# Scorecard for alternative assets

1   Aim of the project

The aim is to verify the effectiveness of the scorecard concept on real estate investments in the Morningstar database. Fortunately, the number of classic and alternative investment opportunities increases constantly. An automated scorecard process helps to profit from the increased number of investment companies and to improve the due diligence efficiency. The following proven scorecard concept uses 8 quantitative and 2 qualitative factors for the allocation, the selection and the monitoring of the most successful managed investment companies. This positive experience with classic liquid investment funds is being verified on real estate investment funds with its described characteristics. Depending on further interest, the gathered data and information is planned to be further used for:

➢ Due diligence analysis of other real asset investments, such as agricultural, infrastructure, farm-& timberland
➢ Asset allocation and portfolio risk budgeting including simulation
➢ Scenario testing and historical performance reviews

2   Overall investment process

The tested scorecard is embedded in an investment process for professional investment funds. This process embraces 5 essential steps with a strategic and an operative management. During these operational activities, the scorecard serves as an automated selection tool and it can be supplemented with a detailed due diligence. The first two process steps covers the investment policy statement (IPS) and the strategic asset allocation (SAA). It includes also the primary investment classification and the main performance verification in order to assemble a risk-weighted investment portfolio. Afterwards, the quarterly adjustments and decisions for new in- or divestments take place. Also, the control loop process with fine-tuned risk allocation and known risks as per scorecard is performed. The following step consist of the underlying analysis for scorecard selection and monitoring as well as for reporting. Finally, portfolio as well as overall fund reporting is conducted.
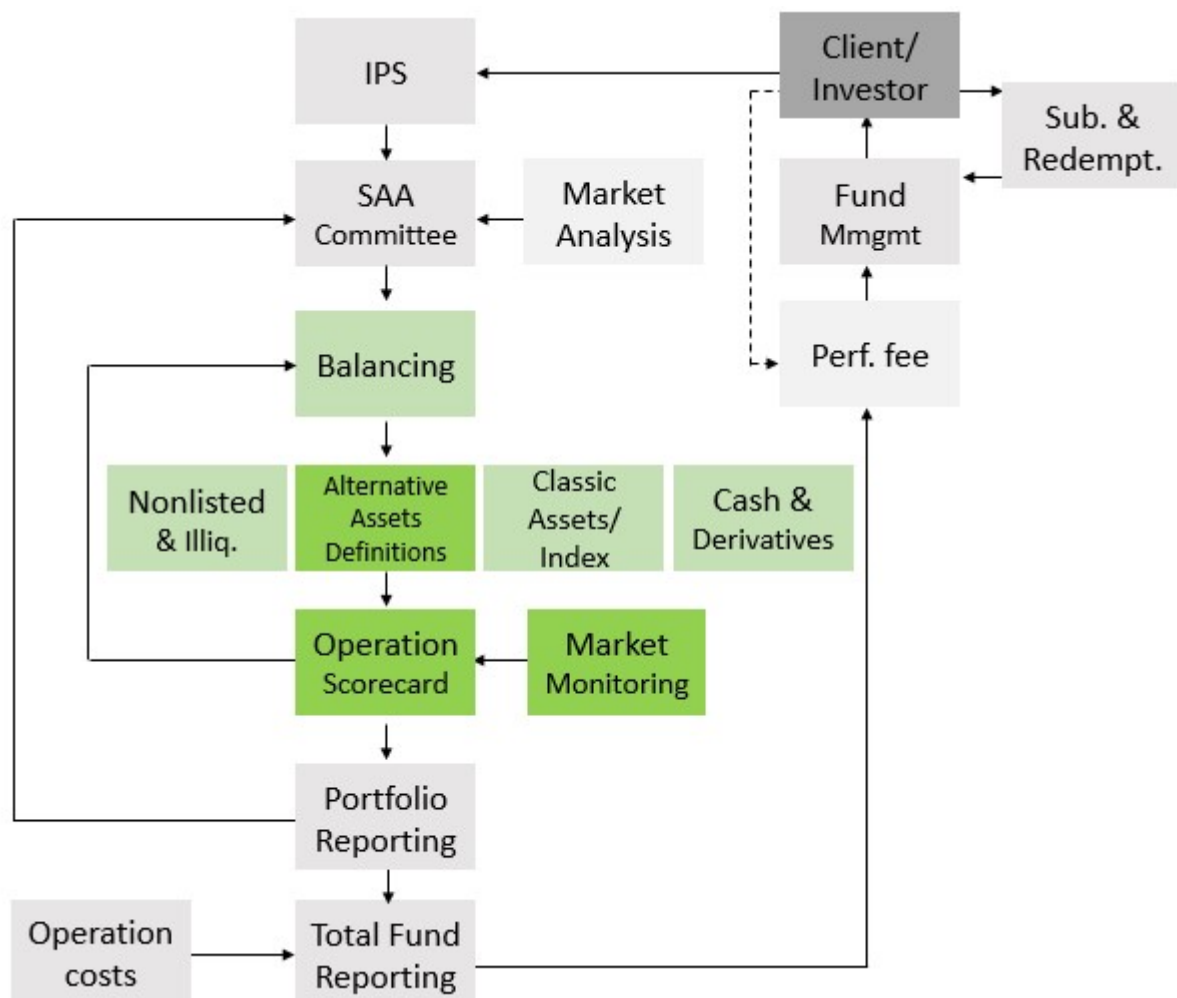
3 Scorecard concept

The scorecard system methodology incorporates both quantitative and qualitative factors in evaluating fund managers and their investment strategies. The system is built around pass/fail criteria, on a total scale of 0 to 10. It's capable to process classic active and asset allocation strategies. The time periods for classic active strategies and classic passive strategies are 5 and 3 years. There are 8 equally weighted quantitative factors, covering 80% of the fund's score. Those factors incorporate modern portfolio theory statistics, quadratic optimization analysis, peer group rankings and style analysis. The 2 style factors rank the asset size as well as the type of investment income and monitors style consistency. The other 20% of the score is covered by 2 qualitative factors, taking into account manager tenure, the fund's expense ratio, the fund's statistical significance and other management issues. All detailed factors and it's score criterias are listed in the Annex. The following example shows the five steps to conclude with a score for an investment decision. The decision guidelines are shown in the ranking points table.

1) Classification of investment with Peer groups and Benchmarks as per investment base

2) Factor calculation and collection of factor tables

Active Strategies	Style			Risk/ Return			Peer Group		Qual.	
	Style	Style Drift	R^2	Risk/ Return	Up/ Down	Info Ratio	Return Rank	IR Rank	(2pt max)	
Global Equity										
AIM Global Small & Mid Cap Growth A	71,0	54,2	29,8	91,3	105,4	- 0,4	94,5	97,5	2	
Core Fixed Income										
PIMCO TR A	97,3	34,8	26,9	133,7	123,8	- 0,1	40,5	60,5	1	
Core Real Estate (REIT)										
First American Rea Estate Secs A	96,2	82,4	12,1	108,9	103,3	0,2	32,0	31,0	2	
Technology										
AIM Technology A	61,5	77,0	9,2	92,9	92,4	0,2	58,0	52,5	0	

3) Definiton of score criterias as per annexed factor list

4) Factor score extraction and collection of score table

Active Strategies	Style			Risk/ Return			Peer Group		Qual.	Tot Score T4	Tot Score T3	Tot Score T2	Tot Score T1
	Style	Style Drift	R2	Risk/ Return	Up/ Down	Info Ratio	Return Rank	IR Rank	(2pt max)				
Global Equity													
AIM Global Small & Mid Cap Growth A	1	1	1	1	1	1	1	1	2	10	10	10	10
Core Fixed Income													
PIMCO TR A	1	1	0	1	1	1	1	1	2	9	8	8	8
Core Real Estate (REIT)													
First American Rea Estate Secs A	1	1	1	1	1	1	1	1	2	10	10	10	10
Technology													
AIM Technology A	1	1	1	0	0	0	0	1	2	4	4	4	3

5) Assignment to ranking points table

Ranking points table	
Classification and consequence	Ranking points
New investments	9 -10
Maintenance of existing investments, might be challenged by new opportunities	7 - 8
Monitoring as potential in- & divestments, are challenged by new opportunities	5 - 6
Divestments	0 - 4

4   Investment base

For these and other studies an overview of real estate investment companies and referencing benchmarks is conducted. The data considered originate from distinctive securities of investment-companies in the Morningstar database. These companies can be public or private with a global or regional real estate portfolio. Private and illiquid investments are unsmoothed and modified to reflect public listing conditions. The considered securities are equity-linked in order to reflect the underlying real estate characteristics. According to this specification and the mentioned styles, the overall groups and their peer lists are mapped afterwards. The matching Benchmarks are provided by MSCI, S&P, NAREIT, Cambridge und Morningstar.

5   Planning

	Project				Total [h]
	M1	M2	M3	M4	
Data acquisition& modelling					80
1st Results&Report	◆				20
Backtesting Scorcard with Database					120
Backtest results			◆		20
Modelling&automation for Monitoring					80
Final report				◆	20
Total [h]	80				340
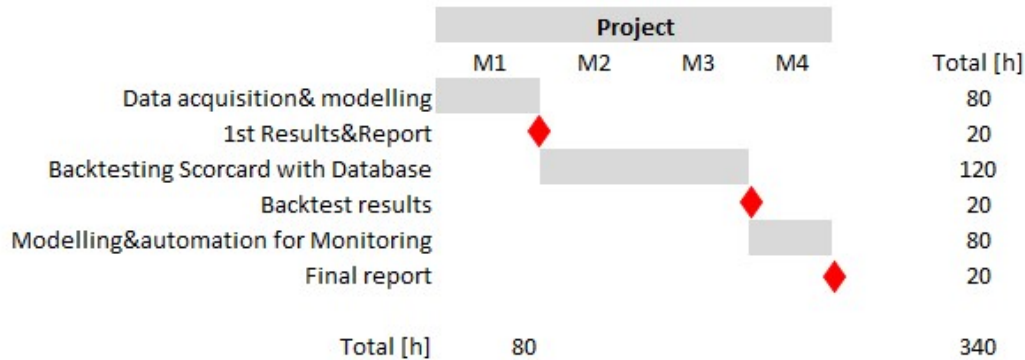
6   Annex

No.	Factor explained	Score Criteria = 1	Factor Group & Weight
1	Style: Style localization by comparing two Style characters with four indexed Style benchmarks	Characteristically return > 50% of two opposing benchmark returns	30% Style
2	Style Drift: rolling window of style analysis data with specific style drift tolerances	Style drift < 20 or 25	
3	R – Squared: The percentage of the fund's 5y return movement explained by the benchmark	R^2 > 80%	
4	Risk/Return: 5y return averages compared with benchmark	> Return or < Risk	30% Performance & Risk
5	Up/ Down Capture: 5y Analysis of monthly return averages compared with benchmark	Up Return > Down Return	
6	Information Ratio: Annualized 5y excess return divided by excess std. dev. benchmark	IR > 0	
7	Peer Group Ranking: rolling 5y median peer group return ranking	Rank > Top 50%	20% Peer Group Ranking
8	Peer group Information Ratio: rolling 5y median peer group excess return divided by excess std. dev. peer group	Rank > Top 50%	

9 - 10	Manager tenure, fund Expenses: Comparison with Morningstar average fees
	Statistical Data: based on style statistics
		Total start score = 2 minus deductions:
		
		Fund expenses
		    Score -2: < 1,5y
		    Score -1: > 1,5y/ < 3,5y
		Fund fees
		    Score -0,5 to -1: >Morningstar
		Statistical Data:
		    Score -1: Style fails and R^2<75%
		    Score -2: Style fails and R^2<60%
		    Score -1: Style pass and R^2<50%
		    Score -0,5: IR pos. and Sig.<65%
			20% Qualitative