GLOBAL VOLATILITY SUMMIT

October 2019 Newsletter

Dear Investor,

The Global Volatility Summit ("GVS") brings together volatility and tail hedge managers, institutional investors, thought-provoking speakers, and other industry experts to discuss the volatility markets and the roles volatility strategies can play in institutional investment portfolios. The GVS aims to keep investors updated on the volatility markets throughout the year, and educated on innovations within the space.

LFIS has provided the latest piece in the GVS newsletter series.

Cheers,
Global Volatility Summit

11th Annual Global Volatility Summit

The 11th Annual Global Volatility Summit is taking place March 10, 2020, in New York City.

Over the past ten years, Global Volatility Summit (GVS) has been the premier annual conference in educating institutional investors on volatility and options trading strategies, and the range of roles they can play in institutional investment portfolios. In addition to annual conferences in the U.S. and Japan, GVS is committed to educating investors throughout the year through research notes and white papers distributed and available on the website.

At the upcoming event in March, global hedge fund managers, industry experts, and institutional investors will share their insights on the evolving volatility markets through a series of presentations and panels. Attendees will hear from peer institutional investors during a panel featuring senior investment professionals from global pensions, endowments, and foundations.

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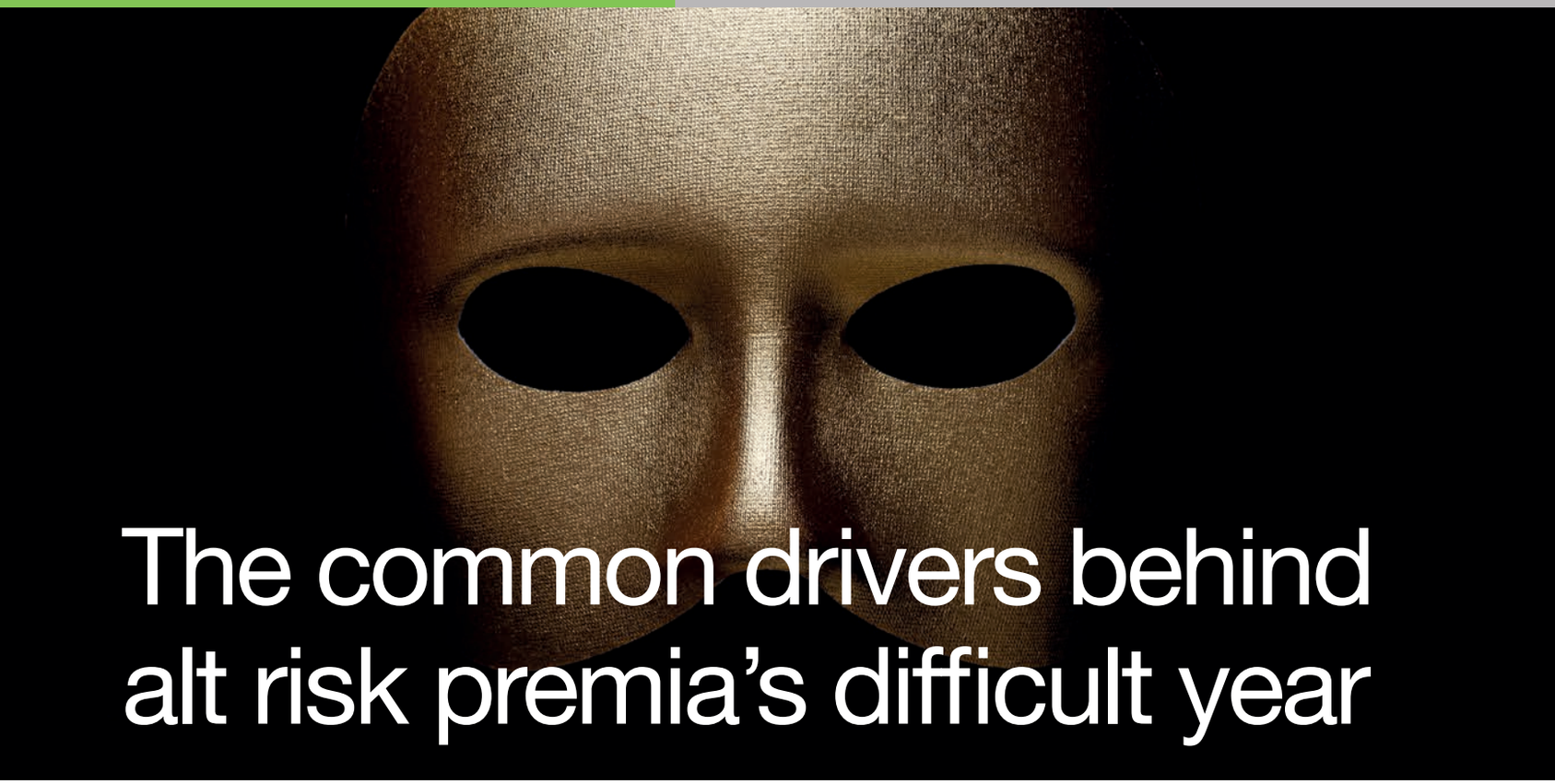


The common drivers behind alt risk premia's difficult year

Statistical analysis shows four strategies caused most pain, but funds suffered differently, write Luc Dumontier and Guillaume Garchery of La Française Investment Solutions

Those who were waiting for the alternative risk premia (ARP) sector to face its first real test got their wish in 2018.

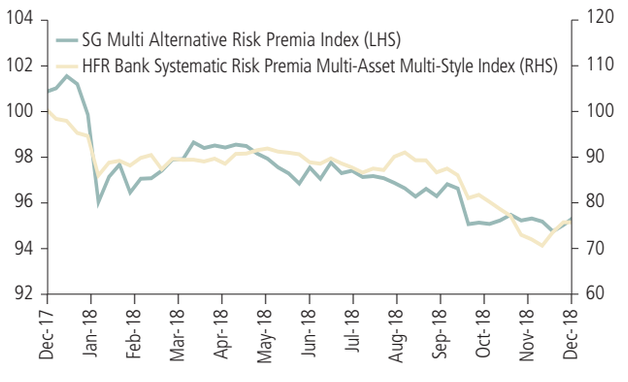
The year was disappointing for the main indexes of both bank products and funds, with performance below the risk-free rate[1] in eight months out of 12 and an average Sharpe ratio of –1.2 (see figures 1 and 2).

What happened? Here we dig into the data to understand which strategies drove losses industry-wide and to look at how individual funds were exposed.

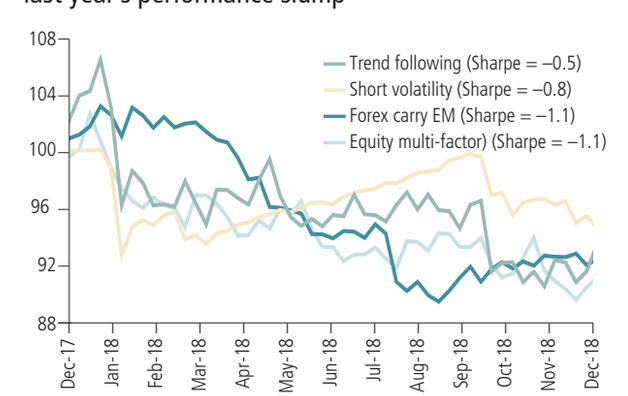
The results show funds were hurt, above all, by losses in four areas: short volatility, trend following, foreign exchange carry and equity multi-factor strategies.

They also show, however, that experience varied across funds as the risks inherent in differences in ARP approaches materialised. These risks included overly simple factor construction and inadvertent market exposure, forced selling/deleveraging, re-correlation risk and lack of diversification.

1. Both bank ARP products and ARP funds suffered in 2018

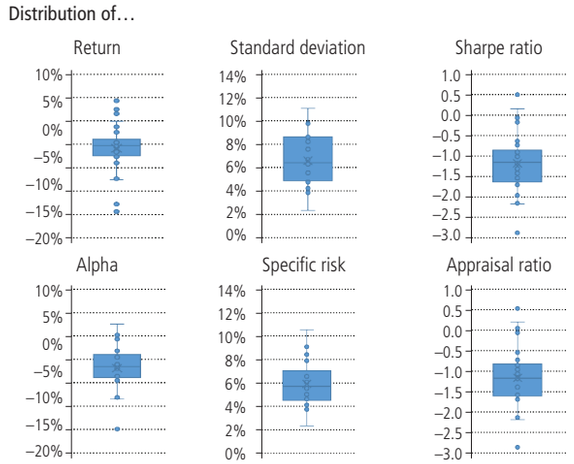


2. Four strategies are in the spotlight as the main cause of last year's performance slump

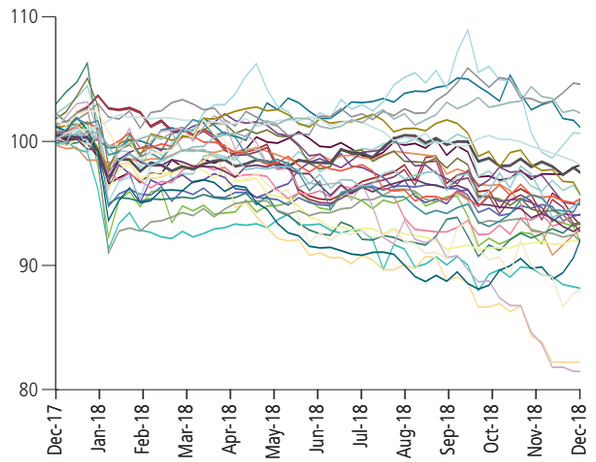


Source: Bloomberg, JP Morgan. Standard deviations/Sharpe ratios are calculated using weekly data from December 29, 2017 to December 31, 2018.
Trend following = HFRX Macro Systematic Diversified CTA Index (excess return versus Fed funds).
Short volatility = SGI Vol Premium US Index. Forex carry EM = DB Emerging Market Currencies Basket Index.
Equity multi-factor = equally weighted basket of value, quality and momentum GDM equity factors from JP Morgan Research.

3. Risk and return metrics among funds were fairly widely distributed...



4. ... but the path of returns suggests these funds were hit by a common risk



Source: Bloomberg – panel of 30 multi-asset/multi-style/long/short mutual funds selected by the authors as being the most representative.
Return measures in US dollar – for funds that only offer share classes in euros, calculations account for spread between Fed funds and Eonia.
Risk measures are calculated using weekly data from December 29, 2017 to December 31, 2018. Alphas and specific risks are calculated versus the S&P 500 Total Return Index.

Figures 3 and 4 show risk and return figures for a group of 30 multi-asset, multi-style funds selected as representative of the ARP industry. The best funds registered slightly positive returns and the worst performers were down by more than 10%. The returns of most funds sat within a band between –4% and –8% for Sharpe ratios between –1 and –1.5.

At the same time, the evolution of the performance of most funds was quite similar over the year. In other words, most seem to have been hit by the realisation of a common risk.

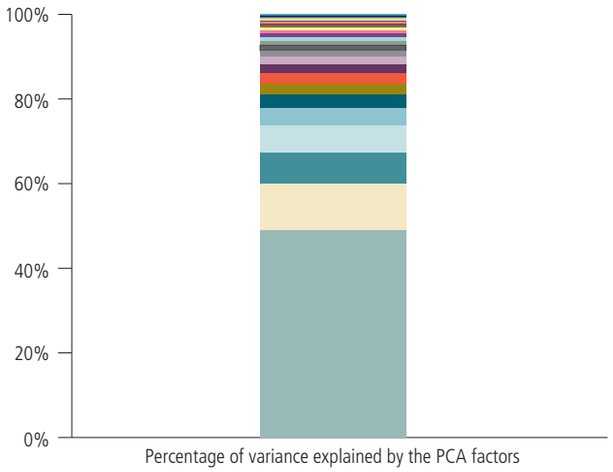
A principal component analysis (PCA) across the 30 funds confirms this visual impression.

Figure 5 shows the percentage of the risk of the funds explained, on average, by the PCA factors. On average, 50% of the risk of the funds is explained by the first factor.

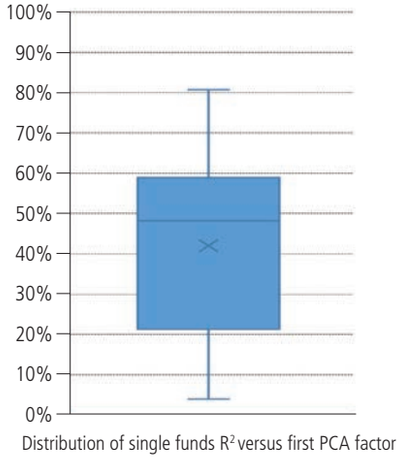
That might seem a small number compared with 90% of risk explained by the first factor for PCA on sub-categories of hedge funds.[2] But the ARP funds displayed highly heterogeneous exposure to the factor. The R^2 or the percentage of risk explained by the funds' exposure to the first factor ranges from 4% to 81% (see figure 6).

At the same time, the cumulative performance of a diversified basket of all funds weighted by their share in the first factor is strikingly similar to that of the global ARP industry (see figure 7). In other words, the first PCA factor almost fully explains the average performance of the ARP industry in 2018.

5. PCA supports this impression...



6. ... though funds varied in their exposure to the first PCA factor

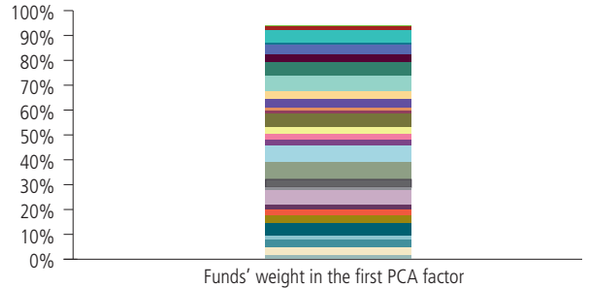


Source: Bloomberg – panel of 30 multi-asset/multi-style/long-short mutual funds selected by the authors as being the most representative.
Return measures in US dollars. For funds that only offer share classes in euros, calculations account for spread between Fed Funds and Eonia.
PCA using weekly data from December 29, 2017 to December 31, 2018.

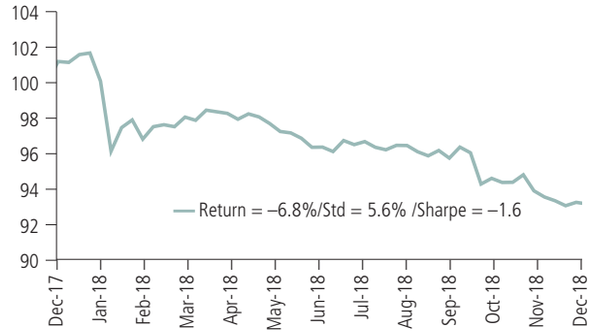
What does this first PCA factor comprise?

Table A shows the results of six independent regressions, each of which considers a different set of explanatory variables. The first column is the results of the regression of the first PCA factor versus the equity market only, while the last column shows the results of a regression of the same PCA factor versus the four strategies often talked about as the culprits for the ARP sector's poor year (see figure 2).

7. A basket of funds weighted by their share in the first factor shows returns similar to the sector as a whole



Funds' weight in the first PCA factor



Cumulative performance of the first PCA factor

Source: Bloomberg – panel of 30 multi-asset/multi-style/long-short mutual funds selected by the authors as being the most representative.
Return measures in US dollars - for funds that only offer share classes in euros, calculations account for spread between Fed Funds and Eonia.
PCA using weekly data from December 29, 2017 to December 31, 2018.

A. The risk of the first PCA factor is almost fully explained by its beta to four strategies

Alpha (weekly)		–0.15%	–0.12%	–0.10%	–0.09%	–0.07%	–0.06%
Beta	Market	0.17**	0.12**	0.04	0.03	0.03	-
	Trend following	-	0.28**	0.20**	0.20**	0.20**	0.19**
	Short volatility	-	-	0.30**	0.29**	0.26**	0.31**
	Forex carry EM	-	-	-	0.14**	0.15**	0.16**
	Equity multi-factor	-	-	-	-	0.13**	0.13**
Adjusted R^2		31%	71%	78%	80%	85%	85%

Note: ** indicates that the variables are significant at 99% level confidence

This last regression has an R^2 of 85%. That is, the risk of the first PCA factor is almost fully explained by its exposure – or beta – to the four selected strategies. Betas are all statistically significant at a 99% level.

The weekly alpha is –0.06%, or approximately –3% annually. This can be attributed to: portfolio management choices, including the different implementation of the selected strategies; dynamic allocation between strategies or additional performance from the 15% of the risk that is unaccounted for; or costs including management fees and transaction costs.

Figure 8 shows the cumulative performance of the replication portfolio of the first factor, allocated in line with the betas of the final regression analysis.

This is calculated as a beta-weighted average of the performance of the four selected strategies, all in excess of cash. To this, the weekly constant of –0.06% – the alpha – is added as well as the performance of the Fed funds rate to simulate a funded solution.

The result is striking. This beta-weighted basket almost perfectly replicates the performance of the first PCA factor with not only the same return, volatility and Sharpe ratio but also the same path of returns.

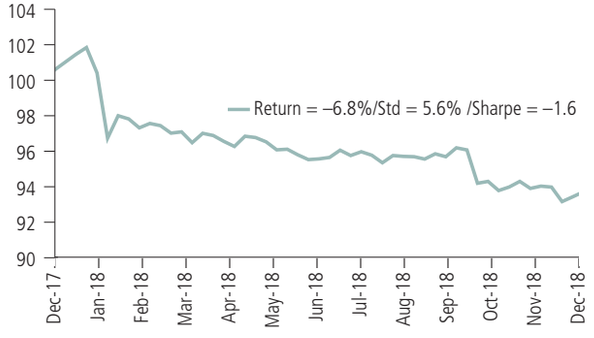
Simply put: the four strategies under the spotlight seem to explain most of the pain felt by ARP funds and products last year.

What about individual funds? A regression analysis of the performance of each of the 30 funds versus the selected strategies yields three major lessons (see table B).

First: how funds implemented the four strategies made a difference. Funds 13 and 23 (in green), for example, are both very representative of the first PCA factor, with almost three-quarters of their total risk explained by their exposure to this factor (the R^2). Moreover, their betas versus the selected strategies are roughly the same.

However, they have a significant difference in alpha – 0.07% on a weekly basis or roughly 3.5% per annum. There could be many explanations for this spread, but the high R^2 results and similarities in beta levels are clues that point towards differences in implementation of the selected strategies, either in terms of design or implementation costs.

8. A replication portfolio also matches the performance of the first factor



Regression and risk measures are calculated by the author using weekly data from December 29, 2017 to December 31, 2018.CTA = HFRX Macro Systematic Diversified CTA Index (excess return versus Fed funds), Short volatility = SGI Vol Premium US. Forex carry EM = DB Emerging Market Currencies Basket Index/ Equity multi-factor = equally weighted basket of value, quality and momentum GDM equity factors from JP Morgan.

Secondly: funds' other strategies made money in some cases, but lost money in others. The managers of funds 6 and 24 (in red) both allocated a significant portion of their risk to additional strategies other than the four identified – R^2 below 50%. While betas are similar, weekly alpha levels are opposite: –0.05% for fund 6 versus +0.04% for fund 24, a spread of 4.5% on a yearly basis.

The explanation that one fund implemented the selected strategies better remains plausible. But another likely hypothesis is that the additional strategies in these funds delivered positive performance for fund 24, but destroyed value for fund 6.

Finally, some funds largely avoided the four strategies altogether. Funds 4 and 11 (in blue) had a very low allocation to the four selected strategies in 2018 (R^2 is minimal), and especially low betas versus the equity multi-factor. Assuming this is a structural decision, can funds that do not implement these most-documented, least-debated premia really be considered ARP funds?

Why did the four strategies in the spotlight suffer?

In an article on *Risk.net* last year, we warned that trend-following strategies that had entered 2018 with very high long exposure to equity markets and the volatility premium were negatively exposed to a sharp decline in the equity markets. These risks materialised – principally in February (see figure 1).

Naively built foreign exchange carry strategies, which are long the highest-yielding currencies and short the lowest-yielding currencies, often suffer in line with unexpected falls in GDP. And, last year, the protectionist stance of the US on trade clearly hurt strategies of this type, especially in emerging markets.

The ARP funds most exposed to equity alternative premia delivered very strong performance in 2017. When things reversed in 2018, these same funds were penalised. The situation was aggravated further at the end of the year by forced selling/deleveraging linked to significant redemptions from long/short equity strategies.[3] A final factor that came into play was re-correlation risk – the Achilles' heel of ARP funds.

There were nevertheless two bright spots for the sector. First, specific risk – a strategy's risk that does not come from exposure to the overall equity market[4] – represented more than 80% of the total risk both for bank indexes and funds. ARP solutions had, on average, limited exposure to the overall equity market. That contrasts with traditional hedge funds, where specific risk represented only a third of their total risk.

Secondly, the ARP industry stood out favourably in December. Societe Generale's ARP index returned +2.9% in a month when the HFRX Global Hedge Fund Index lost 1.9%.

The sector's results in 2018, then, point not so much to problems with factor investing per se, but strengthen the case that the universe of ARP solutions is highly heterogeneous, and investors must choose carefully between the options available. ■

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[1] *Fed funds rate.*
[2] *The hedge funds industry is represented by the HFRX Global Hedge Fund Index.*
[3] *According to Wilshire Associates, the US universe of liquid alternative funds declined $31.4 billion in 2018, with dozens of funds liquidated.*
[4] *The market is represented by the S&P 500 Total Return Index.*

B. Experience across funds highlighting differences in implementation

Regression of funds ranked by descending R^2

	Alpha	Beta				Adjusted R^2
		Trend following	Short volatility	Forex carry EM	Equity multi-factor	
Fund 26	-0.05%	0.08	0.46	0.04	0.11	75%
Fund 23	0.01%	0.24	0.61	0.12	0.04	75%
Fund 13	-0.06%	0.25	0.70	0.13	0.08	74%
Fund 18	-0.01%	0.31	0.25	0.23	0.21	71%
Fund 12	-0.03%	0.16	0.30	-0.02	0.02	69%
Fund 30	-0.03%	0.04	0.90	0.18	0.02	61%
Fund 25	-0.03%	0.25	0.11	-0.13	0.05	57%
Fund 28	-0.13%	0.16	0.47	0.33	0.16	54%
Fund 1	0.03%	-0.01	0.24	0.06	0.08	54%
Fund 24	0.04%	0.32	0.31	0.34	0.18	49%
Fund 10	-0.26%	0.23	0.23	0.68	0.15	49%
Fund 7	-0.06%	0.03	0.44	0.13	-0.01	43%
Fund 14	0.08%	0.38	0.42	-0.03	0.07	43%
Fund 17	-0.13%	0.11	0.24	0.11	0.03	43%
Fund 6	-0.05%	0.25	0.23	0.25	0.19	42%
Fund 21	-0.07%	0.15	0.22	0.32	-0.06	42%
Fund 9	-0.13%	0.15	0.11	0.04	0.07	41%
Fund 8	-0.04%	0.09	-0.01	0.28	0.17	39%
Fund 2	-0.18%	0.35	-0.20	0.00	0.44	32%
Fund 22	-0.31%	0.24	-0.05	0.19	0.30	31%
Fund 16	-0.06%	0.20	-0.02	0.00	0.20	27%
Fund 15	-0.09%	0.20	-0.04	-0.03	0.15	25%
Fund 5	-0.11%	0.13	-0.10	-0.33	0.31	23%
Fund 3	-0.04%	0.14	0.03	0.18	0.23	18%
Fund 20	-0.16%	0.12	-0.14	-0.14	0.16	16%
Fund 19	-0.10%	-0.05	0.19	0.05	0.31	15%
Fund 29	-0.09%	-0.04	0.18	0.05	0.31	15%
Fund 4	-0.07%	-0.05	-0.02	0.08	0.00	8%
Fund 11	0.07%	0.13	-0.04	0.13	-0.02	7%
Fund 27	0.02%	-0.05	0.22	-0.08	0.07	5%

>> Further reading on www.risk.net

- Bull run shows up differences in how factor strategies are built *www.risk.net/5393526*
- Why factor crowding fears are overblown *www.risk.net/5341166*
- Why re-correlation matters in alternative premia investing *www.risk.net/2473808*