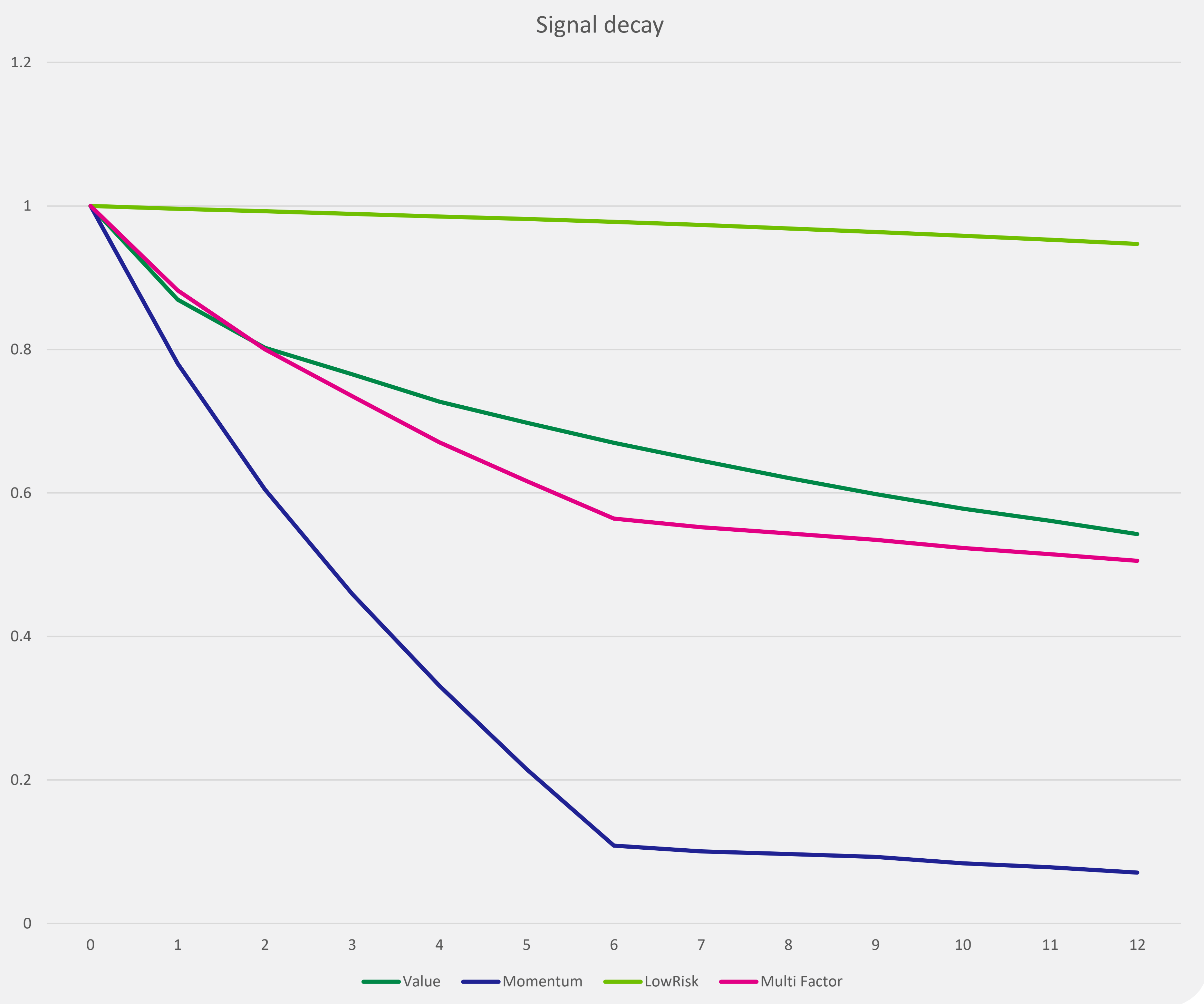
➢ **Scope to complement an already successful fundamental strategy with insights from the factor model!**



Source: DCI

6. Investment process
Can you apply factors without excessive trading?

- Turnover of the portfolios with monthly rebalancing is high (annually 227% for Q5), however returns net of transaction costs still outperform the market. Breakeven costs vary between roughly 65bp for EUR IG and up to 200bp for EUR HY.
- Restricting turnover (in the crudest way possible) by rebalancing once every 6 or 12 months shows portfolios with higher multi factor scores still outperform (albeit less so).
- Low-risk factor is very persistent so requires little trading, while momentum effect is basically gone after 6 months.
- Our approach is not purely systematic, so turnover restrictions less of a constraint.



Source: PGGM

6. Investment process

Factor data now available in Bloomberg

- Automatic upload of key inputs, factor scores and multifactor scores
- Looking to add remaining factor inputs depending on data constraints
- Easy access to all factor data in portfolio management screens

Easy overview of multi-/single factor scores at any level and versus the benchmark

Name	UD-MF_WAS		UD-MF_SN_WAS		UD-LR_SN_WAS		UD-MOM_SN_WAS		UD-VAL_SN_WAS	
	Port	Bmrk	Port	Bmrk	Port	Bmrk	Port	Bmrk	Port	Bmrk
CRBDEUR	0.49	0.48	0.51	0.49	0.47	0.49	0.53	0.51	0.51	0.49
Banking	0.81	0.78	0.53	0.52	0.53	0.49	0.48	0.52	0.53	0.52
AARB										
ABNANV		0.88		0.61		0.30		0.72		0.58
ACAFP	0.60	0.60	0.04	0.04	0.15	0.15	0.13	0.13	0.51	0.51
AIB		0.88		0.44		0.55		0.32		0.54

Next step: Generate attribution reports based on the various factor scores in Bloomberg

Name	Avg % Wgt		Tot Rtn			Alloc	Selec	Tot Attr (LCL)	Active Rtn	Excess Rtn
	Port	Bmrk	Port	Bmrk	+/-					Port
CRBDEUR	102.80	100.00	-46.76	-60.29	13.54	-6.41	15.44	13.69	13.22	123.98
Banking	18.17	17.37	-23.44	-29.68	6.24	-0.42	1.19	0.39	8.06	90.70
AARB	0.00	0.03		4.38	-4.38	-0.02	0.00	-0.02	-143.89	
ABNANV	0.00	0.31		-12.22	12.22	0.07	0.00	0.07	-59.72	
ACAFP	0.71	0.64	-30.93	-80.56	49.62	0.00	0.09	-0.06	15.10	78.86
ACAFP 0 ½ 06/24/24		0.02		-14.81	14.81		0.00	0.00	-51.43	
ACAFP 0 ¾ 12/01/22		0.02		-21.21	21.21		0.01	0.01	-12.10	
ACAFP 0 ¾ 12/05/23	0.05	0.02	19.72	9.51	10.21		0.01	0.02	-26.28	34.64
ACAFP 0 ⅛ 12/09/27		0.02		-189.26	189.26		0.01	0.01	-18.78	

PGGM

6. Investment process

Monthly screening of factor scores for all companies under coverage

Focus on:

1. Companies that we are **constructive** on but **score poorly** in the factor model:

- Multi-factor score VW Nov ’20: **0.14** – we sticked to our OW
- Multi-factor score VW May ’21: **0.91** – OW has paid off, MF score ‘caught up’ with our fundamental view

➢ Factor scores a useful **challenger**, but we don’t always agree

Company	Credit Rating (senior)	Current Active Position (MV)	Current Active Position (DTS contribution)	Multifactor Score (Sector Neutral)	Allocation (MTD)	Selection (MTD)	Allocation (YTD)	Selection (YTD)	Recent Developments	Current View (Fundamentals)	Current View (valuation senior)	Current View (valuation sub)
Volkswagen (Nov '20)	BAA1	0.0133	0.0812	**0.14**	1.26	-0.11	3.37	4.85	-Presented planning 'round 96'. VW confirmed a return to pre-crisis returns in 2022 (6-7% EBIT margins) while 2021 is seen as transition year. 2025 targets unchanged with 7-8% EBIT target and 2022 FCF should be in double digits again. Some hints on legal structure change w.r.t. Ducate and Lamborghini (spin off), while it also prepares to delist Audi. On CO2 it will be very close, they might miss it by 1g on late start of ID3. -Q3: decent. Rev -3.4%, volumes -1.1%, car market share up from 12.6% to 13%. Operating profit -33%, equating to a 5.4% margin. Auto net cash up from <20bn in 2Q20 and 21.3bn at FYE19 to 24.8bn thanks to 3bn hybrid issuance. Q4 will be negative given div payment and diesel outflow, so likely to end the year close to FYE19 level.	Neutral+	Fair Value	Cheap
Volkswagen (May '21)	BAA1	0.0149	0.0109	**0.91**	0.05	0.48	1.10	1.25	-Outlook to positive at Fitch and stable at S&P. -Q1: Good. Already pre-released. Rev +13.3%, 20.5% growth in vehicles sold. Automotive net cash flow at 4.7bn, with liquidity improving by 3bn to nearly 30bn. EBIT guidance slightly raised to 5.5-7 from 5-6.5% despite semi issues and raw material inflation.	Neutral+	Fair Value	Fair Value

2. Companies with **strong factor scores** which we are **underweight**

Source: PGGM

PGGM

6. Investment process

Useful tool to scan for opportunities

- Since Jan 1, 2021, we can invest in high-yield
- In Q4 last year, we used the factor scores as a tool to identify which companies warranted a more extensive analysis

➢ Within REITs, we ended up adding Balder and Heimstaden Bostad

Perps of IG REIT issuers:

Ticker	Company	Bond rating	# of bonds	LR	Value	Momentum	MF	Comment
SBBBSS	Samhallsbyggnadsbolaget i Norden AB	BB	2 (4.625 & 2	0.09	0.38	0.74	0.26	Interesting with acquisition, good to check whether they want to do more
BALDER	Fastighets AB Balder	BA2/BB+	1 (3.000)	0.57	0.80	0.68	0.88	Only 1 relatively short one, interested to follow senior though so doesn't hurt
AKFAST	Akelius Residential Property AB	BB+	2 (3.875 & 2	0.59	0.62	0.30	0.53	Relatively expensive vs the others who all trade in line
HEIBOS	Heimstaden Bostad AB	BB (P)	2 (3.248 & 3	0.63	0.50	0.41	0.56	Looks attractive for rating; 3.248 has decent size too (800m)

Source: PGGM

- Potentially can play a more dominant role in the construction of companies that we follow once we further roll out factor investing

➔ Combination of fundamental analysis and factor analysis leads to best results

PGGM

7. Conclusion

- While still in the infancy stage, factor investing in credits is gaining traction. An increasing number of asset managers starts to include factors in their investment approach. PGGM has developed their own factor model to complement the active fundamental strategies.

- Factor portfolios are able to persistently outperform the benchmark in the Euro IG Credit market
  - Over the sample period the long only (Q5) multi factor portfolio had a net mean excess return of roughly 2% vs 0.8% of the benchmark
  - Factor portfolios do not load excessively on risk factors such as DTS.

- We believe by combining an active fundamental strategy with a systematic investing process you can lever the best of both worlds.

PGGM