

amLeague performance analysis Global Low Carbon mandate

T2 2016

SRI and Low Carbon Active Management by Cedrus AM

Cedrus Asset Management's investment solutions are 100% sustainable and related to the energy transition. They enable investors to get exposed to the **Opportunities** arising from this long-term trend by investing in the sectors offering a strong growth) and also to manage the associated **risks** (carbon risk, stranded assets...)

Opportunities

Cedrus Sustainable Megatrends is a global equity mutual fund investing on 3 major axis of sustainable development:

- Energy Transition,
- Natural Resources Management,
- Human Development.

Risks

Based on a partnership with MSCI ESG, this cutting-edge solution has been initiated by the civil servants' supplementary retirement fund (RAFP), one of the first French pension funds (AUM of €23 billion). Thanks to our partner, the amLeague platform, asset managers are competing on the 'paper' management (live but without real money invested) of a low carbon portfolio on a same-level playing field. The platform delivers a total and daily transparency on performance, risk, and carbon aggregates calculated by MSCI ESG. Depending on the requirements of each investor, Cedrus AM can then select the most relevant asset-managers and replicate the consolidated portfolio by investing directly in equities.



Global Low Carbon: the amLeague-Cedrus AM mandate

amLeague is an online trading platform which allows asset managers to place orders on notional portfolios. The trading conditions and the guidelines are the same for all asset managers in order to compare the achievements of each participant.

Launched on the amLeague platform, the Global Low Carbon mandate is the first observatory of financial performance and carbon footprint reduction on active portfolio management. Based on a partnership with MSCI ESG, this cutting-edge solution has been initiated by the civil servants' supplementary retirement fund (RAFP), one of the first French pension funds (AUM of €23 billion). The platform delivers a total and daily transparency performances, risks, and carbons aggregates calculated by MSCI ESG. We selected the Carbon Intensity metric (Emission / MEUR market capitalization), Carbon Emissions (Emissions / MEUR turnover) and an overall score of Carbon Risk Management (carbon business strategy and climate). The first metric focuses on the level of emissions which the investor may be held liable as a shareholder, the second on the carbon intensity of the funded activities.

Cedrus AM led the development of the guidelines of the mandate and the working group for the operational implementation of the mandate. Depending on the requirements of each investor, Cedrus AM can then select the asset-managers to suit every need and then replicate the consolidated portfolio, directly in equities.

Global Low Carbon: overall presentation of the mandate

- Implemented by Cedrus AM on the amLeague platform and initiated by the RAFP
- Launched on December the 15th of 2015
- There are 25 participants on the mandate, such as: Allianz, AXA IM, BNY Mellon, Deutsch AM, HSBC, Invesco, Pioneer, RBC, UBS, etc...
- Specific management guidelines for the mandate: number of portfolio securities, minimum assets, exposure, sector deviations, etc...
- A fair competition with real trading conditions and 100% comparable performances

Global results overview (period: 31/12/15-30/06/16)

All results are derived from the amLeague platform. The platform publicly allows to combine financial results (performances, risks) to extra-financial characteristics (carbon emission, ESG rating, carbon scoring) for every portfolio.

Consequently, each asset management companies' results, on every metrics, can be analyzed dynamically. Depending on the requirements/constraints for each investor, financial indicators can be combined with extra-financial data.



Société de Gestion		Gérant	Low Carbon				ESG	Financial Performance			
			Risk Mgmt	Emissions / MEUR turnover	Emissions / MEUR turnover adj (*)	Emissions / MEUR mkt cap	Emissions / MEUR mkt cap adj (*)	ESG	YTD ↓	Volatilité	Tracking Error
Roche-Roune Global Low Carbon		S. Fraenkel, M. Fouilloux	5,82	175,15	203,03	204,82	230,3	5,72	-2,13%	20,49	3,97
THEAM DEFI Decarb50		Team managed	5,34	89,05	79,74	88,98	114,1	5,67	-3,08%	19,87	3,80
AXA IM Global SmartBeta Equity ESG Low Carbon		Team managed	5,90	82,57	86,90	57,38	71,33	6,02	-2,98%	18,80	3,61
OFL Global Low Carbon ISR		S. Youmbi	5,63	40,03	39,60	34,33	36,54	6,43	-2,98%	19,52	2,58
Invesco Global Low Carbon		M. Kolrep, M. Von Dierfurth	4,60	203,15	220,63	243,61	254,97	5,61	-3,24%	18,38	5,56
EDR Global Equities Low Carbon		M. Halperin, C. Mouillot, L. Vauthier	5,45	48,98	54,58	49,07	56,51	5,81	-3,82%	20,24	5,20
THEAM Index Decarb50		Team managed	5,41	123,04	137,17	110,40	127,16	5,68	-3,94%	19,67	1,23
Pioneer Global Low Carbon Equity		I. O'Reilly, C. Zimmermann	5,51	56,77	66,70	69,98	82,86	7,54	-4,72%	20,19	3,46
HSBC Global Low Carbon		B. Hubbard	5,36	45,97	57,98	58,74	89,91	6,10	-4,78%	19,98	3,38
MCM Carbon Efficiency Strategy		K. Wong	5,67	100,88	113,24	105,04	116,23	5,41	-4,94%	19,95	0,47
Inpax Smart Carbon		Team Managed	5,41	216,68	220,14	214,79	219,71	5,47	-4,99%	20,46	0,80
MSCI WORLD in EUR			4,70	301,03	301,03	445,19	445,19	5,27	-5,01%	20,14	n.d.
MOYENNE			5,48	100,00	110,30	104,19	117,40	5,99	-6,09%	20,72	3,98
Federal & Fourpoints		Team managed	5,29	130,77	145,71	112,09	127,08	5,76	-6,17%	20,52	2,67
NN Investment Partners Global Low Carbon Equity		H. Boer	5,24	111,22	113,21	79,84	82,34	5,37	-6,40%	20,37	3,50
ECOFI GLOBAL LOW CARBON		Team managed	5,56	117,90	109,08	131,29	149,70	6,62	-5,41%	22,29	7,73
Alliance Trust Investments		S. Clements, S. Porteous	5,03	73,87	97,56	66,71	83,28	5,74	-6,48%	22,13	4,61
AllianzGI Global Sustainability		P. Schofield, J. Kent	5,94	62,29	62,59	45,83	52,49	6,63	-5,53%	21,48	3,71
Deutsche AWM		S. Penamubia, S. Werner	5,93	87,64	87,36	136,69	137,80	6,81	-6,51%	22,42	7,70
La Française Inflection Point Global Low Carbon		A. Mahler, A. Fondk	6,08	59,31	67,30	42,84	46,79	6,87	-6,13%	21,84	3,74
RBC Global Equities - Fonds d'Avenir		Team managed	5,15	100,81	104,88	48,15	53,95	5,22	-6,23%	20,69	4,82
Wells Fargo MWCM Global Intrinsic Equity Low Carbon		J. Nadal, B. O'Sullivan	5,85	139,40	198,41	109,85	123,26	6,08	-6,47%	21,39	3,77
J. Safra Sarasin Sustainable Low Carbon		A. Hoffman	5,47	115,35	104,94	228,51	224,63	6,42	-6,83%	20,52	4,67
UBS Global Sustainable Low Carbon Equity Portfolio		Team Managed	5,29	69,55	88,35	84,82	120,72	5,18	-8,42%	21,60	4,06
SLI Global Equity Low Carbon Portfolio		M. Monagh, D. Byrne	5,11	110,59	122,21	91,23	111,13	5,47	-8,34%	23,79	6,39

Risks and returns overview (period: 31/12/15-30/06/16)

Fund manager \ Indicator	2016	Global Alpha	Sharpe ratio**	-ret/max dd	max dd	std dev	max dd (rel. Return)	TE	IR	Beta	Beta bull	Beta bear	Hit ratio	Hit ratio bull	Hit ratio bear
AXA IM Global SmartBeta Equity ESG Low Carbon	1,0%	2,4%	N.A	0,08	-12,4%	16,0%	-1,8%	3,3%	1,55	0,87	0,83	0,85	50%	33%	67%
THEAM Index Decarb50	-0,5%	1,0%	N.A	-0,03	-14,7%	17,0%	-0,3%	1,1%	1,89	0,98	0,91	0,89	59%	46%	72%
Invesco Global Low Carbon	-0,7%	0,7%	N.A	-0,05	-14,0%	16,2%	-1,4%	5,1%	0,33	0,92	0,89	0,91	55%	41%	70%
Federal & Fourpoints	-0,9%	0,7%	N.A	-0,06	-15,2%	17,8%	-1,6%	2,7%	0,51	0,97	0,81	0,99	58%	57%	59%
OFI Global Low Carbon ISR	-0,9%	0,6%	N.A	-0,07	-14,2%	16,6%	-1,7%	2,5%	0,50	0,98	0,87	0,93	50%	40%	61%
EDR Global Equities Low Carbon	-1,1%	0,4%	N.A	-0,08	-13,2%	17,8%	-3,3%	4,7%	0,20	0,95	0,81	0,89	48%	43%	55%
THEAM DEFI Decarb50	-1,1%	0,4%	N.A	-0,08	-14,3%	17,3%	-2,6%	3,7%	0,23	0,97	0,82	0,85	50%	40%	61%
MSCI World in EUR	-1,6%		N.A	-0,10	-15,3%	17,4%									
Impax Smart Carbon	-1,7%	-0,1%	N.A	-0,11	-15,2%	17,2%	-0,3%	0,7%	-0,33	0,99	0,92	0,91	52%	30%	73%
AllianzGI Global Sustainability	-1,9%	-0,3%	N.A	-0,13	-15,1%	19,1%	-2,0%	4,0%	-0,17	1,03	0,93	0,94	53%	57%	50%
MCM Carbon Efficiency Strategy	-1,9%	-0,4%	N.A	-0,13	-15,3%	17,3%	-0,6%	0,4%	-1,68	0,99	0,92	0,91	45%	38%	53%
NN Investment Partners Global Low Carbon Equity	-2,5%	-1,1%	N.A	-0,17	-15,3%	17,5%	-2,8%	3,3%	-0,57	0,94	0,75	0,93	48%	41%	56%
Mandate average	-3,0%	-1,4%	N.A	-0,18	-15,6%	18,5%	-3,2%	4,2%	-0,47	1,01	0,92	0,91	50%	49%	52%
RBC Global Equities - Fonds dAvenir	-3,0%	-1,4%	N.A	-0,19	-16,0%	18,5%	-3,9%	4,4%	-0,64	1,04	0,79	0,90	54%	57%	52%
Roche-Brune Global Low Carbon	-3,1%	-1,4%	N.A	-0,20	-15,5%	19,3%	-5,1%	5,6%	-0,53	1,05	0,98	0,77	56%	62%	52%
J. Safra Sarasin Sustainable Low Carbon	-3,4%	-1,8%	N.A	-0,21	-16,3%	18,4%	-2,7%	4,6%	-0,78	1,03	0,90	0,92	50%	51%	50%
HSBC Global Low Carbon	-3,7%	-2,2%	N.A	-0,24	-15,3%	17,8%	-3,6%	3,3%	-1,23	0,95	0,92	0,90	48%	46%	52%
Alliance Trust Investments	-3,8%	-2,1%	N.A	-0,24	-15,9%	19,9%	-2,9%	4,9%	-0,87	1,07	1,00	0,95	48%	57%	41%
ECOFI GLOBAL LOW CARBON	-4,2%	-2,5%	N.A	-0,25	-16,4%	21,1%	-4,0%	8,3%	-0,60	1,06	1,06	0,89	48%	49%	47%
La Française Inflection Point Global Low Carbon	-4,5%	-2,7%	N.A	-0,25	-17,7%	20,2%	-4,0%	4,9%	-1,15	1,12	1,01	1,00	50%	62%	39%
Wells Fargo MWCM Global Intrinsic Equity Low Carbon	-4,7%	-3,1%	N.A	-0,28	-16,9%	19,3%	-3,4%	4,0%	-1,51	1,06	1,06	0,87	48%	59%	38%
UBS Global Sustainable Low Carbon Equity Portfolio	-5,4%	-3,6%	N.A	-0,28	-19,5%	19,3%	-4,9%	4,4%	-1,68	1,15	1,12	0,97	47%	59%	36%
Deutsche AWM	-5,6%	-4,0%	N.A	-0,36	-15,7%	21,2%	-5,9%	8,1%	-0,94	1,00	1,04	0,86	42%	49%	36%
Pioneer Global Low Carbon Equity	-5,9%	-4,3%	N.A	-0,40	-14,8%	19,3%	-6,0%	5,9%	-1,40	0,98	0,81	0,76	46%	43%	50%
SLI Global Equity Low Carbon Portfolio	-9,1%	-7,3%	N.A	-0,45	-20,2%	21,9%	-8,4%	7,0%	-2,02	1,14	1,06	1,06	47%	67%	28%

* Global alpha = fund manager return - Beta * MSCI World return
** Sharpe ratios are negative for the considered period

Performances analysis

6 months after the beginning of the mandate, results dispersion still increase. In the 2016 volatile equity market, only 6 fund managers beat the MSCI World on a year to date basis. These managers generally have a defensive equity beta and produced the large part of their outperformance in bear markets, missing some part of the rebound (11 February 2016). In this context, 2 fund managers take the lead: AXA IM Global SmartBeta Equity ESG Low Carbon (global alpha: 2.4% / information ratio: 1.55) and Theam Index Decarb50 (global alpha: 1% / information ratio of 1.89 thanks to one of the lowest TE of the mandate: 1.1%). Regarding these results, we use to dissociate the performance coming from the market (equity beta) and the one from others sources (such as alternative betas and real alpha). In order to capture these sources, we recall the formula of our proprietary indicator named “global alpha” below. This indicator is easy to read and understand and make no assumptions (contrary to the well know CAPM model):

$$global\ alpha = fund\ manager\ return - Beta * benchmark\ return$$

Performances analysis in various markets

Fund managers selection could not be realized without taking into account different markets phases (i.e bull, bear, trading range). At Cedrus AM, we focus on the way fund managers perform on a relative basis during these phases, in order to pick the best fund managers, according to our tactical short term views. For instance, in a bear market, we use to select (all else equals) defensive funds (with an anticipated global alpha as large as possible). We extend this method to the amLeague Low Carbon mandate.

In order to “simplify” the analysis, we focus on 3 markets phases: “bear” (31/12/15=>11/02/16), “bull” (11/02/16=>30/06/15) and “trading range” (31/12/15=>30/06/16).

Market phase	Bear	Bull	Trading range
Start date	*31 Dec 15	*11 Feb 16	*31 Dec 15
End date	*11 Feb 16	*30 Jun 16	*30 Jun 16
AXA IM Global SmartBeta Equity ESG Low Carbon	2,9%	-0,8%	2,6%
EDR Global Equities Low Carbon	2,1%	-2,2%	0,5%
Invesco Global Low Carbon	1,3%	-0,7%	0,9%
OFI Global Low Carbon ISR	1,1%	-0,7%	0,6%
THEAM DEFI Decarb50	1,0%	-0,8%	0,4%
THEAM Index Decarb50	0,6%	0,4%	1,1%
Pioneer Global Low Carbon Equity	0,5%	-5,7%	-4,3%
AllianzGI Global Sustainability	0,2%	-0,6%	-0,3%
Federal & Fourpoints	0,1%	0,7%	0,7%
Impax Smart Carbon	0,1%	-0,3%	-0,1%
MCM Carbon Efficiency Strategy	0,0%	-0,4%	-0,4%
NN Investment Partners Global Low Carbon Equity	0,0%	-1,1%	-1,0%
HSBC Global Low Carbon	0,0%	-2,5%	-2,1%
Roche-Brune Global Low Carbon	-0,2%	-1,5%	-1,5%
Mandate average	-0,3%	-1,2%	-1,4%
Deutsche AWM	-0,5%	-4,1%	-4,0%
Alliance Trust Investments	-0,7%	-1,7%	-2,2%
RBC Global Equities - Fonds d'Avenir	-0,8%	-0,7%	-1,5%
J. Safra Sarasin Sustainable Low Carbon	-1,0%	-0,8%	-1,9%
ECOFI GLOBAL LOW CARBON	-1,1%	-1,6%	-2,6%
Wells Fargo MWCM Global Intrinsic Equity Low Carbon	-1,6%	-1,5%	-3,2%
La Française Inflection Point Global Low Carbon	-2,4%	-0,1%	-2,9%
UBS Global Sustainable Low Carbon Equity Portfolio	-4,3%	1,4%	-3,8%
SLI Global Equity Low Carbon Portfolio	-5,0%	-2,2%	-7,5%

In bear (bull) markets, it seems that it is easier (harder) to beat the index

What we can say about these results:

- Fund managers tend to beat more easily the MSCI World during bear markets (13 fund managers) compare to bull markets (only 3 fund managers)
- Average outperformance is better in bear markets (-0.35%) compare to bull markets (-1.23%)
- These informations confirm empirical work and research papers: fund managers generally lag their benchmarks on bull markets
- Finally, we notice regarding to the 2 best fund managers, that on the one hand AXA IM Global SmartBeta Equity ESG Low Carbon has realized the whole part of its outperformance (+290bps) in bear markets (underperforming on bull markets: -80bps). On the other hand, the relative performance of Theam Index Decarb50 has been more regular (+60bps in bear markets, +40bps in bull markets)

On the importance of diversification

It is now well known that the MSCI World is a really hard to beat efficient index, especially over time. In this context, picking only one fund manager will make no sense as it will clearly decrease the odds to beat the index on a regular basis. Rather, selecting an index or even a tracker will make more sense in this case (i.e if the fund manager selector has no skill regarding international equity fund manager selection, he would be statistically better off choosing a passive investment vehicle rather than an active one). However, it is also commonly understood that relative performance analysis is probably the most important key factor of success in fund selection. Regarding ways of selecting fund manager, some argue that only market beta states the relative performance potential in bull/bear markets. Others think that the analysis should go deep further, mixing market beta, alternatives betas and real alpha (true stock selection skill) risk return sources.

Without re-opening the boundless debate regarding the origin of the out/under performance, we try to concentrate our analysis on simple things, easy to understand by anyone. We know by the way that it is also well accepted in the

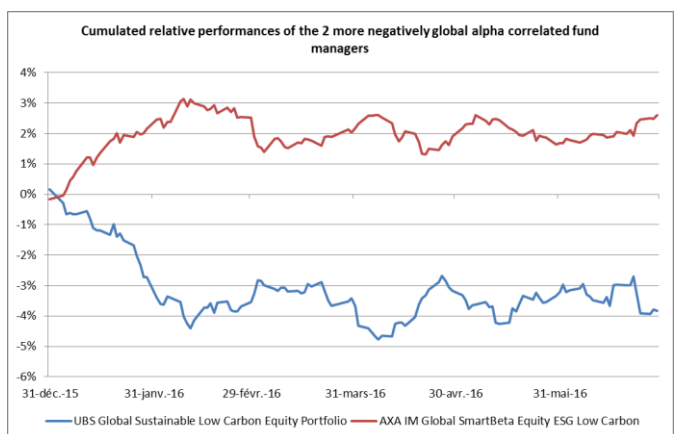
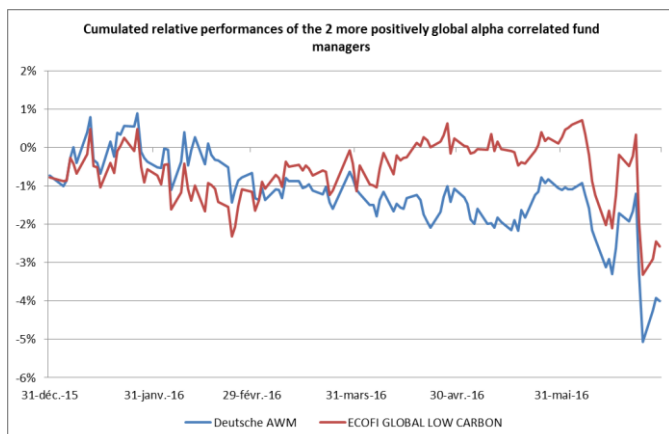
investment community that diversification, applied on a stock portfolio or a fund of funds, is one of the most important key factor of success. So what we do here is trying to estimate the diversification potential, that is, are fund managers ways of managing similar or different (i.e diversification potential enabled)? In order to detect it, we first plot the global alphas correlation matrix (as we had done in the first newsletter)

Global alphas correlation matrix		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	
A	MCM Carbon Efficiency Strategy																							
B	Wells Fargo MWCM Global Intrinsic Equity Low Carbon	0,30																						
C	Deutsche AWM	0,26	0,65																					
D	AllianzGI Global Sustainability	0,33	0,49	0,76																				
E	Roche-Brune Global Low Carbon	0,20	0,55	0,63	0,47																			
F	HSBC Global Low Carbon	0,40	0,42	0,61	0,53	0,39																		
G	ECOFI GLOBAL LOW CARBON	0,22	0,66	0,88	0,64	0,59	0,59																	
H	La Française Inflection Point Global Low Carbon	0,22	0,51	0,69	0,58	0,61	0,52	0,71																
I	SLI Global Equity Low Carbon Portfolio	0,26	0,42	0,70	0,57	0,61	0,50	0,63	0,68															
J	RBC Global Equities - Fonds d'Avenir	0,26	0,07	0,42	0,46	0,15	0,46	0,35	0,39	0,41														
K	Alliance Trust Investments	0,28	0,19	0,59	0,58	0,45	0,58	0,53	0,55	0,65	0,52													
L	EDR Global Equities Low Carbon	0,27	0,19	0,58	0,59	0,19	0,59	0,51	0,29	0,35	0,62	0,55												
M	THEAM DEF1 Decarb50	0,29	0,05	0,27	0,29	0,34	0,34	0,15	0,15	0,35	0,43	0,46	0,53											
N	Impax Smart Carbon	0,68	0,37	0,34	0,37	0,18	0,56	0,41	0,27	0,26	0,39	0,44	0,49	0,26										
O	AXA IM Global SmartBeta Equity ESG Low Carbon	0,33	0,20	0,40	0,49	0,08	0,41	0,20	0,00	0,11	0,38	0,28	0,67	0,58	0,36									
P	THEAM Index Decarb50	0,58	0,38	0,45	0,34	0,52	0,49	0,47	0,41	0,42	0,25	0,51	0,30	0,38	0,61	0,24								
Q	NN Investment Partners Global Low Carbon Equity	0,32	-0,08	0,29	0,35	0,08	0,39	0,18	0,10	0,24	0,52	0,44	0,65	0,56	0,29	0,57	0,26							
R	Invesco Global Low Carbon	-0,06	0,27	0,38	0,21	0,37	0,44	0,51	0,39	0,30	0,47	0,50	0,29	0,17	0,29	-0,01	0,44	0,08						
S	Federal & Fourpoints	0,35	0,04	0,37	0,40	0,21	0,35	0,30	0,32	0,39	0,47	0,50	0,51	0,43	0,32	0,43	0,61	0,09						
T	Pioneer Global Low Carbon Equity	0,30	0,33	0,62	0,64	0,56	0,59	0,56	0,68	0,55	0,49	0,60	0,49	0,41	0,39	0,28	0,49	0,35	0,42	0,48				
U	UBS Global Sustainable Low Carbon Equity Portfolio	-0,12	0,30	0,13	-0,08	0,39	0,06	0,17	0,33	0,16	-0,12	0,04	-0,25	-0,22	-0,07	-0,40	0,08	-0,28	0,14	-0,14	0,02			
V	J. Safra Sarasin Sustainable Low Carbon	0,17	0,49	0,70	0,60	0,51	0,53	0,68	0,53	0,53	0,47	0,52	0,62	0,36	0,36	0,47	0,33	0,36	0,33	0,31	0,51	0,14		
W	OFI Global Low Carbon ISR	0,18	0,06	0,17	0,21	0,08	0,21	0,18	0,12	0,13	0,27	0,26	0,39	0,39	0,34	0,35	0,14	0,33	0,29	0,09	0,12	-0,13	0,30	

On average, global alphas are modestly correlated: 0,36. There is a clear diversification potential

Compare to the Q1 newsletter

- Average correlation is almost the same (from 0.32 to 0.36)
- This confirm the diversification potential
- It is then interesting to compare the 2 more positively (negatively) correlated fund managers on a global alpha basis: in the former case, the fund managers are Deutsche AWM and Ecofi Global Low Carbon (+0.88). In the latter case, AXA IM Global SmartBeta Equity ESG Low Carbon and UBS Global Sustainable Low Carbon Equity Portfolio (-0.40). We plot the cumulated relative performances of all of them:



Building a fund managers portfolio imply taking into account global alphas correlations

If we now focus our attention on correlations changes (full period value – T1 value), we notice that:

- Average correlations changes is close to zero (i.e fund managers “styles” has remained stable on average)
- 2 fund managers are not following this trend: Pioneer Global Low Carbon Equity and UBS Global Sustainable Low Carbon Equity Portfolio. We report below their correlations changes:

		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	U	V	W	Average
T	Pioneer Global Low Carbon Equity	-0,06	0,36	0,86	0,32	0,54	0,54	0,30	0,64	0,66	0,52	0,81	0,58	0,25	0,60	0,09	0,67	0,29	0,50	0,67	0,02	0,42	-0,06	0,43
U	UBS Global Sustainable Low Carbon Equity Portfolio	-0,43	-0,34	-0,37	-0,40	-0,10	-0,56	-0,29	-0,06	-0,39	-0,66	-0,68	-0,73	-0,60	-0,75	-0,65	-0,38	-0,51	-0,20	-0,72	0,02	-0,40	-0,30	-0,43
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Are fund managers styles stable over time?

- It seems that over the full period, Pioneer Global Low Carbon Equity has become progressively more correlated to other fund managers (average correlation change: +0.43), whereas we observe the opposite regarding UBS Global Sustainable Low Carbon (average correlation change: -0.43)
- How can we explain these results? There is no perfect answer. It could be explained by a major change in the fund manager strategy, a high turnover or even a buy and hold fund manager (holding her/his position while the others regularly updating their portfolios) for instance. In all cases, the analysis deserve to be improved, on one hand through a qualitative approach (speaking with the fund manager) and on the other hand, using more powerful statistical tools such as holdings and regression based analysis in order to identify for instance, fund managers exposures to well-known alternative equity risk premia such as value, quality, momentum or even low volatility (among others)

Extra-financial indicators analysis (period: 31/12/15-30/06/16)

For this second newsletter, we continue to focus on pure carbon and environmental metrics. As it was the case in our first newsletter, we build zscores in order to make the data comparable among fund managers:

$$relative\ estimated\ zscore(t) = \frac{metric\ value(t) - metric\ average(t)}{metric\ standard\ deviation(t)}$$

By the way, we build 4 others zscores :

- « **Cedrus pure Carbon** » : 1/3 relative zscore « Low Carbon Risk Management » + 2/3 relative zscore « Low Carbon Emissions » (composed of 4 equiweighted relative zscores based on millions euros emissions)
- « **Cedrus pure Environment** » : 1/2 relative zscore « ESG E » + 1/4 relative zscore «ESG Water stress » + 1/4 relative zscore « ESG Toxic Emissions »
- « **Zscores average Cedrus** » : average of the above 2 zscores
- « **Zscores average (except Cedrus)** » : average of all the zscores (all the extra-financials) except the above Cedrus zscores

We plot the results below:

We notice the high dispersion among the mandate in terms of extra-financial metrics

Fund manager \ Indicator	Environment	Social	Governance	Water Stress	Toxic Emissions	Carbon Risk Mgmt	Emissions MEUR turnover	Emissions MEUR turnover adj	Emissions MEUR mkt cap	Emissions MEUR mkt cap adj	Labor Mgmt	Health Safety	Business Ethics	Cedrus pure Carbon	Cedrus pure Environment	Zscores average Cedrus	Zscores averages (except Cedrus)
AllianzGI Global Sustainability	1,6	0,6	0,7	1,7	1,2	1,4	0,8	0,8	0,8	0,9	-1,1	1,4	-1,2	1,0	1,5	1,3	0,7
La Française Inflection Point Global Low Carbon	1,8	1,7	0,2	1,0	1,1	1,6	0,7	0,7	0,7	0,8	0,4	0,7	0,4	1,0	1,4	1,2	0,9
Pioneer Global Low Carbon Equity	0,9	2,8	1,8	-0,1	2,2	0,5	0,9	0,9	0,6	0,6	2,7	1,2	0,5	0,7	1,0	0,8	1,2
Deutsche AWM	1,3	0,7	1,1	0,9	-0,4	1,2	0,3	0,5	-0,2	0,0	-0,9	0,0	-0,6	0,5	0,8	0,6	0,3
AXA IM Global SmartBeta Equity ESG Low Carbon	0,1	-0,4	-0,3	1,0	0,7	1,2	0,4	0,4	0,7	0,6	-0,6	0,0	-0,2	0,8	0,5	0,6	0,3
EDR Global Equities Low Carbon	0,7	-0,6	-0,8	0,3	0,5	0,1	0,9	1,0	0,7	0,8	-1,4	0,2	0,4	0,6	0,6	0,6	0,2
OFI Global Low Carbon ISR	-0,1	0,7	-0,2	-0,1	1,1	0,2	1,1	1,2	0,9	1,0	1,4	0,1	-0,2	0,8	0,2	0,5	0,5
ECOFI GLOBAL LOW CARBON	0,5	1,8	0,7	2,0	-0,8	0,4	-0,2	0,0	-0,3	-0,4	-0,1	1,8	0,0	0,0	0,6	0,3	0,4
HSBC Global Low Carbon	0,2	0,4	-0,1	-0,5	0,5	-0,2	0,9	0,9	0,6	0,5	-1,1	1,6	-0,7	0,4	0,1	0,3	0,2
Wells Fargo MWCM Global Intrinsic Equity Low C	0,2	-0,4	-0,1	0,3	0,5	0,9	-0,5	-1,2	0,2	0,2	-1,1	-0,8	-1,2	0,1	0,3	0,2	-0,2
J. Safra Sarasin Sustainable Low Carbon	0,7	0,5	1,5	0,4	0,8	0,0	0,2	0,3	-0,8	-1,1	0,2	0,1	1,3	-0,2	0,6	0,2	0,3
UBS Global Sustainable Low Carbon Equity Portfo	-0,1	-0,4	-1,9	-0,1	0,1	-0,5	0,7	0,6	0,5	0,3	-0,2	-0,1	-1,0	0,2	0,0	0,1	-0,2
Alliance Trust Investments	0,6	-0,7	0,2	-0,4	-0,2	-1,0	0,6	0,4	0,6	0,4	-0,5	0,4	0,1	0,0	0,1	0,1	0,0
MCM Carbon Efficiency Strategy	-0,3	-0,8	-1,7	0,2	-0,4	0,5	0,1	0,1	0,1	0,2	-0,2	-0,4	-1,5	0,2	-0,2	0,0	-0,3
THEAM Index Decarb50	-0,3	-0,4	-0,7	0,1	-0,2	-0,1	-0,2	-0,3	0,1	0,0	0,4	-0,1	-0,1	-0,1	-0,2	-0,1	-0,1
THEAM DEFI Decarb50	0,0	-0,6	0,8	-1,1	-0,4	-0,5	0,5	0,6	0,2	0,0	-0,2	-0,7	1,7	0,1	-0,4	-0,2	0,0
NN Investment Partners Global Low Carbon Equit	-0,6	-0,8	0,9	0,3	-0,6	-0,2	-0,1	-0,1	0,4	0,4	1,0	0,3	-0,2	0,0	-0,3	-0,2	0,1
Federal & Fourpoints	0,1	-0,5	-0,2	-0,3	-0,4	-0,2	-0,4	-0,5	0,0	0,1	0,2	-1,3	0,8	-0,2	-0,1	-0,2	-0,2
Roche-Brune Global Low Carbon	-0,7	-0,5	0,3	0,2	0,8	0,7	-0,7	-0,6	-1,1	-1,0	-0,6	0,4	0,5	-0,3	-0,1	-0,2	-0,2
RBC Global Equities - Fonds dAvenir	-1,1	-1,3	-1,0	-0,6	-1,7	-0,6	0,1	0,1	0,7	0,8	0,1	-1,0	0,8	0,1	-1,1	-0,5	-0,3
Impax Smart Carbon	-0,5	-0,6	-1,4	-0,1	-0,8	-0,1	-1,7	-1,7	-1,0	-1,0	-0,7	-0,6	-1,4	-0,9	-0,5	-0,7	-0,9
SLI Global Equity Low Carbon Portfolio	-1,6	-0,5	0,1	-1,6	-0,8	-1,1	-0,1	-0,2	0,2	0,1	0,0	-0,9	-1,1	-0,4	-1,4	-0,9	-0,6
Invesco Global Low Carbon	-1,4	-0,3	1,0	-1,4	-0,7	-2,4	-1,1	-1,1	-0,8	-0,7	1,5	0,1	1,6	-1,4	-1,2	-1,3	-0,4
MSCI WORLD in EUR	-2,2	-0,5	-0,8	-2,3	-2,1	-1,9	-3,2	-2,9	-3,6	-3,6	0,6	-2,4	1,1	-2,9	-2,2	-2,5	-1,8

Regarding these results:

- First, almost all fund managers have better extra-financial metrics compared to the MSCI World (especially those linked to carbon emissions). For outperforming fund managers, we can say as a consequence (all else equals) that it is possible to outperform in a more responsible way
- Second, we notice that half of the fund managers seem to allocate a lot of importance to carbon metrics (i.e compare to others fund managers, they tend to favor more carbon emissions reduction)
- Third, only some fund managers achieve good results in both ESG and carbon indicators
- Eventually, the best fund manager overall achieve good results (AXA IM Global SmartBeta Equity ESG Low Carbon). For the second best (Theam Index Decarb50), it is less clear. For the latter, we may probably explain this contrasted results between financial and extra-financials indicators by a lower TE (1%). As a matter of fact, if on the financial performance side, the outperformance had been regular, one can say that it is has been followed by a trade-off relatively to the extra financial side

These results bring the following issue: where should we put the “cursor” between financials and extra-financials claims? If the final answer is an investor related issue, we notice that beating the MSCI World index with better extra-financial indicators seems to be a realistic option, at least on the short term. On the long term, a dynamic allocation between these fund managers will be necessary in order to create steady outperformance, both on the financial and on the extra-financial side. This conclusion brings the link with or previous discussion regarding the importance of diversification.

Annexes

1) About the amLeague-Cedrus AM Global Low Carbon mandate

A fair competition: amLeague is an online trading platform that allows asset managers to place orders on their notional portfolios, where investment guidelines have been previously defined by the civil servants' supplementary retirement fund (RAFP), one of the first French pension funds (AUM of €23 billion). The objective is to give to asset managers the opportunity to demonstrate their ability to generate added value compared to the benchmark, while providing a valuable source of data to institutional investors trying to refine their process selection.

Real trading conditions: following the guidelines of the mandates, the orders' execution prices are calculated by our ITG partner with the ACE® fitting algorithm; and the advanced capabilities of the trading platform allow asset managers to manage their portfolio in real conditions.

Performances are a 100% comparable: amLeague oversees the entire process, from the creation of the portfolio to its display on www.am-league.com. As a result, each asset manager is treated the same way, allowing amLeague to avoid all barriers that make the "traditional" performance comparison inaccurate and therefore unusable.

2) About Cedrus AM

Cedrus AM is an entrepreneurial Asset Management company specializing in the active selection and allocation of funds. SRI and sustainable management specialist, Cedrus AM is guided by strong principles of sustainability / responsibility and active management. Directed by Benoit Magnier and composed of 6 experienced professionals, Cedrus Asset Management advises and manages on behalf of its clients 227 million euros at the end of December 2015. The Cedrus AM offer consists of 4 SRI funds: a flexible Equity fund, a European and International Equity one, an International Equity fund based on sustainable themes: Megatrends and a Credit fund.

We also offer customized management solutions, mandates and dedicated funds, and advise on investment, selection and allocation of funds and on subjects like energetic transition and portfolios' carbon footprint, regarding of the new French law on energetic transition.

Sources

Cedrus AM; amLeague; MSCI ESG.

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Cedrus AM – 22 Rue des Capucines – 75002 Paris – France - +33 1 53 05 57 84 – www.cedrus-am.com

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