KlarityRisk

A Comprehensive Risk Management Platform

APX Integrated Risk and Performance Reports

For APX Users

FINVENT
SOFTWARE SOLUTIONS

APX Report: Performance History vs. Risk Exposure

The report **runs directly from APX** and complements the APX Client Reporting function as it allows the portfolio manager:

- To **identify and measure the relevant risks** taken in order to achieve a certain level of portfolio performance
- With access to the **full KlarityRisk functionality**, to **configure** the time periods under study into any data frequency that is useful for the portfolio's risk/return assessment.

YOUR COMPANY

Diversified Portfolio

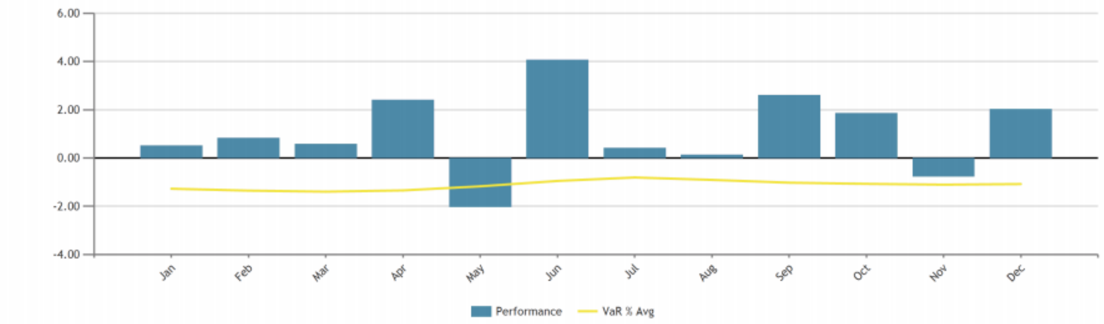
Performance History vs Risk Exposure

Net of Fees | us

31/12/2018 - 31/12/2019

Time Period			Return % Per Period	Monthly VaR % Per Period	Avg. Daily VaR % Per Period
12/31/2018	to	1/31/2019	0.52	4.16	1.27
1/31/2019	to	2/28/2019	0.84	4.33	1.35
2/28/2019	to	3/31/2019	0.58	4.24	1.39
3/31/2019	to	4/30/2019	2.41	4.23	1.34
4/30/2019	to	5/31/2019	-2.03	4.22	1.17
5/31/2019	to	6/30/2019	4.06	4.09	0.95
6/30/2019	to	7/31/2019	0.42	4.34	0.81
7/31/2019	to	8/31/2019	0.13	4.50	0.91
8/31/2019	to	9/30/2019	2.61	4.76	1.02
9/30/2019	to	10/31/2019	1.86	4.95	1.07
10/31/2019	to	11/30/2019	-0.77	4.87	1.10
11/30/2019	to	12/31/2019	2.02	4.74	1.08

Historical Performance vs Risk Exposure



- Monthly VaR% Per Period: The monthly portfolio VaR at a 99% confidence level as estimated at the beginning of each period
- Avg. Daily VaR% Per Period: The average daily portfolio VaR at a 99% confidence level during each period

APX Report: Contribution Analysis vs. Risk Exposure

The report is based on the APX Contribution Analytics screen and provides the portfolio manager with the ability to:

- View **a set of risk measures** in order to assess the return/risk characteristics of the deployed investment strategy
- Obtain a risk view **at the portfolio level** as well as a **risk contribution analysis on the asset class, sector and individual position level**.

YOUR COMPANY | Diversified Portfolio

Performance vs Risk Contribution

Net of Fees | US Dollar
12/31/2018 - 12/31/2019

Performance Summary

Portfolio Return	13.24

Largest Weights

Industry Sector	Avg Wgt	Return	Return Contrib	Avg CVaR
Financials	55.32	16.76	9.14	63.94
Information Technology	12.77	5.98	0.72	19.72
Health Care	12.77	8.00	1.05	1.77
Utilities	5.96	18.32	1.07	4.12
Energy	5.30	6.71	0.38	8.10
Total	**92.12**	**12.36**	**12.36**	**97.65**

Industry Sector

Top Performers	Avg Wgt	Return	Return Contrib	Avg CVaR
Utilities	5.96	18.32	1.07	4.12
Financials	55.32	16.76	9.14	63.94
Consumer Discretionary	5.16	13.20	0.68	
Health Care	12.77	8.00	1.05	1.77
Real Estate	2.54	7.04	0.17	3.30
Total	**81.75**	**12.11**	**12.11**	**73.13**

Bottom Performers	Avg Wgt	Return	Return Contrib	Avg CVaR
Not Applicable	0.17	0.54	0.03	
Information Technology	12.77	5.98	0.72	19.72
Energy	5.30	6.71	0.38	8.10
Real Estate	2.54	7.04	0.17	3.30
Health Care	12.77	8.00	1.05	1.77
Total	**33.56**	**2.35**	**2.35**	**32.89**

Top Contributors	Avg Wgt	Return	Return Contrib	Avg CVaR
Financials	55.32	16.76	9.14	63.94
Utilities	5.96	18.32	1.07	4.12
Health Care	12.77	8.00	1.05	1.77
Information Technology	12.77	5.98	0.72	19.72
Consumer Discretionary	5.16	13.20	0.68	
Total	**91.98**	**12.66**	**12.66**	**89.55**

Bottom Contributors	Avg Wgt	Return	Return Contrib	Avg CVaR
Not Applicable	0.17	0.54	0.03	
Real Estate	2.54	7.04	0.17	3.30
Energy	5.30	6.71	0.38	8.10
Consumer Discretionary	5.16	13.20	0.68	
Information Technology	12.77	5.98	0.72	19.72
Total	**25.95**	**1.99**	**1.99**	**31.12**

- **Avg CVaR: The average daily CVaR at a 99% confidence level during the performance measurement period**
- **All metrics in the above tables are expressed in percentage terms**

APX Report: Contribution Analysis vs. Risk Exposure

- A **detailed enhancement** of the previous report that allows the portfolio manager to identify the **risk-adjusted performance** figures by **each individual segment** of the portfolio

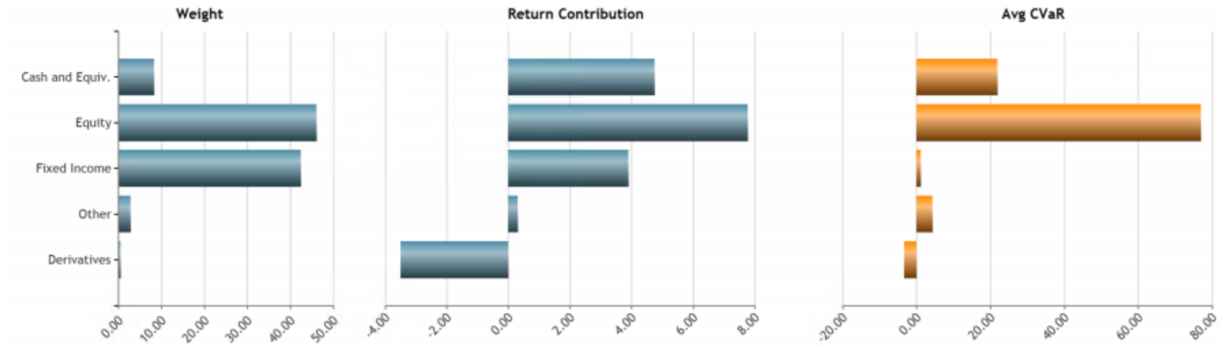
- This particular screen displays Performance vs Risk Contribution **by Asset Class and Risk Country**; however, with the **full KlarityRisk functionality** the user can drill down to the security level for a thorough portfolio analysis.

YOUR COMPANY | Diversified Portfolio

Performance vs Risk Contribution

Net of Fees | US Dollar
12/31/2018 - 12/31/2019

	Portfolio			
Classification	Avg Wgt	Return	Return Contrib	Avg. CVaR
Cash and Equiv.	**8.24**	**72.88**	**4.75**	**21.86**
Europe	0.06	-2.11	0.00	0.00
United Kingdom	0.11	4.32	0.03	0.00
USA	8.08	73.79	4.72	21.86
Derivatives	**0.45**	**-99.96**	**-3.50**	**-3.32**
USA	0.45	-99.96	-3.50	-3.32
Equity	**46.06**	**17.21**	**7.77**	**76.96**
Germany	0.41	15.12	0.06	0.37
Japan	2.07	13.15	0.27	2.32
United Kingdom	1.38	7.14	0.09	1.31
USA	42.20	17.83	7.35	72.95
Fixed Income	**42.49**	**9.06**	**3.91**	**1.17**
Canada	5.19	13.15	0.68	0.00
Europe	0.60	-2.68	-0.02	0.00
France	6.88	0.89	0.05	0.84
Germany	2.28	-2.44	-0.06	0.28
Japan	0.01	3.09	0.00	0.00
United Kingdom	5.47	5.63	0.30	0.06
USA	22.07	13.39	2.95	0.00
Other	**2.76**	**10.77**	**0.30**	**4.29**
USA	2.76	10.77	0.30	4.29
Asset Class Total	**100.00**	**13.24**	**13.24**	**100.00**



- **Avg CVaR: The average daily CVaR at a 99% confidence level during the performance measurement period**
- **All metrics in the above table are expressed in percentage terms**

APX Report: Portfolio Diversification vs. Risk Exposure

The report is an addition to the APX Portfolio Diversification function and enables the manager to:

- Identify and Monitor how a portfolio's risk exposure is **distributed among its various allocated asset classes**
- View this **risk breakdown** in conjunction with the portfolio weighted exposures by asset class
- With the **full KlarityRisk functionality** the user can identify the **risk contribution** by several classifications including **Industry Sector/Group, Risk Country, and any custom classification existing in APX**.

YOUR COMPANY

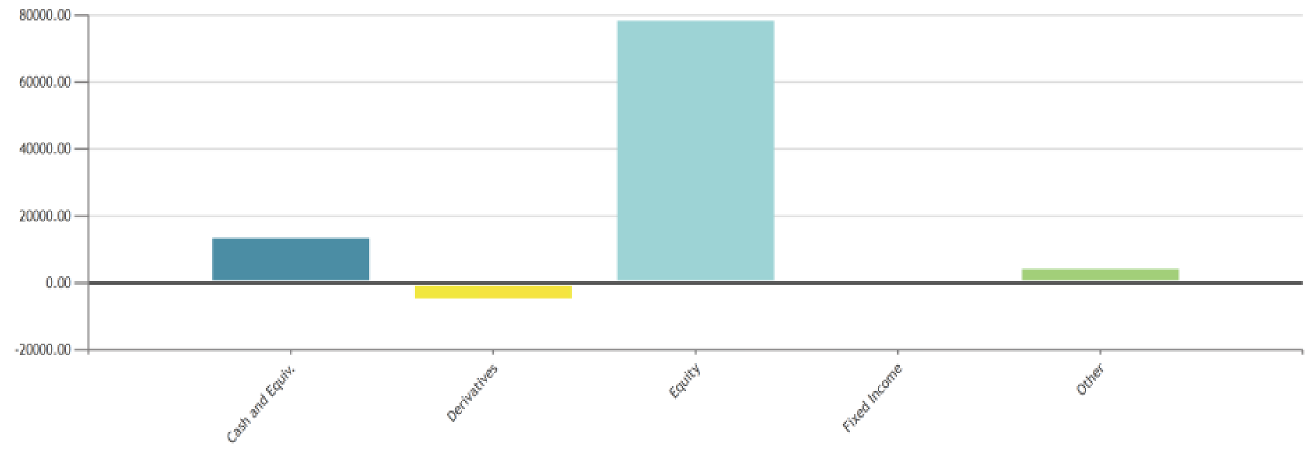
Diversified Portfolio

Portfolio Diversification vs Risk Exposure

US Dollar
12/31/2018

Code	Asset Class	Pct.	Market Value	CVaR
c	Cash and Equiv.	6.39	508,205.39	14,297.96
d	Derivatives	3.31	263,578.00	-5,555.15
e	Equity	44.40	3,530,926.27	79,163.66
f	Fixed Income	43.22	3,437,022.45	1,200.98
o	Other	2.67	212,684.45	5,054.12
	Total	**100.00**	**7,952,416.56**	**94,161.56**

CVaR By Asset Class



- **The CVaR is estimated at a 99% confidence level for the report's execution date**

APX Report: Assets Under Management with Risk Figures

The report is an enhancement of the APX Assets Under Management analysis and provides:

- An overview of how decisions made on **multi-asset class allocation for multiple portfolios** affect these portfolios' **total exposure to market risk**
- A risk figure for the **consolidated portfolio group**, with respect to the **cross-correlations** between the individual portfolios, thus any **return benefits achieved** via the use of diverse investment strategies.

YOUR COMPANY

Assets Under Management with Risk Figures

US Dollar
12/31/2019

Portfolio	Cash and Equiv.		Equity		Fixed Income		Other		Derivatives		Total	
	Market Value	VaR	Market Value	VaR	Market Value	VaR	Market Value	VaR	Market Value	VaR	Market Value	VaR
Capital Growth	0.00		4,389,696.63	67,309.75	52,277.52	-17.01	235,597.05	2,966.30	150.00	0.00	4,677,721.20	70,259.04
Core Balanced	0.00		10,614,363.35	144,488.55	5,726.43	-0.73	0.00		25.00	0.00	10,620,114.79	144,487.82
Diversified Alternatives	887,424.73	23,959.03	4,147,445.27	65,235.75	33,245.80	-20.95	235,597.05	3,180.23	100.00	0.00	5,303,812.86	92,354.06
Inflation Protected	0.00		7,127,881.97	123,693.69	33,444.68	-34.23	290,308.59	2,869.68	100.00	0.00	7,451,735.23	126,529.14
Min Vol Equity	0.00		7,157,570.96	117,029.59	0.00		0.00		401.90	-0.01	7,157,972.86	117,029.58
Min Vol Equity USA	20,158.28		5,916,934.64	98,594.35	18,132.21	-6.22	0.00		401.90	-0.01	5,955,627.03	98,588.12
Moderate Growth	0.00		9,778,941.19	145,682.62	19,139.50	-9.68	0.00		50.00	0.00	9,798,130.69	145,672.94
TOTAL	**907,583.01**	**18,526.33**	**49,132,834.02**	**727,670.84**	**161,966.14**	**-19.75**	**761,502.69**	**8,290.30**	**1,228.80**	**-0.02**	**50,965,114.66**	**754,467.70**

- **The VaR is estimated at a 99% confidence level for the report's execution date**

KlarityRisk Report: Stress-Testing vs. Historical Crises

- KlarityRisk enables the user to simulate the change of value of a given portfolio **against a wide selection of economic, market and geopolitical conditions that occurred in past major crises**.
- These **predefined** Historical Crises Scenarios can also be **configured if** one has access to the **full KlarityRIsk platform**, giving the user the flexibility to perform **tailored stress-tests** based on the portfolio's requirements.

YOUR COMPANY

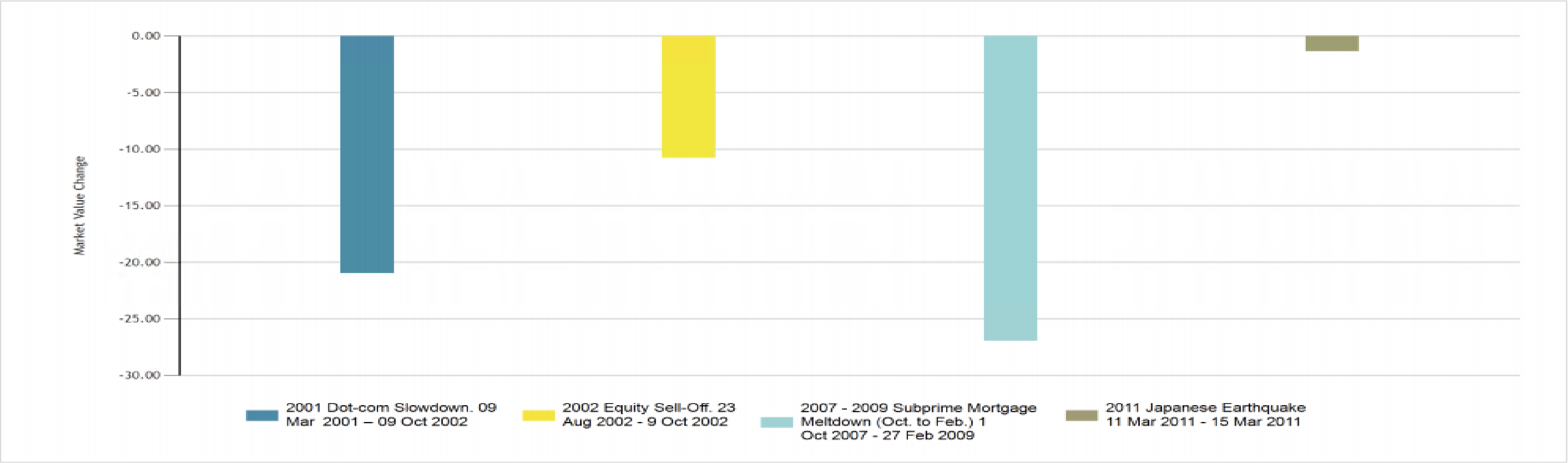
Portfolio: DiversifiedPortfolio
Evaluation Date(s): 12/31/2019

Stress Testing Against Past Crises Scenario

Profile: Stress-Test-Predictive
Evaluation Currency: us - US Dollar

2001 Dot-com Slowdown. 09 Mar 2001 - 09 Oct 2002	2002 Equity Sell-Off. 23 Aug 2002 - 9 Oct 2002	2007 - 2009 Subprime Mortgage Meltdown (Oct. to Feb.) 1 Oct 2007 - 27 Feb 2009	2011 Japanese Earthquake 11 Mar 2011 - 15 Mar 2011
-20.9726%	-10.7941%	-26.9575%	-1.3357%

Market Value Change %



Notes & Terminology

Value at Risk (VaR): Estimates the **maximum potential loss** of a portfolio, over a certain period of time with a given confidence level.

Component VaR (CVaR): Defines the **contribution** of a certain portfolio component to the total portfolio VaR.

Note

All risk metrics appeared on the reports are calculated using the Monte Carlo Simulation method.

The list below provides an overview of the **model configuration**:

- Full Revaluation of instruments (where applicable)
- VaR Confidence Level: 99%
- Number of Simulations: 10,000
- Volatility Smoothing Method: Simple Moving Average.

BEST TECHNOLOGY SOLUTION
(SMALL TO MEDIUM)

For more information on KlarityRisk, please contact us on:
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