

HEDGE FUND EXPOSURE & TAIL RISK

Deconstructing Risk and Return Expectations and Stress Testing the 30 Largest Funds

Data Through: Month-End July 2014

Release Date: September 23, 2014



The 30 largest hedge funds in the eVestment research database reported USD 445.96 billion in assets under management (AUM) at the end of July 2014 and represent 14.8% of our estimated total industry base. Understanding the current market exposures, risks factors, and performance expectations of these funds, especially if a crisis were to occur during the following month, offers a way to gauge the positioning of the broader hedge fund industry.

To do this we use our [PerTrac RiskPlus](#) product, developed in partnership with FinAnalytica, which incorporates returns-based analysis and a fat-tailed methodology, to create a forward-looking, asset-weighted, pro forma portfolio of these 30 hedge funds. If an institutional investor were to purchase a basket of the largest hedge funds, the output of this analysis would quantify their market exposures and risks.

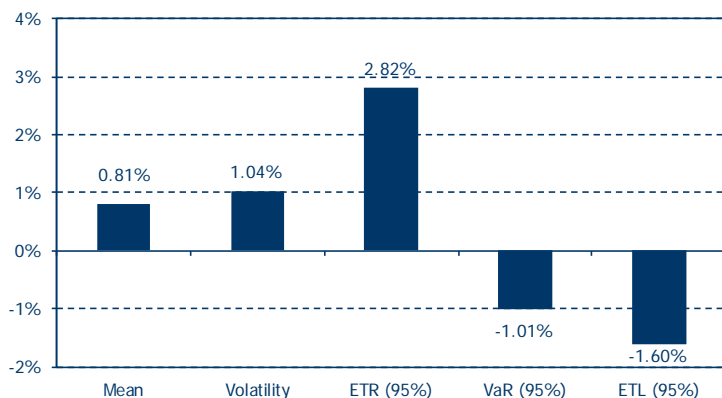
The 30 hedge funds in our analysis reported to eVestment individual fund AUM ranging from USD 5.24 billion to USD 79.85 billion. Average fund AUM was USD 14.87 billion and the median USD 8.74 billion.

For the remainder of this report we look at the 30 fund asset-weighted portfolio's expected risk and return characteristics, market exposures, and anticipated volatility from these market exposures. We then analyze performance expectations if historical crises were to reoccur along with outlooks during customized market panic and euphoria settings.

Top-Level Portfolio Risk and Return Characteristics

An asset-weighted portfolio comprised of the 30 largest hedge funds is expected to return on average 0.81% over the next month, and in the best case scenario 2.82% according to its Expected Tail Return (ETR) at a 95% confidence level, see below for more information on these statistics. If the portfolio experiences a loss however, there is a 95% chance that it will not return less than -1.01% based on its Value at Risk (VaR). In the event that it does, the return should be limited to -1.60% according to its Expected Tail Loss (ETL) at a 95% confidence level. The volatility expectation for the portfolio over the next month is 1.04%.

Figure 1: Expected Portfolio Risk and Return Statistics for Next Month



RiskPlus Statistics

Mean – the expected portfolio return, on average, over the next month.

Volatility – the monthly portfolio standard deviation expectation over the next month. Volatility is not necessarily a negative trait.

VaR (95%) – stands for Value at Risk, it is the threshold of loss over a given horizon. If the portfolio experiences a loss, there is a 95% chance that it will not lose more than this figure during the next month.

ETL (95%) – Expected Tail Loss, the average of returns that exceed VaR.

ETR (95%) – Expected Tail Return, it uses the same calculation as ETL, but refers to the positive side of the return distribution.

Summary of Main Findings

- Since the end of Q4 2013 through July 2014, several factor exposures for the asset-weighted portfolio of the 30 largest hedge funds have shifted tremendously. The portfolio's exposure to BBB/BB rated US corporate debt declined significantly, but in turn rose meaningfully to US asset backed securities. Aggregate short exposure to speculative US and Canadian corporate debt shrank to 1/10th of the portfolio's previous level and exposure to the bond markets of 23 (predominantly developed) nations swung from net positive to net negative.
- The latest historical stress test results reveal the portfolio continues to be most vulnerable to a repeat of the *2008 Sept – Oct Crash*, but while the conclusion matches that of Q4 2013, the expected drawdown for the July 2014 portfolio is nearly 3x larger (-12.37% vs. -4.60%). We note part of the reason for the exacerbation is a hefty rise in our portfolio's exposure to asset backed securities, fixed income instruments which suffered major losses during the 2008 subprime crisis.
- The portfolio's exposure indicates the underlying funds have a distinct preference to be long ABS markets, but at an aggregate level have created a short exposure to hybrid and fixed-rate mortgage pass-through securities. This shows a level of sensitivity to interest rate risks emanating from the portfolio.
- An asset weighted portfolio of the 30 largest hedge funds would represent bullish bets on US investment grade fixed rate asset backed securities, convertible issues of companies in North America, Europe and Asia/Pacific, US equities, the US dollar, and BBB/BB rated US corporate debt.
- Net long positions on volatility and the US dollar were the primary diversification drivers within the portfolio as exposure to the *CBOE Volatility Index as Difference* and *Trade Weighted Exchange Index: Broad* factors offset the total expected portfolio volatility by 11.86% and 8.63%, respectively. Conversely, net long positions on convertible issues of companies in North America, Europe and Asia/Pacific along with net longs on the US equities market were the primary risk contributing elements; the *Global 300 Convertible Index* and *Russell 3000* comprised 38.38% and 24.62% of the total expected portfolio volatility, respectively.
- The largest portfolio losses are expected to result from shocks in fixed income factors, particularly the *ABS Master Fixed Rate* and *US Crossover Corp*. Both factors are specific to the US domestic market and indicate portfolio exposure to investment grade fixed rate asset backed securities and BBB/BB rated corporate debt.
- 79.58% of the overall portfolio volatility, within the parameters of our factor model, can be explained by systematic (market) risk and 20.42% by idiosyncratic risk. The explanatory power of the systematic component increased by 15.28% since Q4 2013 while the unknown, idiosyncratic component waned by the same amount, suggesting the portfolio's risk/return expectations are now more tied to market beta.
- Historical stress test results show the portfolio return expectations as negative in all 11 scenarios, which is a break from the prior finding that it was at least prepared, albeit just barely, for a reoccurrence *1987 Black Monday*. However, since Q4 2013 the portfolio return expectations have increased for 4 scenarios: *1990 Kuwait Invasion* (+48bps), *1997 Asian Crisis* (+2bps), *2002 Market Downturn* (+12bps), and *2005 Katrina* (+14bps).

Hedge Fund Exposure & Tail Risk



Factor Exposures and Risks

Portfolio exposures to the factors indicate what should generally happen to the underlying performance of the portfolio based on the movement in each factor. In *figure 2* for example—all else held constant—a 1% return in the *ABS Master Fixed Rate USD* factor should lead to a 0.4132% return in the portfolio. Portfolio exposure are weighted betas determined by a stepwise regression of the 30 largest hedge funds; therefore, a large exposure to one factor may only be the result of a few funds.

For the majority of factors, a positive exposure value implies an owner of the portfolio has accepted a long position from the combined funds, and a negative value a short position. Exceptions include FX and Fama-French factors (Size & Style). A positive exposure value in FX indicates that the portfolio should reap the benefits when a currency depreciates relative to the USD, while a negative exposure value implies the portfolio should benefit when a currency appreciates relative to the USD. A positive exposure value in Size and/or Style indicates a heavier weighted exposure to the first variable (small caps and/or value stocks) and a negative value a heavier weighted exposure to the second variable (large caps and/or growth stocks).

- The 30 hedge funds controlling USD 445.96 billion in assets are, in aggregate, bullish on US investment grade asset backed securities, convertible issues of companies in North America, Europe and Asia/Pacific, and the US equities market, based on the portfolio's large positive exposures to the *ABS Master Fixed Rate* (+41.32%), *Global 300 Convertible Index* (+22.41%), and *Russell 3000* (+11.32%) factors. The funds were also in aggregate long the US dollar, BBB/BB rated US corporate debt, and volatility, based on exposures to *Trade Weighted Exchange Index: Broad* (+8.62%), *US Crossover Corp* (+6.51%), and *CBOE Volatility Index as Difference* (+6.47) factors.
- The same 30 large funds are bearish on US-agency issued fixed rate and hybrid residential mortgage pass-through securities, 20-Year Treasuries, and AAA-rated US commercial mortgage backed securities, based on the portfolio's negative exposures to the *Mortgage Master* (-8.75%), *20-Year Treasury Constant Maturity Rate* (-4.78%), and *CMBS Fixed Rate AAA Rated* (-4.05%) factors.

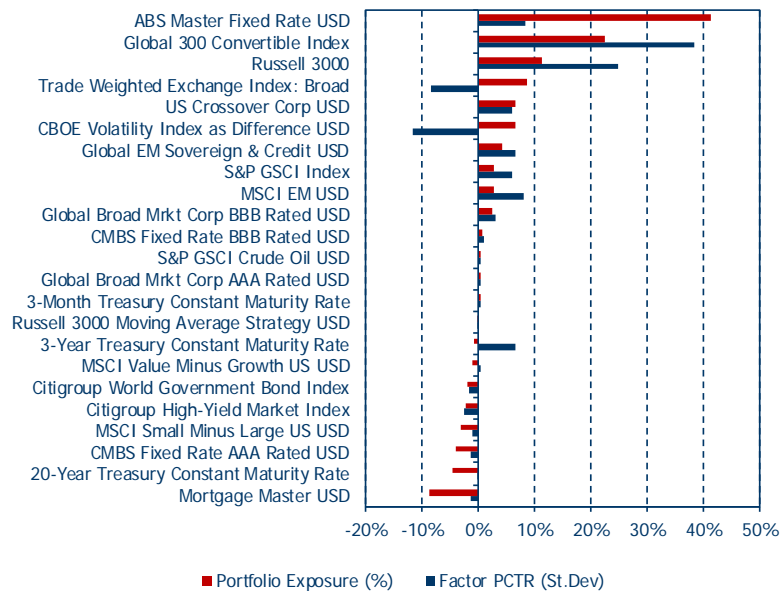
Portfolio exposure, however, explains sensitivity and not risk. The portfolio's risk, as defined by volatility, can be decomposed by taking each of the individual regressed factors' marginal contributions to risk (Factor MCTR)—which denote by how much volatility is expected to increase or decrease if exposure to a given factor were to rise by 1%—and multiplying these by their respective weights and then dividing by the portfolio's standard deviation (this only applies to the systematic risk components). This outputs each factors' percentage contribution to risk (Factor PCTR) within the context of the overall portfolio.

- Aggregating the PCTR's shows that 79.58% of the overall portfolio volatility, within the parameters of our factor model, can be explained by systematic (market) risk and 20.42% by idiosyncratic risk. Within the systematic component, the fixed income (+55.49%) and equity (+32.70%) factors are the largest contributors to risk, while exposures to volatility (-11.86%) and FX (-8.63%) are acting as significant risk diversifiers.
- In absolute terms, the factor contributing the most to the portfolio's risk compared to the portfolio's exposure to that factor is the *Global 300 Convertible Index* (+15.97% more in risk than exposure). In relative terms it is the *3-Month Treasury Constant Maturity Rate* (ratio of risk contribution to exposure is 7.43), though the portfolio's slight negative exposure to the *3-Year Treasury Constant Maturity Rate* comes in at a close second with a ratio of 6.84.
- Positive exposure to market volatility and the US dollar provided the portfolio with the most diversification as the *CBOE Volatility Index as Difference* and *Trade Weighted Exchange Index: Broad* offset volatility by 11.86% and 8.63%, respectively.
- Portfolio exposure to the *ABS Master Fixed Rate* factor is highest among all factors at +41.32. However, a high portfolio exposure to a particular factor does not necessarily mean that this factor will act as a high risk contributor; here, the *ABS Master Fixed Rate* factor accounted for 8.20% of total volatility, one-fifth the level of its exposure.

Figure 2: Portfolio Exposures, Factor Marginal Contribution to Risk (MCTR), and Factor Percentage Contribution to Risk (PCTR)

Factor	Portfolio Exposure (%)	Factor MCTR (St.Dev) (bps)	Factor PCTR (St.Dev)
Specific Risk			20.42
Total Systematic Risk			79.58
Commodity Risk			6.24
S&P GSCI Crude Oil USD	0.11	2.61	0.27
S&P GSCI Index	2.80	2.35	5.98
Equity Risk			32.70
MSCI EM USD	2.53	3.53	8.11
Russell 3000	11.32	2.39	24.62
Russell 3000 Moving Average Strategy USD	-0.06	0.62	-0.03
FX Risk			-8.63
Trade Weighted Exchange Index: Broad	8.62	-1.10	-8.63
Fixed Income			55.49
ABS Master Fixed Rate USD	41.32	0.22	8.20
CMBS Fixed Rate AAA Rated USD	-4.05	0.43	-1.57
CMBS Fixed Rate BBB Rated USD	0.68	1.64	1.01
Citigroup High-Yield Market Index	-2.37	1.27	-2.73
Citigroup World Government Bond Index	-2.05	0.95	-1.78
Global 300 Convertible Index	22.41	1.88	38.38
Global Broad Mrkt Corp AAA Rated USD	0.10	1.29	0.11
Global Broad Mrkt Corp BBB Rated USD	2.46	1.33	2.98
Global EM Sovereign & Credit USD	4.12	1.73	6.46
Mortgage Master USD	-8.75	0.20	-1.59
US Crossover Corp USD	6.51	1.02	6.01
Interest Rate Risk			6.56
3-Month Treasury Constant Maturity Rate	0.03	8.18	0.19
3-Year Treasury Constant Maturity Rate	-0.96	-7.53	6.58
20-Year Treasury Constant Maturity Rate	-4.78	0.05	-0.20
Size			-1.11
MSCI Small Minus Large US USD	-3.09	0.40	-1.11
Style			0.20
MSCI Value Minus Growth US USD	-1.11	-0.20	0.20
Volatility			-11.86
CBOE Volatility Index as Difference USD	6.47	-2.02	-11.86

Figure 3: Portfolio Exposure and Factor PCTR



Stress Test Parameters

We take the ten largest risk contributing and risk diversifying factors and shock each of these in an effort to assess how the portfolio is expected to perform during crises which would result in -3%, -5%, and -7% returns in these factors over the course of the following month. Then we take the same factors and shock them in the opposite direction in an effort to glean how the portfolio is expected to perform during market exuberance which would result in +3%, +5%, and +7% returns. We stress one factor at a time, with the returns of the remaining factors calculated conditionally on this value. We use an exponentially weighted moving average (EWMA) to smooth the mean and correlation estimates. This process assumes that earlier observations should have less impact than the more recent observations on covariance and expected returns; the EWMA decay factor for the estimations is set to 0.94.

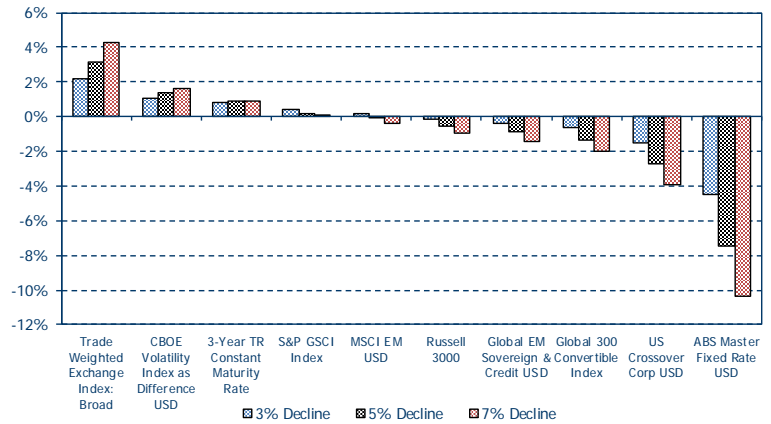
(-) Top 10 Factor Stress Tests: -3%, -5%, -7%

- A portfolio comprising the 30 largest hedge funds is expected to lose money if any one of 5 of 10 factors were to return -3%, -5% or -7% during the following month, *see figures 4 and 5*.
- The largest portfolio losses are expected to result from shocks in fixed income factors, particularly the *ABS Master Fixed Rate USD* and *US Crossover Corp USD*. Both factors are specific to the US domestic market and indicate portfolio exposure to investment grade fixed rate asset backed securities and BBB/BB rated corporate debt. While portfolio exposure and PCTR to the *US Crossover Corp USD* factor were 5th and 7th highest, respectively, under a stress scenario each of the 30 funds' exposure sensitivities to this factor would fluctuate, and in this case adversely affect the overall portfolio leading to the conclusion that this factor's declines would be the 2nd most damaging.
- The portfolio stands to benefit from negative shocks in the value of the US Dollar, declining US equity market volatility, and shocks in the value of the 3-Year Treasury Constant Maturity Rate. *Figures 4 and 5* display an inverse relationship between the returns of the portfolio and the *Trade Weighted Exchange Index: Broad*, *CBOE Volatility Index as Difference USD*, and *3-Year TR Constant Maturity Rate* factors.
- While negative portfolio returns are anticipated in the event some factors were to return -3%, -5%, or -7% during the following month, the expected negative returns for all but the *ABS Master Fixed Rate USD* factor are less than or about half the value of the modeled factor shocks (e.g.: *Global 300 Convertible Index* returns -7% but the expected portfolio return is only -2.03% and *US Crossover Corp USD* returns -3% but the portfolio return is -1.52%).

(+) Top 10 Factor Stress Tests: +3%, +5%, +7%

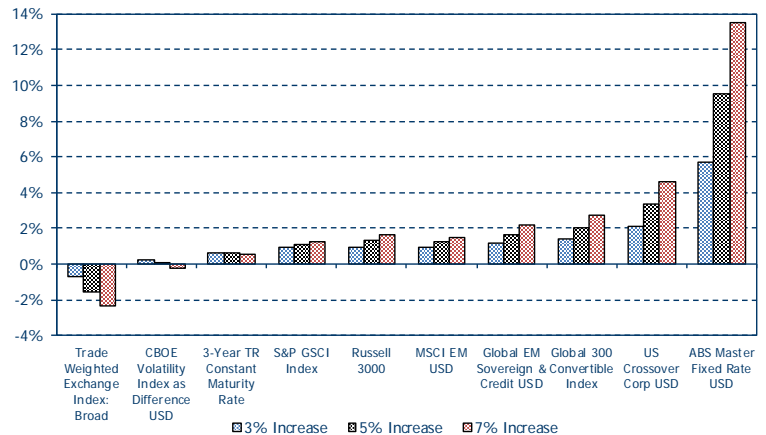
- A portfolio comprising the 30 largest hedge funds is expected to gain if any one of 8 of 10 factors were to return +3%, +5%, or +7% during the following month, *see figures 6 and 7*.
- A rise in the value of *ABS Master Fixed Rate USD* is expected to result in the highest portfolio returns, at a near 2-to-1 ratio (e.g.: *ABS Master Fixed Rate USD* returns 5% but the expected portfolio return is 9.51%).
- A rise in the value of the *Trade Weighted Exchange Index: Broad* is expected to result in the lowest—and in this case negative—portfolio returns.

Figures 4 and 5: (-) Stress Test Results for Top 10 Factors



Top 10 Factors	3% Decline	5% Decline	7% Decline
Trade Weighted Exchange Index: Broad	2.16%	3.18%	4.25%
CBOE Volatility Index as Difference USD	1.07%	1.35%	1.65%
3-Year TR Constant Maturity Rate	0.82%	0.88%	0.94%
S&P GSCI Index	0.39%	0.21%	0.03%
MSCI EM USD	0.17%	-0.10%	-0.38%
Russell 3000	-0.16%	-0.53%	-0.92%
Global EM Sovereign & Credit USD	-0.36%	-0.88%	-1.41%
Global 300 Convertible Index	-0.64%	-1.33%	-2.03%
US Crossover Corp USD	-1.53%	-2.73%	-3.92%
ABS Master Fixed Rate USD	-4.47%	-7.49%	-10.34%

Figures 6 and 7: (+) Stress Test Results for Top 10 Factors



Top 10 Factors	3% Increase	5% Increase	7% Increase
Trade Weighted Exchange Index: Broad	-0.66%	-1.54%	-2.38%
CBOE Volatility Index as Difference USD	0.26%	0.01%	-0.24%
3-Year TR Constant Maturity Rate	0.66%	0.61%	0.56%
S&P GSCI Index	0.92%	1.09%	1.26%
Russell 3000	0.95%	1.32%	1.67%
MSCI EM USD	0.96%	1.21%	1.47%
Global EM Sovereign & Credit USD	1.17%	1.67%	2.16%
Global 300 Convertible Index	1.40%	2.07%	2.73%
US Crossover Corp USD	2.12%	3.35%	4.59%
ABS Master Fixed Rate USD	5.71%	9.51%	13.54%

Conditional Stress Test

We provide some results from our conditional calculations for the top 10 factors, having stressed one factor at a time by -7% with the returns of the remaining factors calculated conditionally on this stressed value. Excluding the stressed factor values (shown in red), the conditionally calculated values for the remaining US factor model can be slightly dispersed (from -7.00% to 1.39% in the case of the *3-Year Treasury Constant Maturity Rate* factor returning -7%) to significantly dispersed (from -49.90% to 14.08% in the case of the *Global EM Sovereign & Credit USD* factor returning -7%). It is important to note that the impact of these factor results on the overall portfolio is dependent on the betas between factors and funds derived from multi-regressions. Furthermore, the U.S. Treasury Rate factors' values are dependent on movements in the rates, not price.

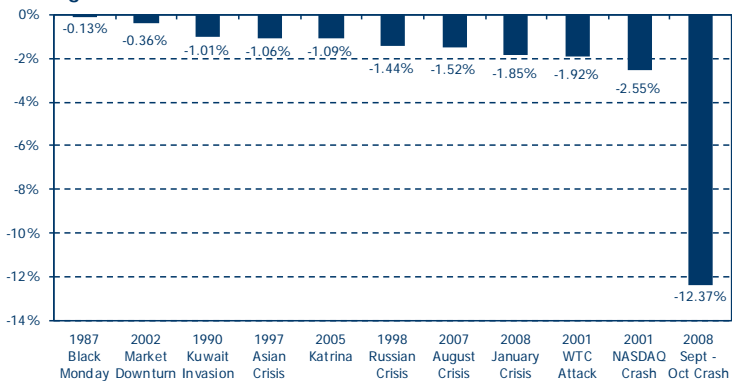
Figure 8: Conditionally calculated factor return values (in %) based on stress testing one factor at a time; column headers #1 - #5 correspond to the factors in the respective row with a -7.00 value

Factor Name	#1	#2	#3	#4	#5
3-Month Treasury Constant Maturity Rate	-28.47	-49.90	-19.20	-3.83	-47.72
3-Year Treasury Constant Maturity Rate	6.51	14.08	0.53	-7.00	3.95
20-Year Treasury Constant Maturity Rate	-3.15	-2.35	-4.73	-2.34	-8.50
ABS Master Fixed Rate USD	0.03	-0.20	0.14	0.28	0.07
CBOE Volatility Index as Difference USD	3.84	8.16	4.09	-0.17	8.81
CMBS Fixed Rate AAA Rated USD	-0.15	-0.69	0.12	0.54	-0.10
CMBS Fixed Rate BBB Rated USD	-0.69	-1.83	-0.15	1.07	-1.25
Citigroup High-Yield Market Index	-1.02	-2.85	-0.62	0.94	-2.20
Citigroup World Government Bond Index	-0.63	-1.90	-0.45	0.63	-0.48
Global 300 Convertible Index	-1.83	-3.88	-1.36	1.02	-4.20
Global Broad Mrkt Corp AAA Rated USD	-1.09	-2.64	-0.54	0.68	-1.09
Global Broad Mrkt Corp BBB Rated USD	-1.12	-3.22	-0.38	0.99	-1.44
Global EM Sovereign & Credit USD	-2.60	-7.00	-1.20	1.18	-3.34
MSCI EM USD	-7.00	-11.00	-2.57	0.88	-7.44
MSCI Small Minus Large US USD	-0.74	-0.65	-1.59	-0.16	-2.74
MSCI Value Minus Growth US USD	-0.01	-0.45	0.64	-0.20	0.71
Mortgage Master USD	0.08	-0.32	0.29	0.52	0.33
Russell 3000	-2.49	-5.37	-2.03	1.39	-7.00
Russell 3000 Moving Average Strategy USD	-1.35	-4.11	-2.59	-0.20	-1.88
S&P GSCI Crude Oil USD	-2.93	-6.93	-8.81	-0.36	-8.20
S&P GSCI Index	-2.96	-6.59	-7.00	-0.19	-6.53
Trade Weighted Exchange Index: Broad	2.00	3.82	1.54	-0.07	2.69
US Crossover Corp USD	-0.65	-2.32	-0.05	0.98	-1.00

Historical Stress Tests

We also perform stress tests with some historical scenarios and find that the portfolio is expected to lose money if any of the 11 stress tests were to occur. The worst expected portfolio return, if the *2008 Sept - Oct Crash* was to reoccur, is -12.37%, a figure nearly 3x more negative than the 30 largest fund portfolio produced at the end of Q4 2013. Yet there were slight improvements since then as well, with the portfolio's expected returns rising if the *1990 Kuwait Invasion* (+48bps), *1997 Asian Crisis* (+2bps), *2002 Market Downturn* (+12bps), and *2005 Katrina* (+14bps) events were to reoccur.

Figure 9: Historical Stress Test Results



Factor Model Used In This Report

Factor Name	Node	Daily Start Date	Monthly Start Date	Description
S&P GSCI Crude Oil USD	Commodity Risk	1/8/1987	1/6/1987	A sub-index of the S&P GSCI, this factor provides investors with a reliable and publicly available benchmark for investment performance in the crude oil commodity markets. This index measures the general price movements and inflation in the world economy. It is calculated primarily on a world production-weighted basis and is comprised of the principal physical commodities that are the subject of active, liquid futures markets.
S&P GSCI Index	Commodity Risk	1/6/1970	12/30/1969	The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. This factor is based on a strategy that buys the Russell 3000 if it is above its 12-month moving average level of sells if it is below. This is a momentum based factor for the broad US equities market.
MSCI EM USD	Equity Risk	1/2/2001	12/30/1987	The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. This factor is based on a strategy that buys the Russell 3000 if it is above its 12-month moving average level of sells if it is below. This is a momentum based factor for the broad US equities market.
Russell 3000	Equity Risk	1/3/1979	12/28/1978	The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. This factor is based on a strategy that buys the Russell 3000 if it is above its 12-month moving average level of sells if it is below. This is a momentum based factor for the broad US equities market.
Russell 3000 Moving Average Strategy USD	Equity Risk	1/3/1980	1/1/1980	The Russell 3000 Index measures the performance of the largest 3000 U.S. companies representing approximately 98% of the investable U.S. equity market. This factor is based on a strategy that buys the Russell 3000 if it is above its 12-month moving average level of sells if it is below. This is a momentum based factor for the broad US equities market.
ABS Master Fixed Rate USD	Fixed Income	1/3/1991	12/30/1990	The BofA Merrill Lynch US Fixed Rate Asset Backed Securities Index tracks the performance of US dollar denominated investment grade fixed rate asset backed securities publicly issued in the US domestic market. This index measures the performance of below investment grade debt issued by corporations domiciled in the United States or Canada. It includes cash-pay and deferred-interest securities. All bonds are publicly placed, have a fixed coupon, and are non-convertible.
Citigroup High-Yield Market Index	Fixed Income	11/2/2000	10/31/2000	The World Government Bond Index includes the 23 government bond markets of Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Malaysia, Mexico, the Netherlands, Norway, Poland, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States.
Citigroup World Government Bond Index	Fixed Income	1/5/1993	1/3/1993	The BofA Merrill Lynch US Fixed Rate CMBS Index tracks the performance of US dollar denominated investment grade fixed rate commercial mortgage backed securities publicly issued in the US domestic market.
CMBS Fixed Rate AAA Rated USD	Fixed Income	1/6/1998	12/30/1997	The BofA Merrill Lynch BBB US Fixed Rate CMBS Index is a subset of The BofA Merrill Lynch US Fixed Rate CMBS Index including all securities rated BBB1 through BBB3, inclusive.
CMBS Fixed Rate BBB Rated USD	Fixed Income	1/6/1998	12/30/1997	The BofA Merrill Lynch Global 300 Convertible Index is a global convertible index composed of companies representative of the market structure of countries in North America, Europe and the Asia/Pacific region.
Global 300 Convertible Index	Fixed Income	1/1/1999	12/30/1998	The BofA Merrill Lynch AAA Global Corporate Index is a subset of The BofA Merrill Lynch Global Corporate Index including all securities rated AAA.
Global Broad Mrkt Corp AAA Rated USD	Fixed Income	1/3/1997	12/30/1996	The BofA Merrill Lynch BBB Global Corporate Index is a subset of The BofA Merrill Lynch Global Corporate Index including all securities rated BBB1 through BBB3, inclusive.
Global Broad Mrkt Corp BBB Rated USD	Fixed Income	1/3/1997	12/30/1996	The BofA Merrill Lynch Global Emerging Markets Sovereign & Credit Index tracks the performance of USD and EUR denominated emerging market debt, including sovereign, quasi-government and corporate securities.
Global EM Sovereign & Credit USD	Fixed Income	1/5/1999	12/30/1998	The BofA Merrill Lynch US Mortgage Backed Securities Index tracks the performance of US dollar denominated fixed rate and hybrid residential mortgage pass-through securities publicly issued by US agencies in the US domestic market.
Mortgage Master USD	Fixed Income	4/4/1989	12/30/1975	The BofA Merrill Lynch US Crossover Corporate Index tracks the performance of US dollar denominated BBB and BB corporate debt publicly issued in the US domestic market.
US Crossover Corp USD	Fixed Income	1/4/1989	12/30/1988	A weighted average of the foreign exchange value of the U.S. dollar against the currencies of a broad group of major U.S. trading partners. Broad currency index includes the Euro Area, Canada, Japan, Mexico, China, United Kingdom, Taiwan, Korea, Singapore, Hong Kong, Malaysia, Brazil, Switzerland, Thailand, Philippines, Australia, Indonesia, India, Israel, Saudi Arabia, Russia, Sweden, Argentina, Venezuela, Chile and Colombia.
Trade Weighted Exchange Index: Broad	FX Risk	1/5/1995	1/3/1995	This index published by the Federal Reserve Board based on the average yield of a range of Treasury securities, all adjusted to the equivalent of a 3-month maturity.
3-Month Treasury Constant Maturity Rate	Interest Rate risk	1/5/1982	1/3/1982	This index published by the Federal Reserve Board based on the average yield of a range of Treasury securities, all adjusted to the equivalent of a 3-year maturity.
3-Year Treasury Constant Maturity Rate	Interest Rate risk	1/3/1969	1/1/1969	This index published by the Federal Reserve Board based on the average yield of a range of Treasury securities, all adjusted to the equivalent of a 20-year maturity.
20-Year Treasury Constant Maturity Rate	Interest Rate risk	10/5/1993	9/30/1993	This factor accounts for the spread in returns between small and large sized firms, based on the company's market capitalization in the specified region.
MSCI Small Minus Large US USD	Size	6/2/1992	5/28/1992	This factor accounts for the spread in returns between value and growth stocks in the specified region.
MSCI Value Minus Growth US USD	Style	6/2/1992	5/28/1992	This factor is designed for use when volatility modeling assumptions require changes in the VIX index levels to be computed as simple difference rather than as percentage or logarithmic value. A positive relationship indicates the manager is long volatility.
CBOE Volatility Index as Difference USD	Volatility	1/3/1990	1/1/1990	

COMPANY DESCRIPTION

eVestment provides a flexible suite of easy-to-use, cloud-based solutions to help global investors and their consultants select investment managers, enable asset managers to successfully market their funds worldwide and assist clients to identify and capitalize on global investment trends.

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