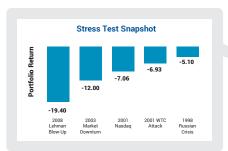


Affordable stress-testing and systematic risk analysis with

RISKPLUS

Understanding downside risk is a critical part of due diligence. Even in low-volatility, growth environments, investors still want to know how their portfolios would perform under a variety of conditions, from historical events to long-tail scenarios. RiskPlus uses an innovative, multi-factor regression model that makes systematic risk assessment possible for a fraction of the cost of position-based tools. RiskPlus uses the performance data already in eVestment, or you can aggregate data from your managers. With RiskPlus you can:

Stress-test your portfolio with a robust library of factor models – and customize your own



Analyze market and factor sensitivity



Identify strategies that are risk contributors and diversifiers



USE RISKPLUS TO

Stress test your portfolio

Use out-of-the-box market stresses, or create your own to conduct simulations and see how your portfolio would perform under various conditions — whether actual historical events or hypothetical scenarios.

Monitor key risk-return metrics

Get immediate line-of-sight into essential metrics, from Skewness, Kurtosis and Sharpe Ratio to Stable Tail-Adjusted Return, R-Ratio and Volatility.

Identify portfolio sensitivity to top factors

Choose the factors that are most important to you and get a dashboard view of how sensitive your portfolio is to each.

Analyze risk composition

Identify strategies that are diversifying your portfoliorisk and that are contributing to it.

Generate automated reports

Inform your board or other stakeholders about your systematic approach to risk assessment.

Request a tour of RiskPlus:

solutions@evestment.com

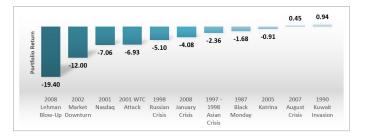
Technical Brief

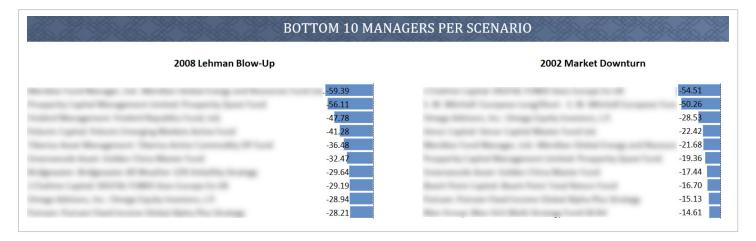
eVestment RiskPlus is a returns-based risk analytics solution, providing a comprehensive breakdown of your portfolio's risk and return components. RiskPlus allows investors to use custom factor models, risk budgeting and user-defined stress tests to analyze risk and report results to their stakeholders.

Capabilities

Stress Testing

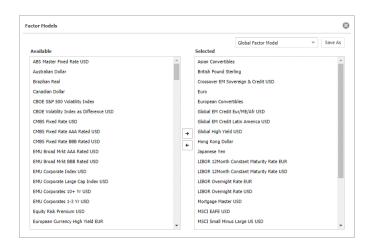
Choose from 11 pre-defined stress tests or customize your own to assess the impact to your portfolio against historically documented financial crises and fluctuations in the market. View the 10 worst performing managers per historical scenario based on percentage loss of initial strategy value.





Custom Factor Models

Choose from over 170 factors to create custom factor models for multi-dimensional insight into the sources of risk in your portfolio.



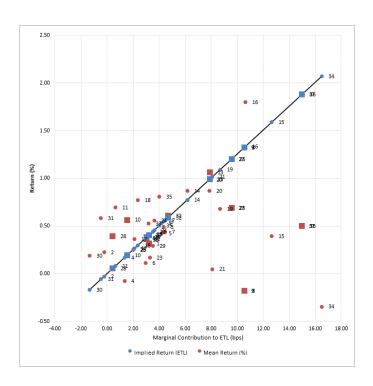
Portfolio Risk Analysis

Gain a comprehensive and summarized view of your portfolio risk, including its VaR, Expected Tail Loss and Expected Tail Return statistics, risk versus return and downside versus upside potential.

Monthly Portfolio Risk Budgeting

Identify the biggest contributors of portfolio risk and risk diversifiers by comparing returns that strategies should be earning based on their risk profile versus actual returns to maximize portfolio performance.

	TRADI	TIONAL		TAIL MEASURES							
StDev	Ann. StDev	Mean	Ann. Mean	ETL 95	VaR 95	VaR 5	ETR 95				
2.52	8.73 0.69 8.30		5.51	-3.55	4.43	5.64					
TOP 10 FACTORS BY SYSTEMATIC RISK (STDEV)				TOP 10 FACTORS BY SYSTEMATIC RISK (ETL)							
		Factor PC to Factor				Factor PC to	Factor				
		StDev	MC to StDev			ETL	MC to ETL				
TOTAL SYSTEMATIC RISK		87.07		TOTAL SYSTE	MATIC RISK	95.08					
Asian Convertibles		36.98	2.34	Asian Convert	ibles	39.49	5.47				
MSCI EAFE USD		34.02	4.51	MSCI EAFE US	D	37.35	10.84				
European Convertibles		11.52	3.56	European Cor	vertibles	12.66	8.57				
Russell 3000		6.25	3.48	Russell 3000		6.90	8.41				
Global EM Credit		3.88	2.31	S&P GSCI Inde	×	3.88	13.21				
MSCI Value Minus Growth		3.87	-0.44	Global EM Credit		3.82	4.97				
S&P GSCI Index		2.99	4.65	MSCI Value Minus Growth		3.06	-0.76				
Global High Yield USD		2.19	2.33	S&P GSCI Crude Oil USD		2.79	17.24				
S&P GSCI Crude Oil USD		2.12	5.99	Mortgage Master USD		2.36	-0.53				
20-Year Trea	ar Treasury Constant 0.72 2.33		2.33	Global High Yi		2.18	5.07				
SPECIFIC RISK		12.93		SPECIFIC RISK		4.92					



Stress Factor Values

View the factor analysis table to tie factor exposure to the effect on the portfolio during the stress period and identify any factors that had significant returns.

STRESSED FACTOR VALUES													
Factor Name	First Date	Last Date	2008 Lehman Blow-Up	2002 Market Downturn	2001 Nesdeq	2001 WTC Attack	1990 Russian Crisis	2008 January Crisis	1997 - 1998 Asian Crisis	1987 Black Monday	2005 Katrina	2007 August Crisis	1990 Kuwai Invasion
20-Year Treasury Constant Maturity Rate	10/01/1993	12/30/2019		-20.54	2.37	2.74	-6.84		0.00	24.47	7.19		7.40
3-Year Treasury Constant Maturity Rate	01/02/1969	12/30/2019		-48.61	+5.11	-16.37	-11.50		-0.52	-10.64	9.49		2.18
Asian Convertibles	12/31/1998	12/31/2019		-4.70	-7.16	-5.71	+2.45		-1.20	-0.43	-2.93		0.64
British Pound Sterling	12/31/1969	12/31/2019		-6.25	1.96	-0.48	-2.01		-1.96	-4.49	5.25		-7.74
CBOE Volatility Index as Difference USD	01/02/1990	12/30/2019		27.67	10.46	19.41	52.58		11.44	117.49	4.59		21.80
Crossover EM Sovereign & Credit USD	12/31/1998	12/31/2019		-3.08	-2.09	-2.83	-4.21		-1.35	-0.90	-1.59		1.80
Euro	12/31/1998	12/31/2019		-6.66	2.71	-0.83	-1.53		0.02	0.85	4.15		-4.32
European Convertibles	12/31/1998	12/31/2019		-36.44	-0.76	-1.74	-2.64		-1.39	-0.96	-3.82		2.89
Global EM Credit Eur/ME/Afr USD	12/31/1998	12/31/2019		5.46	-4.77	-0.36	-2.14		-1.63	-16.11	-1.51		-0.81
Global EM Credit Latin America USD	12/31/1998	12/51/2019		-15.40	-1.17	-1.86	-6.30		-2.95	-2.48	-0.49		-0.07
Global High Yield USD	12/31/1997	12/51/2019		-12.58	-4,47	-5.87	-4.87		-1.20	-6.50	-2.72		2.35
Japanese Yen	12/31/1969	12/51/2019		-1.67	4.59	-2.02	1.15		-0.09	-3.40	4.89		-1.16
UBOR 12Month Constant Maturity Rate EUR	12/31/1996	12/51/2019		-1.05	-0.27	-0.41	-0.16		0.28	0.00	0.20		0.01
UBOR 12Month Constant Maturity Rate USD	12/31/1996	12/31/2019		-33.84	-7.38	-23.09	-4.83		1.46	0.09	10.18		7.35
LIBOR Overnight Rate EUR	12/31/1996	12/31/2019		0.00	-0.04	-1.24	0.30		0.13	-0.20	0.00		-0.01
LIBOR Overnight Rate USD	12/31/1996	12/31/2019		1.58	-5.27	-48.36	6.27		1.13	11.22	7.35		-18.16
ML Global Govt Bond II USD	12/31/1985	12/31/2019		10.12	-2.19	1.03	2.71		-0.13	-11.00	-4.49		0.72
MSCI EAFE USD	12/31/1969	12/31/2019		-27.29	-7.94	-17.30	-11.96		-5.03	-11.72	-2.88		-6.57
MSCI Small Minus Large US USD	05/29/1992	12/31/2019		-5.50	-0.48	-4.65	-9.54		1.39	-8.14	-3.00		-4.08
MSCI Value Minus Growth US USD	05/29/1992	12/31/2019		4.77	13.94	7.23	8.98		4.06	-3.40	-0.69		-3.57
Mortgage Master USD	12/31/1975	12/31/2019		4.79	0.71	1.11	1.10		0.55	2.92	-0.79		-0.69
Russell 3000	12/29/1978	12/31/2019		-29.94	-13.11	-15.23	-20.33		-10.02	-30.69	-5.41		-17.20
S&P GSCI Crude Oil USD	01/07/1987	12/31/2019		9.56	-6.93	-5.27	-8.70		-3.80	3.00	-2.48		65.03
S&P GSCI Index	12/31/1969	12/31/2019		7.77	-4.31	-5.01	-10.07		4.10	0.36	0.51		33.36

Factor Contribution and Exposure

Gain insight into the breakdown of risk by its systematic and specific components and view strategy exposure to each factor in the model used for the stress test. See the sensitivity of each strategy, and the total portfolio, to the factors in the model to explain strategy behavior under each scenario.



The sensitivity of each position toward the res						
	Commodity	Equity Risk	FX Risk	Fixed Income	Interest Rate	Volatility Risk
	Risk Sensitivity	Sensitivity	Sensitivity	Risk Sensitivity	Risk Sensitivity	Sensitivity
RiskPlus HFs Portfolio MD	2.51	-3.65	11.84	23.44	0.02	2.95
Absolute Return	0.75	-0.50	3.60	6.44	-0.47	0.48
		-0.75	2.32	-0.18		
Edgeuste Edgeuste 6' Budle (N. to	0.50	-0.58	0.67	4.27	-0.51	
	0.18		-0.33	0.02	-0.25	
year Matter & In the Lit cog/Start Syst		1.17	-0.22	0.71	0.11	-0.16
the troop like 5.1 Matt framing had 50.3	0.07	-0.34	0.52	0.32	-0.12	0.21
	or Trinsings		0.63	1.29	0.31	0.43
Commodities	0.94			0.54		-0.13
Territor State Management Theritor School in	0.94			0.54		-0.13
Credit Long Short		-0.64	-1.05	1.21	0.01	0.77
Buildianian lights the Wooten Link S	terralization Marie			0.28	-0.09	0.28
fullige for Kingen Intel (gettin f		-0.64	-1.05	0.93	0.10	0.49
Equity Long Short	0.08	-5.59	1.36	5.17	0.60	0.87
All their Management All the facility only				5.03	-0.09	
Saller Management Station Republic Sale.	0.38	1.51		1.63		
		-12.94		-4.38		
		0.05		-0.20	0.02	
regitade has croked of hose billings for	-0.24	-0.58	0.54	5.26	0.31	
Straige Military, Nr Straige Spally Indiana.	0.26	1.86	1.38	0.76	0.36	-0.37
Nation Coping Nation Energing Market, Act		2.79		-2.83		1.24
is allocat temperaturage that it is as	-0.32	1.72	-0.56	-0.10		

Factor Analysis

Use the factor analysis data table and correlation matrix to explain the variance of each strategy in your portfolio.

BETA P-VALUE	RiskPlus HFs Portfolio MD	Fund I	Fund II 27.05% 0.05		84.25% 0.01		Fund IV 48.44% 0.01		Fund V 85.51% 0.01	
R ²	88.18%	34.27%								
Residual Standard Error		0.05								
Intercept	0.004				0.004	0.000	0.006	0.000	-0.004	0.028
20-Year Treasury Constant Maturity Rate	0.008								-0.140	0.000
3-Year Treasury Constant Maturity Rate	0.000								-0.020	0.069
Asian Convertibles	0.398	0.991 0.000			0.118	0.027	0.263	0.000		
British Pound Sterling	0.014		0.663	0.004	-0.117	0.003				
CBOE Volatility Index as Difference USD	0.029						0.060	0.035		
Crossover EM Sovereign & Credit USD	-0.068		-1.245	0.000					0.525	0.000
Euro	0.098		0.419	0.123	0.236	0.001			0.197	0.001
European Convertibles	0.081				0.217	0.000				
Global EM Credit Eur/ME/Afr USD	0.042						0.083	0.002		
Global EM Credit Latin America USD	-0.014				0.063	0.076			0.177	0.007
Global High Yield USD	0.024				0.143	0.005				
Japanese Yen	0.007				-0.147	0.004				
LIBOR 12Month Constant Maturity Rate EUF	0.001				0.018	0.001				
LIBOR 12Month Constant Maturity Rate USE	-0.006				-0.032	0.011	-0.026	0.077		
LIBOR Overnight Rate EUR	0.000						0.007	0.086	0.011	0.050
LIBOR Overnight Rate USD	-0.003	-0.018 0.100			0.005	0.047				
ML Global Govt Bond II USD	0.018		1.162	0.002	-0.463	0.000	-0.287	0.000		
MSCI EAFE USD	0.190		0.987	0.000						
MSCI Small Minus Large US USD	-0.050									
MSCI Value Minus Growth US USD	-0.221		-0.826	0.003					-0.304	0.000
Mortgage Master USD	-0.247								0.548	0.078
Russell 3000	0.045		-0.512	0.036					0.135	0.004

Returns & Correlation

Choose Classical or EWMA methods of calculating mean returns and correlations to accurately capture the dependency relationships between the returns of your strategies.

