



Performance Risk Advisors

Summary Example:

Custom Risk Management Infrastructure
Multi-manager Hedge Fund

Kent M. Baur, CFA
Principal

Multiple Levels of Independent Risk Management

Custom Risk Management Infrastructure
Multi-manager Hedge Fund

- “ Chief Risk Officer is independent of portfolio managers
 - . Direct report to President and the Board of Directors

- “ Risks are measured and managed at multiple levels
 - . Each portfolio manager
 - . Total fund
 - . Chief Risk Officer
 - . Chief Compliance Officer
 - . Investment Committee
 - . Board Risk Committee

- “ Written policies and procedures to measure and monitor risks

- “ Every element of risk management meets or exceeds best practices as defined by The President’s Working Group on Financial Markets



Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support

Risk Management Framework

Custom Risk Management Infrastructure
Multi-manager Hedge Fund

Investment risks are measured using a variety of commercial and proprietary tools

- . Portfolio Managers – free to choose the risk model that fits their needs
- . Centralized – “common language” for analyzing risk across alpha sources

Risk information is applied in multiple ways

- . Insight – active dialogue between CRO and Portfolio Managers
- . Allocation – input for the Investment Committee
- . Oversight – information for the Board Risk Committee

Key Considerations	
What are the key sources of risk?	Daily analysis
How are they changing?	Time Series analysis
Are there unintended risks?	Dialogue with Portfolio Managers
Are we being compensated for risks?	Attribution analysis



Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support

Risk Management Framework

Custom Risk Management Infrastructure
Multi-manager Hedge Fund

Multiple Measures	Multiple Metrics
<ul style="list-style-type: none"> " \$ Exposure " Beta-Adjusted " Gross and Net 	<ul style="list-style-type: none"> " Asset, Country, Sector, Group and Industry " Beta, Capitalization and Style " Duration, Maturity and Rating " Leverage, Liquidity and Market Conditions
Ex-Ante Simulations	Ex-Post Analysis
<ul style="list-style-type: none"> " VaR – 95%, “a normal bad day” " Stress tests – Historic market shocks " Tracking Error (Longs vs. Shorts) 	<ul style="list-style-type: none"> " Attribution of returns " Volatility " Correlation to macro factors " Correlation to alpha sources
Cross-Sectional Analysis	Experience and Judgment
<ul style="list-style-type: none"> " Beta exposure within industry " Duration exposure within credit bands " Industry exposure within beta buckets 	<ul style="list-style-type: none"> " Art, not science " Understand pros and cons of each risk measure " “Mosaic” approach – multiple views of risk " Snapshots vs. Movies



Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support

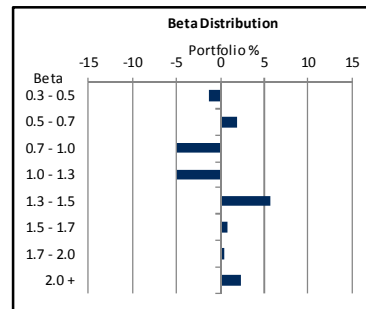
Sample Daily Risk Data

Custom Risk Management Infrastructure
Multi-manager Hedge Fund

VaR Breakdown	#Secs	%Port	VaR	VaR (%)
Totals	659	100	152,626	0.30
Consumer Staples	35	-0.01	15,061	
Energy	70	-0.05	43,245	
Health Care	49	0.14	21,544	
Financials	198	-0.60	69,914	
Materials	39	-0.51	29,558	
Consumer Discretionary	89	2.44	78,302	
Information Technology	58	-1.90	34,552	
Industrials	71	3.64	65,158	
Telecommunication Services	8	-0.73	13,007	

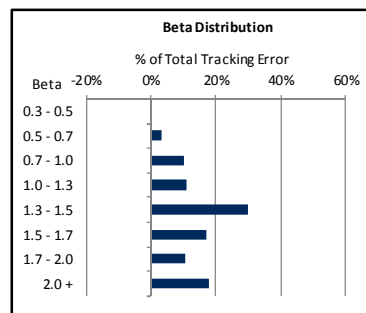
Stress Tests	%Ret(P)
Black Monday	-1.88
9/11	-0.68
Russian Ruble Devalues	-0.65
Flight to Quality	-0.45

Tracking Error by Sector	% Long	% Short	% Net	Tr Error	% of T.E.
Totals	100	100	0	2.3	
Financials	31.9	32.8	-0.9	0.8	36%
Consumer Discretionary	12.7	10.5	2.2	0.6	24%
Energy	12.7	12.9	-0.2	0.3	14%
Industrials	10.5	7.1	3.4	0.3	14%
Materials	5.0	5.6	-0.5	0.1	4%
Information Technology	7.2	9.1	-1.9	0.1	4%
Consumer Staples	5.2	5.2	-0.1	0.1	3%
Health Care	6.3	6.2	0.1	0.1	2%
Telecommunication Services	0.8	1.6	-0.7	0.0	0%
Utilities	3.81	5.12	-1.3	0.0	0%
Not Classified	3.79	3.92	-0.13	0.0	-1%



Tracking Error - Top Groups		
Oil Comp-Explor&Prodtn		0.16
Hotels&Motels		0.14
REITS-Apartments		0.13
REITS-Diversified		0.13
Invest Mgmt/Advis Serv		0.12
Real Estate Oper/Develop		0.10
Retail-Regnl Dept Store		0.10
Metal-Iron		0.09
Publishing-Newspapers		0.09
Paper&Related Products		0.09
49%	Total	1.15

Tracking Error by Beta	% Long	% Short	% Net	Tr Error	% of T.E.
Totals	100.0	100.0	0.0	2.3	
0.3 - 0.5	0.4	1.7	-1.2	0.0	0%
0.5 - 0.7	9.3	7.4	1.9	0.1	3%
0.7 - 1.0	25.0	30.0	-5.0	0.2	10%
1.0 - 1.3	25.1	30.1	-5.0	0.3	11%
1.3 - 1.5	18.0	12.3	5.7	0.7	30%
1.5 - 1.7	10.2	9.5	0.8	0.4	17%
1.7 - 2.0	6.3	5.8	0.5	0.3	11%
2.0 +	5.7	3.4	2.3	0.4	18%
					0%



Tracking Error - Top Names		
HOT	STARWOOD HOTELS	0.11
BPO	BROOKFIELD PROP	0.10
CLF	CLIFFS NATURAL R	0.09
CBL	CBL & ASSOC PROP	0.08
DRE	DUKE REALTY CORP	0.08
GCI	GANNETT CO	0.07
M	MACY'S INC	0.07
AVY	AVERY DENNISON	0.07
WHR	WHIRLPOOL CORP	0.07
CMI	CUMMINS INC	0.07
35%	Total	0.81



Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support

Sample Daily Attribution Data

Custom Risk Management Infrastructure
Multi-manager Hedge Fund

Current P/B	2.3
Value Multiplier	0.7
Growth Multiplier	1.3

Large >=	8
Small <=	2

Exposure

		Growth	Core	Value	Total
Large	Long	21.9%	20.4%	18.6%	60.9%
	Short	31.4%	24.9%	12.0%	68.4%
	Net	-9.5%	-4.5%	6.5%	-7.5%
Mid	Long	6.0%	16.5%	11.7%	34.2%
	Short	6.7%	10.3%	9.0%	26.0%
	Net	-0.7%	6.2%	2.7%	8.2%
Small	Long	1.1%	5.1%	4.1%	10.3%
	Short	1.2%	3.3%	4.9%	9.5%
	Net	-0.1%	1.8%	-0.8%	0.8%
Total	Long	29.0%	42.1%	34.4%	1.05
	Short	39.3%	38.6%	26.0%	1.04
	Net	-10.4%	3.5%	8.4%	0.02

Beta Calculations

	2Y W A	2Y W R	GM D A	GM D R
Beta	0.083	0.116	0.06	0.07

		Growth	Core	Value	Total
Large	Long	0.24	0.22	0.23	0.69
	Short	0.34	0.27	0.15	0.76
	Net	-0.10	-0.05	0.08	-0.07
Mid	Long	0.07	0.23	0.15	0.46
	Short	0.08	0.13	0.12	0.34
	Net	0.00	0.10	0.03	0.12
Small	Long	0.02	0.05	0.07	0.13
	Short	0.01	0.05	0.07	0.13
	Net	0.00	0.00	0.00	0.01
Total	Long	0.33	0.50	0.45	1.28
	Short	0.43	0.45	0.34	1.22
	Net	-0.10	0.05	0.11	0.06

Portfolio Leverage	
Long	Short
1.05	-1.04

Wtd. Average Mkt Cap (\$B)	
Long	Short
21.44	-27.70

Dividend Yield	
Long	Short
2.13	2.59

# of Securities	
Long	Short
407	404

Portfolio Performance	
Long	Short
-0.33	0.45

Beta	
Long	Short
1.28	-1.22

R Squared	
Long	Short
0.45	0.44

Std Dev of Error Term	
Long	Short
3.96	-3.78

Industry Beta-Adjusted Sector Attribution					
	Net Beta	Indx Return	Exp Return Beta*Index	Port Return	Selection
Energy	0.00	-1.13	0.00	0.07	0.07
Materials	-0.01	-1.05	0.01	0.03	0.02
Capital Goods	0.01	-0.44	-0.01	0.02	0.03
Commercial Services	0.01	-0.47	-0.01	0.00	0.01
Transportation	0.01	0.22	0.00	0.01	0.01
Industrials	0.04		-0.01	0.04	0.05
Autos	0.00	0.17	0.00	0.00	0.00
Durables	-0.01	-0.70	0.00	-0.01	-0.02
Services	0.00	0.21	0.00	0.01	0.01
Media	0.00	0.46	0.00	-0.01	-0.01
Retailing	0.04	0.04	0.00	0.00	0.00
Consumer Discretionary	0.04		0.01	-0.01	-0.02
Food and Staples Retailing	-0.01	0.32	0.00	0.00	0.00
Food, Beverage and Tobacco	0.00	0.29	0.00	0.01	0.01
Household Products	0.01	-0.99	-0.01	-0.01	0.00
Consumer Staples	0.00	0.00	-0.01	0.00	0.01
Healthcare Equip & Services	-0.02	-0.32	0.01	0.01	0.00
Pharma and Biotech	0.01	0.09	0.00	0.00	0.00
Healthcare	0.00		0.01	0.01	0.00
Banks	-0.02	-0.38	0.01	-0.01	-0.02
Diversified Financials	0.03	-0.34	-0.01	-0.05	-0.04
Insurance	0.02	0.25	0.01	0.01	0.00
Real Estate	-0.02	-0.19	0.00	0.05	0.05
Financials	0.01		0.01	0.00	-0.01
Software and Services	-0.01	-0.96	0.01	-0.01	-0.02
Hardware	-0.02	-0.40	0.01	-0.02	-0.03
Semiconductors	0.01	-0.50	-0.01	0.00	0.01
Information Technology	-0.01		0.01	-0.02	-0.03
Telecom Services	-0.01	-0.26	0.00	0.01	0.00
Utilities	0.00	0.34	0.00	-0.01	-0.01

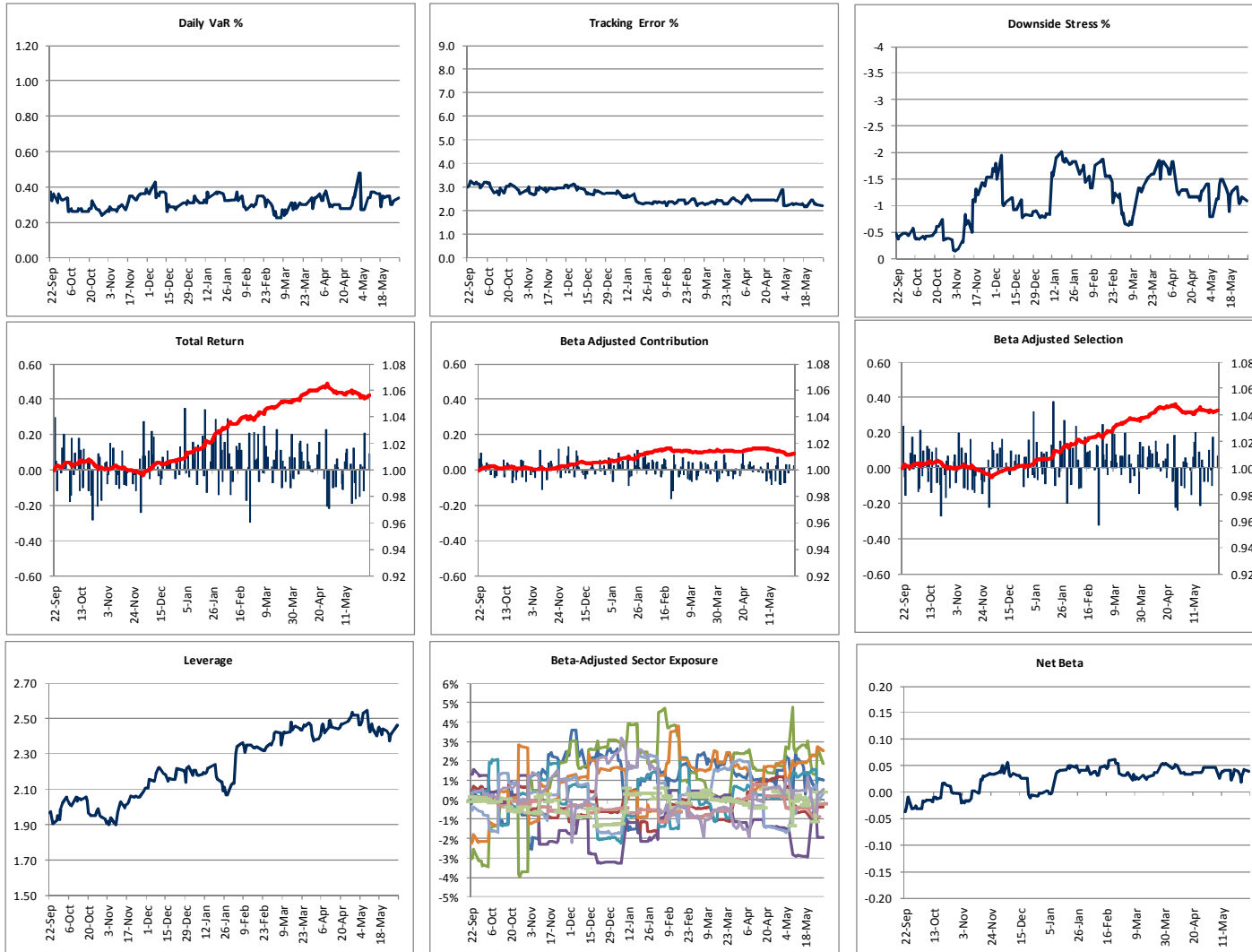


Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support

Sample Summary Time Series

Custom Risk Management Infrastructure Multi-manager Hedge Fund



Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support

Contact



Kent M. Baur, CFA

925-855-0464 (Office)

925-984-4647 (Cell)

www.PerformanceRiskAdvisors.com



Performance Risk Advisors

Risk Management, Investment Oversight & Distribution Support