Better portfolio decisions.

Bloomberg Professional Services

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Portfolio & Risk Analytics

Bloomberg Terminal

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Take control of the analytics, data & news that impact your portfolio.

Bloomberg's Portfolio & Risk Analytics solution helps portfolio managers achieve their objectives by providing unmatched transparency into their portfolio's performance, characteristics, risk and more.

From one location, a series of powerful, integrated equity and fixed income tools deliver consistent insight, enabling you to create and execute differentiating investment strategies.



Introducing Bloomberg Portfolio & Risk Analytics.

PORT <GO> – Powering your portfolio management & risk strategies

As a portfolio manager, your performance depends on various factors. You must manage and anticipate changes in complex markets every day, plan for every possibility and execute accordingly. You also need a flexible plan for responding to economic, financial and political changes. The challenges have never been greater.

Bloomberg's Portfolio & Risk Analytics solution for investment professionals empowers you with the tools required to successfully implement your portfolio investment and risk management strategies. Our platform will help you make quicker, more-informed decisions and enable you to measure market-related and security-specific risk exposures for your portfolios.

At Bloomberg, we are committed to continuously adding greater clarity to your investment decision making and to ensuring that you feel completely confident in these critical decisions. Our Portfolio & Risk Analytics solution is fully integrated with the Bloomberg Terminal[®] – at no additional fee – providing unparalleled access to the broad range of sophisticated tools required by today's asset managers.



2

Active portfolio management solution

Analyze your portfolio's historical performance.

Bloomberg's Portfolio & Risk Analytics solution gives you the ability to analyze the historical performance of your equity, fixed income or multi-asset portfolio on an absolute basis or relative to a benchmark. You can identify the sources of your portfolio's absolute or excess return by asset class, sector, geographic region, a custom classification and even based on Bloomberg's multi-factor risk model.



PORT <GO> Performance

See how your portfolio has performed over time on an absolute basis or relative to your benchmark.

Historical performance analysis

- Use the Performance tab to examine the historical cumulative performance of your portfolio relative to its benchmark.
- Easily change the analysis time frame to home in on a specific sub-period or visualize long-term performance patterns.
- Examine standard deviation, beta, realized tracking error and dozens of other commonly used risk/return measures.
- Gain insight into the drivers of historical risk and performance.



Performance attribution

- Analyze your active portfolio performance results by examining allocation effect, security selection effect and currency effect.
- Break down your portfolio by asset class, sector, geographic region, duration, credit quality or any other custom classification.
- Calculate the impact of yield curve movements and spread effect on your fixed income portfolio's historical performance relative to its benchmark.
- Drill down for full transparency into the data used to calculate the returns, such as capital events, accrued interest and cash flows.

11) View	 12) Action 	ns 🐐 13) Sett	tings 🔹 14) Trade Simulat	tion 🔹			Po	ortfolio & Risk i	Analytics
Holdings	Characteris	tics Tracki	ng Error/Volatility VaR S	Scenarios	Performance	Attri	bution	Intraday	
Main View	Summary			Concernant Contraction		-			
BBG_US_E	QUITY_PORT	VS S&P 50	DO INDEX by GICS Sectors	🔹 in l	USD 🔹 Time	Prior 🔹	12/31	/16 🗖 - 12/	31/17 🗖
Model To	tal Return	Unit Perc	centage						
Return Su	immary		Active Return Attribution	on Summa	iry				
Portfolio	Return	21.23	Active Ret	urn	-0.60 C	urrency		0.00	
Benchman	rk Return	21.83	Allocation		1.13 L	everage		0.00	
Active Re	turn	+0.60	Selection						
Excess Re	turn Summary	/ Graph							
Legacy/	Default GICS Se	ctors							
Port Wgt	Bench Wgt	Wgt Diff		Total At	tr Currency	Alloc	ation	Selection	Leverage
21.52	14.47	7.05	Financials	-0.04	0.0	0	0.11	-0.15	0.00
6.10	2.89	3.21	Materials	0.06	0.0	0	0.03	0.03	0.00
12.89	10.16	2.73	Industrials	-1.15	0.0	0	-0.02	-1.14	0.00
24.31	22.79	1.52	Information Technology	-0.04	0.0	0	0.19	-0.23	0.00
9.74	8.85	0.89	Consumer Staples	0.43	0.0	0	-0.09	0.52	0.00
3.41	3.17	0.25	Utilities	-0.12	0.0	0	-0.04	-0.08	0.00
6.39	6.26	0.13	Energy	0.25	0.0	0	0.04	0.21	0.00
0.00	0.00	0.00	Not Classified	0.01	0.0	0	0.01	0.00	0.00
10.75	12.16	-1.41	Consumer Discretionary		0.0	0	-0.01	-1.40	0.00
0.00	2.21	-2.21	Telecommunication Services	0.60	0.0	0	0.60	0.00	0.00
0.00	2.92	-2.92	Real Estate	0.34	0.0	0	0.34	_ 0.00	0.00
4.89	14.12	-9.22	Health Care	0.48	0.0	0	-0.04	0.52	0.00
122									

PORT <GO> Performance attribution

Understand the sources of your portfolio's historical performance based on sector and security bets.

Factor-based performance attribution

- Explain portfolio performance in terms consistent with your ex-ante risk management approach by leveraging Bloomberg's multi-factor risk models, which are fully integrated with historical performance attribution.
- Security returns are broken down into the portion coming from exposure to risk model factors, such as industry, country, style, currency, curve and spread, and the portion coming from selection effect.

11) View 1	2) Actions	 13) Settin 	gs ▼ 14) Ti	ade Simulat	tion 🔻		Po	rtfolio & Risk	Analytics
Holdings C	haracteristic	s Tracking	Error/Volatilit	y VaR	Scenarios	Performance	Attribution	Intraday	A
Main View S	ummary T	rends				-			
BBG BALANCED	PORTE	VS BLENDED	70/3 by	Asset Type	🔹 in US	D 🔹 Time P	rior 12/31	/16 🗂 - 12	/31/17 📫
Model Factor-	Based	Unit Percer	itage R	isk Model B	loomberg Ris	sk ·			
	Retur	n (from holdi	ngs)		Fac	tor Group Retu	irn Contributio	o n	A
Item To	otal Return	Factor	Selection Effe	Equity	Fixed Incom	e Currency	Commodity	Alternative	Time Return
Portfolio		10.33	0.46	6.80	1.28	0.00	0.00	0.00	2.24
Benchmark	7.52	6.00	1.53	5.77	0.23	0.00	0.00	0.00	0.00
Activo	2.26	1 22	-1 07	1 00	1 00	0.00	0.00	0.00	7.74
Click a number	r to see bre	akdown							
2.5 2 1.5 9 0.5 -1 -1.5							· Relu		
Ec	luity	Fixed Income	Currenc	У	Commodity	Alternative	Time Re	turn Se	lection Effect
Factor Contrib	utors Top	6 Factor Con	tributors						
Factor		Active Exp	Factor Rtn	Factor Cont	Factor		Active Exp	Factor Rtn	Factor Cont
1. NorthAm: US	5 Market	0.07	20.68	1.26	4 USD Cor	p:Banks	0.27	-0.66	0.20
2 Style: US Si		0.15			5. USD Cor	p:Media	0.35		0.18
3. USD Sov: So	ov Spread	1.29	-0.19	0.27	& USD YC:	1Y KR Sov	-0.16	0.92	0.16

PORT <GO> Performance attribution

Analyze the sources of your portfolio's historical performance based on Bloomberg's multi-factor risk models.

Transactions-based attribution

- Quickly identify which trades contributed to/detracted from total return.
- Isolate transaction returns at the instrument level.
- Analyze transaction effect, which quantifies the contribution to return attributable to historical trades.

11) View ·	12) Actions	· 13) Settings	• 14) Trade Simulation •			Portfolio & Ris	k Analytics
Holdings	Characterist	ics Tracking E	rror/Volatility VaR Scenar	rios Perforn	nance Attribut	ion	
Main View	Summary						
TRANSACTIO	NS PORTE	vs ISHARES MS	CI • by GICS Sectors • in	USD 🔹 Tim	e Custo · 02/2	28/18 🗖 - 04	4/05/18 🖿
Model Total	l Return	Unit Percenta					
Return Sum	mary		Active Return Attribution Sun	nmary			
Portfolio Re	eturn		Active Return	-15.60	Currency	0.03	
Benchmark	Return		Allocation		Transactions		
Active Retu	Irn	-15.58	Selection	-2.54			
Excess Retu	Irn Summary	Graph					
Legacy/De	efault GICS Se	ectors					
Port Wgt	Bench Wgt	Wgt Diff		Total Attr	Allocation	Selection	Currency
73.50	19.01	54.49	Information Technology	-1.1	0 -0.57	-0.52	-0.01
23.22	5.16	18.07	Materials	-1.0	1 -0.02	-0.93	0.00
0.63	0.43	0.19	Not Classified	-12.4	0.00	-0.01	0.00
0.00	0.00	0.00	Offset Cash	0.0	0.00	0.00	0.00
0.00	2.78	-2.78	Utilities	-0.1	4 -0.14	0.00	0.00
0.00	2.88	-2.88	Telecommunication Services	-0.0	2 -0.02	0.00	0.00
0.00	2.99	-2.99	Real Estate	-0.0	9 -0.10	0.00	0.01
0.00	6.05	-6.05	Energy	-0.2	4 -0.23	0.00	-0.01
0.66	8.23	-7.57	Consumer Staples	-0.3	6 -0.17	-0.19	0.00
1.98	12.23	-10.25	Consumer Discretionary	-0.5	9 0.29	-0.89	0.01
0.00	10.75	-10.75	Industrials	0.0	5 0.04	0.00	0.01
0.00	10.79	-10.79	Health Care	-0.0	2 -0.03	0.00	0.01
0.00	18.69	-18.69	Financials	0.3	4 0.32	0.00	0.02

PORT <GO> Transactions-based attribution

Understand how your transactions and transacted price levels impacted the portfolio's total return over a historical time period.

Monitor today's performance & news in real time.

With PORT <GO> you can monitor the intraday performance of your equity, fixed income or multi-asset portfolio in real time as well as quickly access the news that is most impacting your portfolio today. Immediately identify today's top and bottom return contributors. Keep track of your portfolio's performance even when you are out of the office by running Bloomberg Anywhere* on your mobile device.

11) Vi	ew 12) Actions 13) Settings	14) Trade	Simulat	ion 🔹			Po	rtfolio & Ris	k Analytics
Holdin	gs Characteristics Tracking Error	/Volatility	VaR	Scenarios	Perform	mance A	ttribution	Intraday	
Main V	/iew Top Holdings				1 - 22				
STRATE	GIC GROWTH VS SPX	by GIC	5 Sectors	🔹 in U	SD 🔹				
Risk M	odel Electronic de Unit Bas	is Points	EQ Pri	ces Prim	ary				
Nar	ne			% Wgt			Tot Rtn		-
		Port	Port	Bmrk	+/-	Port	Bmrk	+/-	Port Bn
٩		TOIL	TOIL	Dittirk		TOTE	BIIII K		Port Bri
al b	STRATEGIC GROWTH	36	100.00	100.00	0.00	-14.12	-5.94	-8.18	-14.12 -5
	Consumer Discretionary		15.06	12.61	2.45	14.57	-20.06	34.63	2.19 -2
4	E Consumer Staples		11:61	7.83	3.78				-1.10 -5
	🗉 Energy		5.16	6.01	-0.85	-267.79	44.01	-311.80	-14.18 2.(
2	🗉 Financials		26.57	14.88	11.69	-8.26	-8.30		-2.19 -1
al	🗉 Health Care		11.02	13.89	-2.87	73.99	-2.87	76.86	8.08 -0
al	Industrials		6.54	10.27	-3.73	63.63	-4.55		-4.18 -0
al.	Information Technology		13.00	24.24	-11.24	-9.30	8.04	-17.34	-1.21 1.
	🗉 Materials		2.21	2.94	-0.73				-0.09 -1
	Posl Ectato	1	0 70	2 KO	-2 40	_10 OE			-0.05 -0
Field	Contribution to Return (+/-)								
0	STRATEGIC GROWTH R -8 170		\sim	-					
		-							
							and the second second		
-10	09:35 09:40	09:45	09:50	09:5	5	10:00	10:05	10	10
			01 Fe	2018	2	1000	ing in the second s		
Holding	js as of: 9/12/2013			200m -	i	100%	0.0		

PORT <GO> Intraday performance

Monitor your portfolio's intraday performance relative to the prior day's close prices.

Real-time monitoring

- Track how your portfolio is performing today on an absolute basis or relative to a benchmark.
- Quickly identify the top and bottom return contributors to your portfolio by security, by industry or by any other classification.
- Display the intraday cumulative return chart or heat map for a visual representation of today's activity.
- For fixed income securities, PORT <GO> leverages the numerous intraday pricing feeds available via the Bloomberg Terminal, including MSG1 pricing.

Portfolio news & alerts

- Bloomberg's ever-expanding news content is fed by more than 60,000 sources, including global press releases, broker research and blogs.
- Alerts and unlimited keyword criteria can be applied to your portfolios, ensuring that every piece of news and research critical to you is captured.
- Sort your portfolio news with up to 11 different filters, including "User Activity," which uniquely shows the stories of most interest to other users in the Bloomberg community.



PORT <GO> News pop-up

Instantly view the stories relating to and impacting your portfolio with Bloomberg News.

Bloomberg Brief newsletters

Portfolio managers, treasurers and risk professionals with Bloomberg Terminals have a resource in the form of a weekly regulation e-newsletter launched in May 2011. Titled Bloomberg Brief Financial Regulation, this publication contains the latest regulatory news, commentary and analysis There is also a daily economics e-newsletter, Bloomberg Brief Economics, that includes economic insights, news and data from our team of dedicated economists. Bloomberg Terminal customers enjoy complimentary access to the newsletters. Non-Terminal customers may access via paid subscription.



Monitor your portfolio's intraday performance anytime and anywhere on your iPhone, iPad, Android or other mobile device with Bloomberg Anywhere.

Evaluate your portfolio's current structure.

Bloomberg's Portfolio & Risk Analytics solution centralizes the critical data and analytics you need to understand the structure of your portfolios. Display the fundamental metrics you care about most, such as P/E and dividend yield for equity portfolios or effective duration for fixed income portfolios. Create your own growth or trend metric leveraging Bloomberg's vast fundamentals database.



PORT <GO> Characteristics tab

Analyze the fundamental characteristics of your portfolio that matter most.

Aggregate portfolio characteristics

- Analyze key equity or fixed income characteristics of your portfolio and see how they compare with a benchmark on a specific date or as a time series trend.
- Aggregate these measures by any classification, such as a sector, country or any custom schema that you define.
- Upload your own custom data and display alongside Bloomberg data.
- Chart characteristics to see your relative exposures versus the benchmark.

Portfolio cash flows

- Display the projected income generated by your portfolio over a time-specified horizon in both chart and table form.
- Cash flows are based on Bloomberg Dividend Forecast (BDVD) for equity instruments, coupon and principal payments for fixed income instruments.



PORT <GO> Cash flows Understand the proje

Understand the projected cash flows of your portfolio.

Liquidity risk

- Understand your equity portfolio's liquidity based on the average or total days to liquidate all or a portion of your positions.
- Quickly identify the most illiquid stocks in your portfolio as well as the concentration of your portfolio's market value in more – vs. less – liquid securities.
- Customize your liquidity risk analysis based on a specified participation rate and average trading volume history.
- Analyze your portfolio's liquidity horizon based on the length of time it would take to liquidate a preset percentage of the portfolio's total market value.

11) Viev	w ▼ 12) Ac	tions •	13) Set	tings 🔹	14) Trad	e Simul	ation 🔻	Po	rtfolio & Risk Ana	lytics
Intraday	Holdin	gs C	haracterist	tics Va	aR Trac	king Erro	or/Volatility Scenari	ios Performance	Attribution	
Main Vie	w Summa	ary Ca	sh Flows	Liquidity	Risk Key	y Rates				
MID CAP	EQUITY	• v	s None		by GIC	S Sector	s in USD 🔹		As of 02/01	/18 🛱
Analytic	Tota	al Days	To Liquid	ate	- 0.000 (11)					
Liquidity	Summary			Unit I	Days		Breakdown	% Part 5	Volume History	30 D
			Volume H	listory			Security	Liquidity	Cos	st
% Part	5 D	10 D	20 D	30 D	3 M	6 M	Portfolio		0.16	0.00
5	0.16	0.16	0.16	0.16	0.17	0.18	🗏 Materials		0.16	0.00
10	0.08	0.08	0.08	0.08	0.09	0.09	VALVOLINE IN		0.16	0.00
15	0.05	0.05	0.05	0.05	0.06	0.06	RELIANCE STE		0.13	0.00
20	0.04	0.04	0.04	0.04	0.04	0.04	ROYAL GOLD		0.06	0.00
25	0.03	0.03	0.03	0.03	0.03	0.04	ALBEMARLE C		0.01	0.00
30	0.03	0.03	0.03	0.03	0.03	0.03	🗄 Financials		0.15	0.00
							🗄 Real Estate		0.15	0.00
							🗉 Utilities		0.11	0.00
							Industrials Industrial Industri Industrial Industrial Industrial Industrial		0.09	0.00
				Sec. 24						0.00

PORT <GO> Liquidity risk

Analyze your equity portfolio's structure in terms of the overall liquidity of your positions.

Understand your portfolio's risk.

Bloomberg has developed fundamental risk factor models to help you measure and analyze portfolio risk through multiple lenses, including tracking error, stress testing and VaR.

11) View - 12) Ac	tions • 13) Settings •	14 Trade S	imulation 🝷		Portfolio & R	isk Analytics
Intraday Holding	gs Characteristics	VaR Trackin	g Error/Volatility	Scenarios Perform	nance Attributi	on
Main View Summa	ry Factors Risk Bets	Trends Expo	sures		1111	
MID CAP EQUITY	VS S&P 500 IND	by GICS S	ectors 💽 in USI	D	As of	02/01/18 🗖
Model US Equity Fu	unit 🛛 Returns (%				Horizon	1 Year
Portfolio Value	11,270,737.83 USD	(62 name(s),	99% Gross MV)	Portfolio	Beta(Ex-Ante)	1.00 🛈
	Ris	k (Std)		Facto	r Risk (Std)	
Item	Total Risk	Factor	Non-Factor	Country	Industry	Style
Portfolio	9.45	9.24	1.99	7.77	1.42	2.94
Benchmark	8.20	8.12	1.14	8.26	1.07	1.00
Active	4,75	4.19	2.23	0.50	1.72	3.92
Click a number to s	æe breakdown					
	Risk Con	tribution (%)		Factor Risk	Contribution (%)
Item	Total Risk	Factor	Non-Factor	Country	Industry	Style
Portfolio	100.00	95.57	4.43	74.77	4.18	16.62
Benchmark	100.00	98.08	1.92	98.59	2.34	-2.84
Active	100.00	77.96	22.04	-1.26	13.19	66.03
Total Risk(Active)	Click chart bars to	o drill down			0 Risk	Exposure
4.5						
2 5						
3.5						
2.5						
1.5		-				
1		-	*****			
0.5		-	*********		551755755	********
0	ountry	Industry		Style	Non-Fa	ctor

PORT <GO> Tracking error tab

Analyze your portfolio's ex-ante (predicted) risk by using one of Bloomberg's multi-factor risk models.

Tracking error

- Fully transparent fundamental risk factor models provide global, multi-asset-class coverage across all of your positions.
- More informative risk break down using market-standard as well as custom classifications.
- Calculate risk in absolute terms or relative to your benchmark, another portfolio, fund or index.
- Only Bloomberg provides the ability to click through to the underlying fundamental data for full risk data transparency.

Scenario analysis

- Evaluate your portfolio using a variety of historical stress scenarios such as the global financial meltdown in 2008 and Brexit in 2016, as well as theoretical shocks like moving the Vix up 300%, or simulating a 100bp rate hike.
- Create your own custom stress tests to gain greater insight into your portfolio's risk and validate current portfolio exposures.

11) View 12) Actions 13) Settings	14 Trade Simulation 🔹	P	ortfolio & Risk Analytics
Intraday Holdings Characteristics	VaR Tracking Error/Volatility	Scenarios Performance	Attribution
Main View Scenario Summary Best & Wor	st Scenario Navigator		
MID CAP EQUITY VS S&P 500 IND	by GICS Sectors in US	SD Y	As of 02/01/18
Model Bloomberg Ris			
Scenario	P&L (+/-)	P&L % (+/-)	Stress MV (+/-)
Debt Ceiling Crisis & Downgrade in 20	-256,645	-2.28	-256,645
Ö Vix up 300	-211,709	-1.88	-211,709
🗴 Lehman Default - 2008	-132,028	-1.17	-132,028
G Equities down 10%	-105,601	94	-105,601
Brexit 2016	-28,166	25	-28,166
🛈 EUR up 10% vs. USD	-17,256	15	-17,256
🛈 EUR down 10% vs. USD	17,254	.15	17,254
(1) US 10yr treasury +100bps with propag	at 21,593	.19	21,593
 Japan Earthquake in Mar 2011 	83,554	.74	83,554
Equities up 10%	105,575	.94	105,575
	∠ Annotate		1.00
			L o FO
			F ^{0.30}
			0.00
		and a second	
			-1.00 dF
			-1150
			-2.50
Equities up 10% US 10yr treasury +100bps with propagation	1 EUR up 10% vs. USD Brexit 2016 E	quities down 10%	
	Scenario		

PORT <GO> Scenarios tab

Stress test your portfolio and identify sensitivities to selected market risk factors.

Value-at-risk

- Global multi-asset-class security coverage, with stress matrix pricing on derivatives for more accurate VaR forecasts.
- Ability to measure the VaR impact on proposed trades using Trade Simulation mode and optimization.
- Support for Monte Carlo, historical and parametric VaR methods across multiple confidence levels to calculate maximum expected loss.
- Robust proxy capability to assist in exception handling.

11) View + 12) Actions - 13) Set	tings 🕶 14 Trade S	imulation 🔹	Po	ortfolio & Risk Analytics
Intraday Holdings Characterist	tics VaR Trackin	g Error/Volatility Scen	arios Performance	Attribution
Main View VaR Comparison Distrib	ution VaR Simulations	Factor Breakdown		
MID CAP EQUITY VS S&P 50	DO INDE by GICS S	ectors in USD ·		As of 02/01/18
Model US Equity Fund Vinit P&L	CLVL 9	State of the second sec	Horizon	1 day
Portfolio Value 11,270,737 USD			Secur	ity coverage
VaR (P&L)			#Po;	s • MV
Methodology	95% VaR	97.5% VaR	99% VaR	
Monte Carlo Simulation VaR	49,887	61.941	78,679	Excluded : 1.34%
Historical 1 Year Simulation VaR	53,100	66.064	91,452	1
Historical 2 Year Simulation VaR	49.210	62.095	77.866	Covered : 98.66%
Historical 3 Year Simulation VaR	51 881	68 098	89.611	
Parametric VaR	53.015	63.172	74,981	
Contributors				
Name	VaR	Marginal VaR (x100)	Partial VaR	Conditional VaR
Portfolio	49,887			68,402
Information Technology	20,023	95	-6,503	27,153
Telecommunication Services	3,592 📕	28	384	4,870 📕
Energy	13,815	2.66	-5,529 📃	18,368
Utilities	5,508 🔜	01	-337	7,244 🔛
Consumer Staples	8,282	4.62	-2,803 📕	11,116
Consumer Discretionary	11,131	-2.63	-4,637	15,348
Health Care	12,997	81	-2,484 📕	17,433
🐨 Real Estate	5,352	.60	-1,057	7,111
Materials	9,434	.63	-2,492	12,696
Not Classified	0	.00	0	0
Industrials	13,250	1.71	-4,886	17,878
Financials		2.59	-5,522	15,178

PORT <GO> VaR tab

Analyze the tail risk of your portfolio using the latest risk -modeling techniques.

Simulate trades & construct your portfolio.

Bloomberg's flagship application for portfolio analysis includes fully integrated portfolio construction tools. Trade Simulation and Portfolio Optimization allow you to easily and rapidly identify trades that will ensure that you make the best investment decisions.

11) View + 12) Actions + 13) Settings +	14)	Trade Sim	ulation 💌			1	Portfolio :	& Risk Analy	/tics
TRADE SIMULATION ENABLED		No	Trades	Optimizer	Trades	Add Holding	s Save/T	rade 🔻 Sett	ings 🗵
Intraday Holdings Characteristics V	'aR	Tracking E	rror/Volatili	ty Sce	narios	Performanc	e Attrib	oution	
Main View Summary Cash Flows Liquidity	Risk	Key Rate	5						
MID CAP FOULTY VS S&P 500 INDE	• by	GICS Sec	tors in	USD			As	of 02/01/1	8 🛱
Date Trend				None T					The second
Name	[nc	Simulated Wat	Orig Wgt	Wgt +/-	Buy/Sel		Wgt		kt 🔺
						Port	Bmrk	+/- D(ort
0						1010	Brink		
MID CAP EQUITY	2	100.00	100.00	0.00		100.00	100.00	0.00 11.	27
Consumer Discretionary	2	10,19	10.19	0.00		10.19	12.62	-2.43 1.1	48
Consumer Staples		8.27	8.27	0.00		8.27	7.87	0.40 93	1.8
Energy	2	7.83	7.83	0.00		7.83	5.97	1.86 883	2.4
📕 🗏 Financials	2	16.21	16.21	0.00		16.21	14.89	1.32 1.8	26
EVERCORE INC - A		2.07	2.07	0.00		2.07		2.07 233	2,9
HUNTINGTON BANCSHARES INC		2.40	2.40	0.00		2.40	0.07	2.33 270	0,6
LINCOLN NATIONAL CORP	2	1.72	1.72	0.00		1.72	0.08	1.64 19:	3,8
M & T BANK CORP		2.05	2.05	0.00		2.05	0.12	1.93 230	0,6
PROGRESSIVE CORP	2	2.29	2.29	0.00		2.29	0.13	2.16 25	3,5
SYNOVUS FINANCIAL CORP		2.97	2.97	0.00		2.97		2.97 334	4,9
TD AMERITRADE HOLDING CORP	2	1.12	1.12	0.00		1.12		1.12 12	5,9
UNITED BANKSHARES INC		1.59	1.59	0.00		1.59		1.59 179	9,0
📶 🔳 Health Care	2	8.68	8.68	0.00		8.68	13.89	-5.21 978	3,7
👔 🗉 Industrials		14.03	14.03	0.00		14.03	10.27	3.76 1,5	81
🚮 🗉 Information Technology	2	12.29	12.29	0.00		12.29	24.20	-11.91 1,3	85
Matoriale	10	6.21				6 71	2 05	2 25 600	n A
Turnover: 0%			Zoor	m -	-1-+1	20%			

PORT <GO> Trade simulation

Analyze how your portfolio's characteristics and risk structure would change based on your potential trades.

Test the impact of your trade ideas

- Evaluate potential trades or edit existing positions by using the Trade Simulation functionality.
- Analyze in real time the impact of hypothetical trades across the entire analytical suite of portfolio tools available within PORT <GO>.

Discover your portfolio's optimal construction

- Iterate through multiple versions of hypothetical trades to build an efficient frontier of optimal portfolios.
- Upload your custom security-level expected returns or any other data as inputs to the Optimizer.
- Leverage Bloomberg's Transaction Cost Analysis model to incorporate market impact into your test.
- Backtest your strategy to create a model portfolio and analyze its historical performance in PORT <GO>.



Identify the trades to meet your investment objectives

- Easily identify the best set of trades that will give your portfolio the exposures that you want it to have.
- Analyze your hypothetical portfolio that incorporates these trades seamlessly in PORT <GO>.

1) Run	2) Tasks	- 3)	Settings		99) Ai	nalyze	in P	ORT			Portfol	io Opt	imization
Port MID CAP EQUI 51) Setup 52) Fre	TY ontier 53	Bmrk SPX Backtest	54) Trades		Risk Model	Bloc	omber	g Risk I	Mo •	02/	01/18	8	Backtest
Showing Results fo	or Portfoli	o 5	•										
Optimization Sumn	nary Statu	s Success			Goal Summa Goal	ry				Initia	l Value	Fin	al Value
Turnover(%) # of Buys	54.91 T 6 \	rade Value /alue of Buy	s 2	,188,620 ,810,880	Active Total	Risk					4.73		3.04
# of Sells Proposed Trades	19 \	/alue of Sell	s 3	,377,740							Exp	ort Tr	ades
Security	Name			Trade	Quar	ntity	Init.	Weight	(%)	Opt.	Weight (8)	wgt Diff1
AAPL US	APPLE	INC		Buy	5,95	0		1			9	.84	8.84
USD	US DOL	LAR		Buy	566,85	3.43		-0	.03		5		5.03
FIS US	FIDELIT	Y NATIONAL	INFO SERV	Buy	4,78	6		1			5	.35	4.35
ROP US	ROPER	TECHNOLOGI	ES INC	Buy	1.69	2		1	.02		5	.23	4.21
A US	AGILENT	TECHNOLOG	IES INC	Buy	4.65	9		1	.51		4	54	3.04
LNC US	LINCOL	NATIONAL	CORP	Buy	3,87	3		1	.72		4	.57	2.85
VRTX US	VERTEX	PHARMACEUT	TICALS INC	Buy	1,12	2		0	.5			.16	1.66
Portfolio and Grou	p Constraint	t Results											
Group		Field		Relativ	e	Min	1	Мах	Init	Val	Final	Value	Warning
PORTFOLIO	l	Number of Tr	rades	INIT_P	ORTFOLIO			25		0		25	

PORT <GO> Optimizer results

The Optimizer delivers suggested trades for analysis with resulting active total risk or any other optimization goal.

Generate high quality customizable reports.

Bloomberg's portfolio and index reporting function PREP <GO> allows you to configure reports on your portfolios and relevant indices. Define your desired report type and configure its contents, calculation parameters, timeframe and format.

	Create Port Report
Report Name	
Report Type	Market Structure Summary statistics on a portfolio or index broken down into specified partitions. Customizable table with data for one or multiple portfolios, benchmarks, attributes, partitions and dates.
Currency	USD •
Language	English
Format	XLS •
Include Scena	rios
Owner Role	ANDREW COHEN
	1) Create Close

PREP <GO> Portfolio & index reporting

Define your report type and configure reports on your portfolios and relevant indices.

Simplify your transition from Barclays POINT.

- Create POINT[®] style reports such as Market Structure, Index & Portfolio Contents, Global Risk Model (GRM) and Hybrid Performance Attribution (HPA).
- Select from Excel, PDF, CSV or XML formats.

Schedule and synchronize your data import and reporting jobs.

JMGR <GO>, Bloomberg's Job Manager, allows you to schedule your file uploads and reports and synchronize your tasks to ensure timely production.

1) Create	2) Settings	3) Export					Job Mana	ager
09/25/18 - 09	/28/18 🖬	Wed Sep 26 20)18	PORT Busin	ess Te	eam Port+ Adn	ninistrators	
Batch View File	View							
Tags	Name		Туре	Status		Starts	Completed	
				•	•			
Nam Tag	 Daily_PREP_Test - 	09/24	Batch	Failed		09/25 00:53	09/25 00:53	순 土
Validation	► CLB index - 09/24		Batch	Success		09/25 00:53	09/25 00:59	▶土
Validation_PR0	 CD testing daily - 0)9/24	Batch	Success		09/25 00:53	09/25 01:01	►±
yunfei	 Multiverse Validation 	on - 09/24	Batch	Success		09/25 01:00	09/25 01:17	►±
	 Muni Index Validati 	on - 09/24	Batch	Success	•	09/25 01:00	09/25 01:29	►±
	► MR_UDF		Batch	Success		09/25 06:00	09/25 06:03	►±
	► MR_OPTO - 09/24		Batch	Failed	θ	09/25 07:00	09/25 07:03	む 土
	 ak-test-3 - 09/24 		Batch	Success		09/25 08:00	09/25 08:01	►±
	 JPM Test - 09/24 		Batch	Success		09/25 08:30	09/25 08:32	►±
	 JRHBWORLD - 09/24 	4	Batch	Success		09/25 10:00	09/25 10:05	►±
	▶ ak-grm-lua - 09/2	4	Batch	Failed		09/25 13:00	09/25 13:00	순 土
	 My Job - 09/25 		Batch	Failed		09/25 18:50	09/26 00:08	란土
	 Derivs - 09/25 		Batch	Success		09/25 19:17	09/25 19:19	►±
	 index msg - 09/25 		Batch	Success		09/25 20:00	09/25 20:23	►±
	Muni Validation - 0	9/25	Batch	Success		09/25 20:00	09/26 00:19	►±
	 Metering test - 09/ 	25	Batch	Failed		09/25 20:00	09/26 00:18	순분
	 All Currencies - 09, 	/25	Batch	Success		09/25 20:00	09/25 20:21	►±
	 HPA nightly reprici 	ng test - 09/25	Batch	Success		09/25 20:17	09/25 20:27	►±
	 Corp Sov Validation 	- 09/25	Batch	Success		09/25 22:00	09/26 00:19	►±
	 Securitized Validati 	on - 09/25	Batch	Success		09/25 22:00	09/25 22:05	►±
	 Daily QA Metric - 0 	9/25	Batch	Success		09/25 22:00	09/25 22:11	►±
Create new	▶ Daily_PREP_Test -	09/25	Batch	Failed		09/26 00:03	09/26 00:10	₫±•

JMGR <GO> Job manager

View the status of each of your jobs and when they started and completed.

PREP report outputs

PREP produces a range of reports aligned to Barclays POINT formats.

Global Risk Model (GRM)

Identify most relevant risk factors.

Bloomberg										POR	T Global I	Risk Mod	iel
Portfolio Risk Summ Portfolio: US CO Benchmark: (LBUST Reporting Units: Returns	iary Report RE (RUU) Bloomberg E in bps/month	Barclays I	US Agg Tot	al Return Valu	e Unhedged USD (Retur	ns)				F A B	tun Date: s of Date: ase Curren	09/3 9/3 cy:	27/2018 26/2018 USD
Facto	or Partition Summa	ry			Contrib	ution to TE\				TEV	Summary		
	Contrib to Iso	lated TEV	Systemat	c 25 .					Total TEV				29.7
	TEV		Be	a 20					Systematic TEV				28.6
Total	29.7	29.7	0	7 20 -					Idiosyncratic TEV				7.5
Systematic	27.5	28.6	0	7					Default TEV				3.0
Curve	26.2	29.2	0	7 15 -									
Swap Spreads	-0.0	4.7	0	0									
Volatility	-1.3	5.0	-0	0 10 -						Port	folio Info		
Spread Gov-Related	0.2	1.1	0	0					Last Transaction			9	9/27/2018
Spread Credit and EMG	1.7	6.4	-0	1 0*					Total MV (MM)				2,128.7
Spread Securitized	0.7	8.1	-0	0 -				_	Cash MV (MM)				0.0
Idiosyncratic	1.9	7.5		-					Total Notional (MM)			4,455.6
Credit default	0.3	3.0		-	curve apro Vol	apro and	biqo,	1010	et Positions Included				191
					Co. SWP DI GOI	Crd 8 E. St	c'ed of		Positions Excluded				16
DOD							140		E BOSITIONS				
FUR	FOLIO STATISTIC	,3					MA	JOK AGTIV	EPOSITIONS				
Net Market W	eight % (Portfolio-B	enchmarl	k)	N	lajor Systematic Risk Exp	Major Systemat	ic Risk Ex	posures - C	orrelated				
Sector		PORT	BMK N	et Factor		Net Exp.	Factor	TE impact	Factor		Net Exp.	Factor T	E impact
Treasury/Agency/Muni		21.1	39.4 -18	3 USD 10Y M	w rate	-1.0	16.2	16.6	LISD 20Y key rate		-0.3	14.9	26.6
Credit - Inv. Grade		61.0	28.2 32	7 LIED 20V M	w rate	0.7	14.0	0.5	USD 20V key rate		0.7	14.0	20.0
Credit - High Yield		5.9	0.0 5	9 030 301 M	USD 30Y key rate		14.0	8.5	USD JUT Key Tale		-0.7	14.0	20.4
Securitized				LISD MRS 9	hread	-1.1	67	/ 4	LISD 10V key rate		-10	16.2	- M- 1
		12.0	30.5 -18	5 USD MBS 5	Spread	-1.1	6.7	-5.2	USD 10Y key rate		-1.0	16.2	25.0
Inflation-Linked		12.0 0.0	30.5 -18 0.0 0	5 USD MBS S 0 USD 2Y key USD MBS I	spread rrate ono/Derivative Volatility	-1.1	6.7 11.0 178.4	-5.2 5.0	USD 10Y key rate USD 50Y Key Rate		-1.0 -0.0	16.2 13.7 15.9	25.9
Inflation-Linked Emerging Markets		12.0 0.0 0.0	30.5 -18 0.0 0 1.8 -1	5 USD MBS 5 0 USD 2Y key 8 USD MBS 1	Spread r rate .ong/Derivative Volatility	-1.1 0.5 -0.0	6.7 11.0 178.4	-5.2 5.0	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate		-1.0 -0.0 -0.2	16.2 13.7 15.9	25.9 23.8
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc)		12.0 0.0 0.0 0.0	30.5 -18 0.0 0 1.8 -1 0.1 -0	5 USD MBS 5 0 USD 2Y key 8 USD MBS L 1 USD 20Y key 1 USD 20Y key	ipread rate .ong/Derivative Volatility sy rate linh Grade Industrials	-1.1 0.5 -0.0 -0.3	6.7 11.0 178.4 14.9	7.4 -5.2 5.0 4.4	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate USD 2Y key rate USD Credit Core		-1.0 -0.0 -0.2 0.5	16.2 13.7 15.9 11.0	25.9 23.8 19.3
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total		12.0 0.0 0.0 100.0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0	5 USD MBS 5 0 USD 2Y key 8 USD MBS L 1 USD 20Y key 1 USD 20Y key 1 USD 20Y key 1 USD 20Y key 1 USD 20Y key	ipread r rate .ong/Derivative Volatility ey rate ligh Grade Industrials	-1.1 0.5 -0.0 -0.3 0.6	6.7 11.0 178.4 14.9 5.3 8.8	7.4 -5.2 5.0 4.4 -3.0 -2.8	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate USD 2Y key rate USD Credit Core USD Credit Core	9009	-1.0 -0.0 -0.2 0.5 -0.0	16.2 13.7 15.9 11.0 6.0	25.9 23.8 19.3 -15.1
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total		12.0 0.0 0.0 100.0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0	5 USD MBS 5 0 USD 2Y key 8 USD MBS 1 1 USD 20Y key 1 USD 20Y key 0 USD Ultra F USD IND E	pread rate ong/Derivative Volatility ey rate ligh Grade Industrials nergy rate	-1.1 0.5 -0.0 -0.3 0.6 0.3	6.7 11.0 178.4 14.9 5.3 8.8 15.9	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate USD 2Y key rate USD Credit Core USD FIN Life and Health Insur USD Corporate volatility	ance	-1.0 -0.2 0.5 -0.0 0.4	16.2 13.7 15.9 11.0 6.0 4.5 103.7	25.9 23.8 19.3 -15.1 -13.6 -13.2
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total	ummary Analytics	12.0 0.0 0.0 100.0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0	5 0 0 0 0 0 0 0 0 0 0 0 0 0	ipread rate ong/Derivative Volatility y rate ligh Grade Industrials nergy rate and Maturity	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate USD 2Y key rate USD Credit Core USD FIN Life and Health Insur USD Corporate volallity USD FIN Finance Companies	ance	-1.0 -0.2 0.5 -0.0 0.4 0.0 0.0	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total	ummary Analytics	12.0 0.0 0.0 100.0 PORT	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N	5 USD MBS 5 0 USD 2Y key 8 USD MBS 1 1 USD 20Y key 1 USD 20Y key 1 USD IND E USD IND E 1 USD 5Y key 1 USD IND S	ipread rate ong/Derivative Volatility yrate ligh Grade Industrials nergy rate ort Maturity	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.8 2.4	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate USD 2Y key rate USD Credit Core USD FIN Life and Health Insur USD Corporate volatility USD FIN Finance Companies	ance	-1.0 -0.2 0.5 -0.0 0.4 0.0 0.0	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1	5 USD MBS 5 0 USD 2Y key 8 USD MBS 1 1 USD 20Y key 0 USD IND E USD IND E USD IND S 1 USD IND S 1 USD IND S	pread rate ong/Derivative Volatility by rate ligh Grade Industrials hergy rate hort Maturity Contribution	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4	USD 10Y key rate USD 5Y Key Rate USD 5Y key rate USD 2Y key rate USD 2Y key rate USD FIN Life and Health Insur USD Corporate volatility USD FIN Finance Companies	ance	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total OAD OAD OAD	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40	5 USD MBS 5 0 USD 2Y key 8 USD MBS 1 1 USD 20Y key 0 USD UITR F USD IND E USD IND S 8 1 USD IND S 7 3 7 3 Factor	ipread rrate ong/Derivative Volatility ty rate tigh Grade Industrials tergy rrate nort Maturity Contribution	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 I to TEV Net Exp.	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4 Contrib to	USD 10Y key rate USD 50Y Key Rate USD 5Y Key rate USD 5Y key rate USD Credit Core USD FiN Life and Health Insur USD FIN Life and Health Insur USD FIN Finance Companies	ance fiosyncrat	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 ic Risk Net OASD	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total OAD OAS OASO	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1	5 USD MBS 5 0 USD 27 key 8 USD MBS 1 1 USD 207 key 0 USD IND E USD IND E 1 USD 57 key 1 USD IND S 7 3 Factor	pread rrate ang/Derivative Volatility yr rate ligh Grade Industrials nergy rrate cont Maturity Contribution	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 to TEV Net Exp.	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4 Contrib to TEV	USD 10Y key rate USD 50Y Key Rate USD 5Y key rate USD 2Y key rate USD Credit Core USD FIN Life and Health Insur USD Corporate volatility USD FIN Finance Companies	ance diosyncrat Iss. I Port Mi	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 ic Risk Net OASD	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum.
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total OAD OAS OAC	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0	USD MBS 1 0 USD 2Y kerg 8 USD MBS 1 1 USD MBS 1 1 USD MBS 1 1 USD MBS 1 1 USD 20 Y kerg USD IND E USD IND E 1 USD IND E 1 USD IND E 1 USD IND S 7 Factor 0 USD 10Y kerg	rpread rrate ong/Derivative Volatility yr rate lengy lengy rrate Contribution ry rate	-1.1 -1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 to TEV Net Exp. -1.0	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4 Contrib to TEV 14.6	USD 101 Key rate USD 507 Key Rate USD 507 Key rate USD 507 Key rate USD Credit Core USD FIN Life and Heath Insur USD FIN Life and Heath Insur USD FIN Finance Companies International Companies	ance diosyncrat Iss. 1 Port Mi 3	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 ic Risk Net OASD 2.2 0.2	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9
Inflation-Linked Emerging Markets Other (Cash, Denv. etc.) Total CAD OAD OAS OASD OAC Vega	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3 0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 -0.0 0	5 USD MBS 1 0 USD 2Y key 8 USD MBS 1 1 USD 2Y key 0 USD IND E USD IND E USD IND E 1 USD SY key 1 USD SY key 1 USD IND S 7 7 7 7 0 USD 10Y key 0 USD 10Y key 0 USD 10Y key	rpread rrate ong/Derivative Volatility yr rate ging Grade Industrials eregy rrate oort Maturity Contribution by rate yr rate	-1.1 -1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 • to TEV Net Exp. -1.0 -0.7	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4 Contrib to TEV 14.6 8.5	USD 101 Key rate USD 507 Key Rate USD 507 Key rate USD 27 Key rate USD 27 Key rate USD 7 Key rate Comparison Comporison Comparison Compariso	ance Jiosyncrat Port Mi 3 1	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 0.0 tic Risk V% OASD V2.2 0.2 1.1 0.1	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 Idio 1 Ind. 4.9 3.1	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc.) Total OAD OAS OAS OAS OAS OAS OAS OAS	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3 -0.0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 -0.0 0	5 USD MBS 2 USD 2Y key 8 USD MBS I USD 27 key 8 USD MBS I USD 27 key 8 USD 100 F USD 100 F 1 USD 100	ipread irrate ong/Derivative Volatility yr rate iergy irrate Contribution yr rate yr rate yr rate	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 to TEV Net Exp. -1.0 -0.7 -0.3	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4	7.4 -5.2 5.0 -2.8 2.8 2.4 Contrib to TEV 14.6 8.5 4.0	USD 101 Key rate USD 507 Key rate USD 504 Key rate USD 27 key rate USD Cast Core USD Filk Finance Companies USD Filk Finance Companies Recer / Identifier AIG APC KitC	ance diosyncrat Port Mi 3 1 2	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 ic Risk Net 0ASD 2.2 0.2 1.1 0.1 3.0 0.2	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 Idio Ind. 4.9 3.1 2.2	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.2
Inflation-Linked Emerging Markets Other (Cash, Denv. etc) Total OAD OAS OAS OAS OAS OAC Vega USD Net Ke	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3 0 0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 0.4 -0 0.4 -0	5 USD MBS I 0 USD 2Y kei 1 USD 2Y kei 8 USD MBS I 1 USD 20Y kei 0 USD Ultra I USD ND E USD ND E 1 USD ND S 1 USD ND S 1 USD IND S 7 3 8 Factor 0 USD 101Y kei 0 USD 101Y kii 0 USD 101Y kei	ryread orapDenvätve Volatility yr rate ging Grade industrials wergy mort Maturity Contribution yr rate yr rate yr rate	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 Net Exp. -1.0 -0.7 -0.3 0.5	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4 -11.5	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4 Contrib to TEV 14.6 8.5 4.0 -3.4	USD 101 Viey rate USD 507 Key Rate USD 57 Key rate USD 27 Key rate USD Credit Core USD Credit Core USD Credit Core USD FiN Finance Companies USD FiN Finance Companies It Cocker / Identifier IG AIG APC KHC PAA	ance Iss. 1 Port Mi 3 1 2 2	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 ic Risk Net 0ASD 2.2 2.2 0.2 1.1 0.1 1.1 0.1 1.1 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 <u>Idio</u> <u>Ind.</u> 4.9 3.1 2.2 1.6	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.2 6.5
Inflation-Linked Emerging Markets Other (Cash, Deriv, etc.) Total OAD OAD OAS OAS OAS OAS OAS OAS Vega USD Net Ke Key Rate	ummary Analytics ey Rate Duration Ex	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3 -0.0 PORT PORT 0.1	30.5 -18 0.0 0 1.8 -1 0.1 -0 0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 -0.0 0 BMK N	5 USD MBS 3 USD 27 key USD 27 key USD 207 key USD UIND E USD IND E USD IND E USD IND E USD IND E USD IND E USD IND E USD 101 key USD 107 key USD 207 key	pread prate ang/Derivative Volatility yr afte ligh Crade Industrials veryy ratile Contribution yr rate yr rate yr sate yr sate rrate	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 • to TEV Net Exp. -1.0 -0.7 -0.3 0.5 -0.2	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4 -11.5 7.5	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.4 Contrib to TEV 14.6 8.5 4.0 -3.4 2.2	USD 101 Viey rate USD 507 Key rate USD 51 Viey rate USD 21 viey rate USD 2016 Viey rate USD Fill Life and Health Insur USD Fill Life and Health Insur USD Fill Life and Health Insur USD Fill Vie And Health Insur Vie And Hea	liosyncrat Iss. 1 Port Mi 3 2 2 1	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0 2.2 0.2 2.2 0.2 1.1 0.1 0.3 0 0.2 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 Idio Ind. 4.9 3.1 2.2 1.6 1.6	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.2 6.5 6.6
Inflation-Linked Emerging Markets Other (Cash, Denv. etc) Total OAD OAS OASD OAS OASD OAC Vega USD Net Ke Key Rate 6 month	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3 0.3 0.3 0.3 0.0 90SURES PORT 0.1	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 0 50 0 8 8 8 8 8 8 8 8 8 8 8 9 8 9 8 9 9 9 9	5 USD MBS 2 0 USD ZY key 0 USD ZY key 1 USD ZY key 0 USD LYD key USD ZY key USD LYD S 7 0 0 USD ZY key USD ZY key USD ZY key	rpread rrate ang/Denvative Volatility y rate ging Crade Industrials sergy mort Maturity Contribution ry rate y rate y rate y rate rate rate rate rate	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 -1.0 -0.7 -0.3 0.5 -0.2 -0.0	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4 -11.5 7.5 7.5 -4.4	7.4 -5.2 5.0 4.4 -3.0 -2.8 2.8 2.8 2.4 Contrib to TEV 14.6 8.5 4.0 -3.4 -2.2 -1.3	USD 101Y key rate USD 50Y Key rate USD 5Y Key rate USD 2Y key rate USD Credit Core USD Fink Life and Health Insur USD Corporate volatility USD Fink Insance Companies North Corporate Volatility USD Fink Insance Companies Reference Company Company Instruction Company	ance liss, l Port Mi 3 1 2 2 1	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 ic Risk Net 0ASD 2.2 0.2 1.1 0.1 3.0 0.2 0.9 0.1 0.8 0.0 2.1 0.1	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 3.1 2.2 1.6 1.6 1.2	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.2 6.6 6.6 6.8
Inflation-Linked Emerging Markets Other (Cash, Deriv, etc) Total OAD OAS OAC OASD OAC Vega USD Net Ke Key Rate 6 month 2 year	ummary Analytics	12.0 0.0 0.0 100.0 100.0 100.0 100.0 100.0 4.2 80.2 4.3 0.3 -0.0 0 0.0 10.0 10.0 10.0 10.0 10.0 10.	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 0.4 -0 0.4 0.4 -0 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.	5 USD 2W km 0 USD 2W km 1 USD 2W km 0 USD 1W km 1 USD 2W km 0 USD 1W km 1 USD 2W km 1 USD 1W km 1 USD 2W km 1 USD 1W km 1 USD 1W km	pread pread ong/Derivative Volatility yr rate very: cont Maturity yr rate yr yr yr yr rate yr yr y	-1.1 0.5 -0.0 -0.3 0.6 0.3 0.6 0.3 -0.2 -1.7 10 TEV Net Exp. -1.0 -0.3 0.5 -0.2 -0.0 0.3	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4 -11.5 7.5 -4.4 3.7	7.4 -5.2 5.0 -2.8 2.4 Contrib to TEV 14.6 8.5 4.0 -3.4 2.2 -1.3 1.1	USD 101 Viey rate USD 507 Key rate USD 57 Key rate USD 27 key rate USD Carolit Core USD Fill Life and Health Insur USD Fill Life and Health Insur USD Fill Life and Health Insur USD Fill Kentifiter Insuration Comparison Reference of the Insuration Reference of the Insuration Referen	ance tiosyncrat Iss. I Port Mi 1 2 2 1 1 1	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 104. 4.9 3.1 2.2 1.6 1.6 1.6 1.2 1.1	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.2 6.5 6.6 6.8 6.8
Inflation-Linked Emerging Markets Other (Cash, Deriv. etc) Total OAD OAS OAS OAS OAS OAS OAS OAS OAS OAS OAS	ummary Analytics	12.0 0.0 0.0 100.0 PORT 4.2 80.2 4.3 0.3 -0.0 PORT 0.1 1.1 1.3 2.2 PORT	30.5 -18 0.0 0 1.8 -1 0.1 -0 0 100.0 0 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Solution Solution	ryradi rrate ong/Derivative Volatility yrate ligh Crade Industrials every orni Maturity Contribution yr rate yr rate rrate rrate rrate ong/Derivative Volatility vergy dotream	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 Net Exp. -1.0 -0.7 -0.3 0.5 -0.2 -0.0 0.3 0.3 0.3	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4 -11.5 7.5 -4.4 3.7 3.1	7.4 -5.2 5.0 -2.8 2.4 Contrib to TEV 14.6 8.5 4.0 -3.4 2.2 -1.3 1.1 0.9	USD 101 Viey rate USD 507 Key Rate USD 507 Key rate USD 201 Viey rate USD Carol Core USD FIN Life and Health Insur USD FIN Life and Health Insur USD FIN Finance Companies Ticker /Identifier AIG AIG AIG AIG AIG RJF PAA TLN RJF QEP ABBV	ance liss, port Mi 3 1 2 2 1 1 3	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 0.0 0.0 0.0 0.0 0.0	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 104. 4.9 3.1 2.2 1.6 1.6 1.6 1.6 1.2 1.1 1.0	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.2 6.5 6.6 6.8 6.8 6.8 6.9
Inflation-Linked Emerging Markets Other (Cash, Deriv, etc) Total Cash, Deriv, etc) So OAD OAS OAS OAS OAS OAS OAS OAS OAS OAS OAS	ummary Analytics ey Rate Duration Ex	12.0 0.0 0.0 100.0 4.2 80.2 4.3 0.3 -0.0 0 0.1 1.1 1.3 0.3 0.1 1.1 1.3 0.3 0.0	30.5 -18 0.0 0 1.8 -1 0.1 -0 100.0 0 BMK N 6.0 -1 39.9 40 6.1 -1 0.4 -0 0.0 0 BMK N 0.1 -0 0.1 0.4 -0 0 0 0 0 0 0 0 0 0 0 0 0 0	Source Source<	ipread ipread ang/Derivative Volatility iprofeed industrials ready every rate Contribution v rate v rate v rate v rate rate v rate e ad Health Insurance	-1.1 0.5 -0.0 -0.3 0.6 0.3 -0.2 -1.7 Net Exp. -1.0 -0.7 -0.3 0.5 -0.2 -0.0 0.3 0.5 -0.2 -0.0 0.3 0.4	6.7 11.0 178.4 14.9 5.3 8.8 15.9 1.4 % of TE Variance 49.1 28.6 13.4 -11.5 7.5 -4.4 3.7 3.1 2.6	7.4 -5.2 5.0 4.4 -2.8 2.8 2.4 Contrib to T4.6 8.5 4.0 -3.4 2.2 -1.3 1.1 9 0.8	USD 101Y key rate USD 50Y Key rate USD 52Y key rate USD 27k yer rate USD Cendit Core USD Fink Life and Health Insur USD Caporate volatility USD Fink Finance Companies Ticker / Identifier AG APC APC APC AR APC ABB V ABB V ABB V ABB V	ance lissyncrat liss. II Port MI 3 1 2 2 1 1 1 3 3 4	-1.0 -0.0 -0.2 0.5 -0.0 0.4 0.0 ic Risk V** OASD 2.2 0.2 1.1 0.1 0.9 0.1 0.8 0.0 0.2 1.1 0.1 0.9 0.1 1.1 0.1 1.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.2	16.2 13.7 15.9 11.0 6.0 4.5 103.7 4.9 3.1 2.2 1.6 1.6 1.6 1.2 1.1 0,0,9	25.9 23.8 19.3 -15.1 -13.6 -13.2 -13.1 TEV Cum. 4.9 5.8 6.6 6.8 6.8 6.8 6.8 6.8 6.9 7.0

Market Structure Report (MSR)

Flexibly aggregate a universe on desired characteristics.

Bloomberg Euro HY MSR										
Index : (LP01TREU) Bloomberg Barclays Pan-E	Run As C Base	Run Date: 09/27/2018 As Of : 9/26/2018 Base Currency: USD								
	% Wgt	Cpn	Yield to Worst	OAD	OAS (Risk)	OAC (Risk)				
Total	100.00	4.678	3.54	3.57	344.82	-0.12				
Banking	12.29	5.460	3.05	3.07	312.99	0.14				
Basic Industry	6.80	4.344	2.94	3.46	300.27	-0.21				
Brokerage Assetmanagers Exchanges	0.18	4.125	4.12	5.20	409.22	0.34				
Capital Goods	11.13	4.248	2.62	3.08	282.16	-0.22				
Communications	21.91	4.587	3.48	4.13	324.71	-0.08				
Consumer Cyclical	16.86	4.702	3.98	3.46	383.41	-0.02				
Consumer Non-Cyclical	9.89	4.357	3.31	3.77	311.01	-0.17				
Electric	2.34	3.659	2.65	3.31	265.22	0.11				
Energy	1.98	5.113	3.17	3.38	354.64	0.11				
Finance Companies	0.59	6.798	6.49	3.24	621.55	0.25				
Insurance	2.80	5.097	4.65	5.02	403.97	0.22				
Natural Gas	0.50	3.887	3.00	4.16	298.51	0.26				
Other Financial	2.75	5.486	4.93	2.96	473.74	-0.15				
Other Industrial	3.07	4.193	5.81	3.50	578.43	0.51				
Other Utility	0.30	5.115	4.37	3.78	328.44	0.16				
REITs	0.52	3.760	3.12	4.30	317.32	0.21				
Technology	2.69	3.859	3.67	4.10	333.93	-0.76				
Transportation	3.40	5.756	4.56	2.65	445.85	-1.86				

Hybrid Performance Attribution (HPA)

Understand the sources of return relative to a benchmark.

Bloomberg													POR	T Hybrid	d Perforr	nance At	tributior
USD: Yield Curve Portfolio: US CORE Benchmark : (LBUSTRU	JU) Bloomb	erg Barcla	ys US Ag	g Total Ret	urn Value U	nhedged	USD								Period: 8/3	31/2018 to 9 Base Curre	3/26/2018 ncy: USD
	Yield				Curve-Matched Market Weight (%)				Duration (yrs)				Outperformance (bps)				
	Level (%) Change		Average Overweight				Average Overweight					Explained by Yield Curve					
	Port	Bench	Port	Bench	Port	Bench	Average	Min	Max	Port	Bench	Average	Min	Max	Carry	Change	Total
USD															0.4	29.8	30.2
USD: Government															-0.1	32.2	32.1
Average	2.729	2.764	19.6	19.6	100.0	100.0	-0.0	-0.1	0.0	4.29	5.98	-1.69	-1.72	-1.65	-0.1	32.6	32.5
Key Rates & Cash															-0.0	-0.6	-0.6
Cash	2.044	2.044	9.5	9.4	-11.4	-11.2	-0.2	-0.5	-0.0	0.00	0.00	0.00	0.00	0.00	0.1	0.0	0.1
6m	2.250	2.250	16.0	16.0	11.7	15.2	-3.5	-3.7	-3.3	0.06	0.07	-0.02	-0.02	-0.02	0.2	-0.1	0.1
2y	2.633	2.633	19.4	19.4	57.8	33.7	24.1	23.1	24.9	1.12	0.65	0.47	0.45	0.48	-0.2	0.1	-0.2
5y	2.751	2.751	20.7	20.7	29.2	32.3	-3.1	-3.0	-2.4	0.21	1.49	-0.14	-0.17	-0.11	-0.0	0.2	0.2
201	2.000	2.000	10.5	10.5	5.0	0.7	-11.0	-12.0	-11.7	1.02	1.33	-1.02	-1.03	-1.01	0.0	0.0	0.0
20y 30y	3.007	3.007	17.7	17.7	2.2	5.8	-1.0	-2.0	-1.7	0.42	1.30	-0.20	-0.30	-0.23	-0.0	-0.0	-0.1
Rest of Curve & Convey	ity	5.007	11.1	11.1	2.2	5.0	-0.0	-5.1	-0.0	0.42	1.15	-0.70	-0.71	-0.70	0.0	0.2	0.2
USD: Swap Spread															0.5	-2.4	-1.9
Key Rates & Cash															0.5	-0.8	-0.3
Cash	-0.000	0.000	-0.0	0.0						0.00	0.00	0.00	0.00	0.00	-0.1	0.0	-0.1
6m	0.194	0.194	-4.7	-4.7						0.06	0.05	0.01	0.01	0.01	0.1	0.0	0.1
2y	0.182	0.182	-0.2	-0.2						0.87	0.37	0.50	0.49	0.52	0.7	-0.3	0.4
5y	0.115	0.115	-0.4	-0.4						1.07	0.89	0.18	0.14	0.21	-0.1	0.6	0.5
10y	0.051	0.051	-0.4	-0.4						0.32	1.02	-0.71	-0.72	-0.69	-0.1	-0.4	-0.4
20y	0.027	0.027	-1.3	-1.3						0.57	0.88	-0.30	-0.33	-0.28	0.0	-0.5	-0.5
30y	-0.057	-0.057	-0.5	-0.5						0.13	0.49	-0.36	-0.37	-0.36	0.0	-0.2	-0.2
Rest of Curve & Convex	ity															-1.6	-1.6

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