

# Investing systematically to diversify risk and bias

By Elena Johansson, 17 Jul 20

How quant strategies have accessed risk premia evenly during market volatility



Under extreme market stress, 13 of the 14 quant equity strategies from French asset manager Tobam delivered excess gross return in comparison to their benchmarks.

Only one, however, delivered a positive return – the Tobam Anti-Benchmark US Equity (USD).

The table below displays the performance of the strategies from January to May 2020.

Period: December 30, 2019 - May 29, 2020	Gross Performance		Volatility				
	Period	Delta	Period	Delta			
Equities							
TOBAM Anti-Benchmark Emerging Markets Equity (USD) MSCI Daily TR Net Emerging Markets	-13.27% -16.24%	2.98%	33.73% 33.51%	0.65%			
TOBAM Anti-Benchmark All Countries World Equity (USD) MSCI AC World Daily TR Net USD	-7.22% -9.01%	1.80%	32.84% 40.52%	-18.97%			
TOBAM Anti-Benchmark World Equity (USD) MSCI Daily TR Net World USD	-6.40% -7.99%	1.60%	34.91% 42.59%	-18.03%			
TOBAM Anti-Benchmark US Equity (USD) MSCI Daily TR Net USA US	0.26% -4.30%	4.56%	44.35% 50.42%	-12.05%			
TOBAM Anti-Benchmark Canada Equity (CAD) s&P/TSX COMPOS TR INDEX	- <b>4.</b> 36% -9.88%	5.52%	43.21% 49.92%	-13.45%			
TOBAM Anti-Benchmark Japan Equity (JPY) MSCI Japan Net TR JPY	- <b>4.24%</b> -7.91%	3.68%	29.49% 31.07%	-5.09%			
TOBAM Anti-Benchmark Euro Equity (EUR) MSCI Daily TR Net EMU EUR	-9.76% -16.58%	6.82%	32.32% 41.40%	-21.94%			
TOBAM Anti-Benchmark Pacific ex-Japan Equity (USD) MSCI Daily TR Net Pacific Ex Japan USD	-18.70% -20.12%	1.42%	30.90% 37.97%	-18.62%			
TOBAM Anti-Benchmark World ex-US Equity (USD) MSCI WORLD ex USA NR	-10.42% -14.34%	3.92%	27.38% 34.87%	-21.46%			
TOBAM Anti-Benchmark Korea Equity Fund (KRW) KOSPI 200 INDEX	-5.56% -8.66%	3.11%	<b>34.55%</b> 37.84%	-8.68%			
TOBAM Anti-Benchmark UK Equity (GBP) MSCI UK Net TR	-18.80% -19.43%	0.63%	35.80% 39.38%	-9.08%			
TOBAM Anti-Benchmark France Equity (EUR) MSCI Daily Net TR France	-17.74% -19.99%	2.25%	36.72% 43.28%	-15.16%			
TOBAM Anti-Benchmark Switzerland Equity (CHF) SPI SWISS PERFORMANCE IX	- <b>4.</b> 98% -4.61%	-0.37%	27.15% 31.44%	-13.64%			
TOBAM Anti-Benchmark World ex-Switzerland Equity Fund	-6.90% -8.90%	2.00%	33.95% 42.87%	-20.80%			

### Source: Tobam

In terms of the largest outperformance in delta, Tobam's euro equity strategy returned - 9.76% compared to -16.58% for the MSCI Daily Net Total Return EMU Euro – a difference of 6.82%.

### Diversification theory

The firm credits this outperformance to a mathematical model, which allows Tobam, with \$6.7bn (€5.8bn) in assets under management, to diversify investments beyond traditional means.

Managing director and deputy chief investment officer Tatjana Puhan explained to *Expert Investor*: "Basically, we are looking at how the different stocks are correlated to each other in this universe, and then we try to maximise the diversification given this investment universe."

Correlation exists, Puhan said, when, for example, different stocks have exposure to the same risks from the energy or financial sector.

The more uncorrelated stocks are to each other, the more they are diversified and able to compensate for each other's risk.

Tobam's approach seeks to create 'neutral' portfolios that are diversified as much as possible and don't have any larger bias. This is one of the advantages compared to market cap indices, Puhan explained.

#### **Biased indices**

While people believe that passive investing in market indices would allow unbiased investing in market stocks, this is not the case, she argues.

"You can have 500 stocks in your portfolio and you can have a very large concentration risk," Puhan said; pointing to the fact that there is a huge single stock risk in the S&P 500, with 20% of allocations weighted towards just five firms.

This bias would also apply to fixed income benchmarks.

When it comes to high-yield indices, the weight of an issuer in the index is determined by its outstanding debt, Puhan said.

This means that issuers with the most leverage are given the biggest weighting, while also carrying the largest risk to default in crisis times, she added (see table below).

#### Diversification Ratios Squared – Market Cap weighted Indices versus Anti-Benchmark® strategies As of February 29, 2020

Universes	DR <sup>2</sup> Benchmark	DR <sup>2</sup> Anti-Benchmark®	% diversification captured by benchmark	
MSCI All Countries World	3.45	10.80	31.9%	
MSCI World	3.18	9.88	32.2%	
MSCI World ex USA	3.70	9.76	37.9%	
MSCI Emerging Markets	3.76	8.83	42.6%	
MSCI USA	2.77	7.52	36.9%	
MSCI Pacific Ex-Japan	3.16	6.28	50.3%	
MSCI Euro	2.74	6.22	44.0%	
MSCI Switzerland	2.12	5.71	37.2%	
MSCI Japan	2.90	5.32	54.4%	
MSCI UK	3.08	4.33	71.0%	
ICE BofA ML Global Corporate	3.98	5.43	73.4%	
ICE BofA ML Global High Yield	5.46	7.10	76.9%	
Multi-Asset Universe (MSCI ACWI + ICE BolAML, Global Corporate)	5.36	22.57	23.7%	

Source: TOBAM

\*: Please note that AB Multi Asset has no benchmark but might be compared to a dedicated universe constructed as a basket of market-cap indices (universes) with equivalent average weights.

TOBAM's Diversification Ratio<sup>®</sup> (DR) measures to what extent a portfolio is diversified. The DR<sup>2</sup> (square of the diversification ratio) measures the number of effective degrees of freedom to which a portfolio is exposed.

As the table shows, the "broad market" indices leave diversification on the table. In addition to a snapshot of each market's DR<sup>o</sup>, the table shows the DR<sup>o</sup> of a well-diversified portfolio, and the fraction of available diversification used by the index.

Source: Tobam

## Crisis performance

Even though volatilities and correlations move up in crisis times, Tobam's diversification approach can still create excess return, Puhan said, as market sell-offs happen with different intensity.

"In strong periods of market stress asset price dispersion is going up; with dispersion I mean the difference in the strength in price movement.

"And if you are diversified, this means that you can actually capture much better the whole market risk premium," she said.

This also explains the stronger outperformance of Tobam's euro equity strategy compared to its other strategies.

The underlying Euro universe had a stronger bias towards financials and industrials than other universes, and when these sectors sold off heavily, Tobam's unbiased strategy was able to capture the greater difference in risk exposures.

The firm's strategies, which rely on historical data (return time series), are an antidote to active fund managers seeking to time the market or forecast and participate in trends.

The mantra is that being diversified is the fundamental strategy against any risk.

"And if you don't know what the future is going to bring, [...], we think that one thing that you do know is that being diversified is probably a good idea," Puhan says.