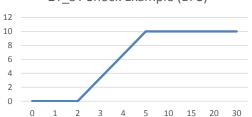
Sample Report Auto-Generated with PYTHON and random number

Scenario Analysis

FX Strategy (USD) (1%)

ACTIVE STRATEGIES	USDKRW +1%	USDKRW -1%	USDTWD +1%	USDTWD -1%
currency basket asia	18,835	(18,835)	9,769	(9,769)
Converted in USD	9,895	(9,895)	17,731	(17,731)
ACTIVE STRATEGIES	CADNZD +1%	CADNZD -1%	CADAUD +1%	CADAUD -1%
currency basket dollar bloc	13,829	(13,829)	7,424	(7,424)
Converted in USD	8,718	(8,718)	2,278	(2,278)
ACTIVE STRATEGIES	NOKSEK +1%	NOKSEK -1%		
currency basket euro	21,938	(21,938)	-	
Converted in USD	2.257	(2.257)	=	

2Y_5Y Shock Example (BPS)



Curve Strategy (10bps)

		1	1			77 (=0.0 0.07	1			1		
ACTIVE STRATEGIES	Steep2Y_5Y	Steep2Y_10Y	Steep2Y_15Y	Steep2Y_20Y	Steep2Y_30Y	Steep5Y_10Y	Steep5Y_15Y	Steep5Y_20Y	Steep5Y_30Y	Steep10Y_15Y	Steep10Y_20Y	Steep10Y_30Y
eur swap crv flat: 20y10y_15y5y	689	735	487	449	1,368	830	594	1,020	1,573	1,115	791	1,594
Summary (USD)	757	808	535	493	1,502	912	653	1,120	1,728	1,225	869	1,751
gbp swap crv flat: 10y20y_12y3y	1,970	1,454	2,893	3,097	2,595	1,602	2,422	2,209	1,863	2,474	2,448	2,078
Summary (USD)	2,441	1,802	3,587	3,839	3,216	1,986	3,002	2,739	2,309	3,066	3,034	2,576
usd swap crv flat: 2y20y_10y5y	2,134	3,159	1,785	2,217	1,670	1,885	3,115	1,818	2,574	1,671	2,142	2,592
usd swap crv flat: 2y20y_7y5y	1,288	1,415	1,351	1,924	1,842	2,740	2,031	1,215	2,474	500	1,816	1,946
usd swap crv steep: 2y2y_2y5y	2,221	1,822	2,428	2,264	2,447	2,294	2,315	2,857	2,121	2,235	3,238	1,936
usd swap crv steep: 1y3y_1y15y	3,002	2,477	4,532	3,640	2,909	2,944	2,780	2,419	3,171	3,002	1,359	2,878
usd swap crv steep: 3y2y_10y2y	1,913	325	745	1,398	681	1,469	416	827	804	1,737	372	1,452
usd swap crv steep: 1y5y_3y3y	457	537	959	1,526	1,184	282	360	917	1,028	1,486	1,676	927
usd swap crv steep: 3y3y_5y7y	1,008	970	884	1,718	1,460	1,464	1,799	920	560	1,047	693	1,328
Summary (USD)	12,022	10,704	12,683	14,686	12,192	13,079	12,815	10,973	12,734	11,678	11,296	13,060

ACTIVE STRATEGIES	Flat2Y_5Y	Flat2Y_10Y	Flat2Y_15Y	Flat2Y_20Y	Flat2Y_30Y	Flat5Y_10Y	Flat5Y_15Y	Flat5Y_20Y	Flat5Y_30Y	Flat10Y_15Y	Flat10Y_20Y	Flat10Y_30Y
eur swap crv flat: 20y10y_15y5y	669	1,063	1,042	680	247	1,712	963	758	1,559	121	1,360	1,025
Summary (USD)	735	1,168	1,145	747	271	1,881	1,058	833	1,713	133	1,494	1,126
gbp swap crv flat: 10y20y_12y3y	2,028	1,932	1,256	2,441	3,104	1,900	2,563	691	2,688	2,153	1,903	1,890
Summary (USD)	2,514	2,394	1,557	3,026	3,848	2,356	3,177	856	3,332	2,669	2,359	2,343
usd swap crv flat: 2y20y_10y5y	2,620	2,132	738	2,721	2,838	1,248	1,278	941	3,367	2,071	2,164	2,387
usd swap crv flat: 2y20y_7y5y	1,904	3,063	2,701	1,918	2,002	1,940	2,698	748	1,766	1,804	2,321	2,446
usd swap crv steep: 2y2y_2y5y	942	2,010	2,262	2,997	3,054	2,119	1,178	1,457	1,923	1,793	2,165	3,155
usd swap crv steep: 1y3y_1y15y	4,249	3,359	2,897	3,263	2,422	1,716	3,884	2,328	3,063	3,350	1,515	3,934
usd swap crv steep: 3y2y_10y2y	923	783	977	1,235	907	234	1,050	392	344	1,316	595	1,441
usd swap crv steep: 1y5y_3y3y	833	1,110	1,201	680	738	1,395	276	1,528	1,821	379	838	591
usd swap crv steep: 3y3y_5y7y	462	1,248	678	324	1,269	486	1,070	1,016	288	1,217	1,188	1,732
Summary (USD)	11,933	13,704	11,454	13,138	13,229	9,137	11,435	8,409	12,572	11,930	10,786	15,686

^{*} Shock applies to corresponding currency, ex: EUR curve strategy with Flat2Y_5Y will shock eur curve

9/29/2019

^{*} Shock amount is 10bps and linearly decrease to end point, ex: 2Y_5Y shock will shock 2Y up by 10bps and linear down to 0bps at 5Y

Curve Strategy Position Details (10bps)

ACTIVE POSITIONS	ACTIVE POSITIONS	Steep2Y_5Y	Steep2Y 10Y	Steep2Y_15Y	Steep2Y_20Y	Steep2Y_30Y	Steep5Y_10Y	Steep5Y_15Y	Steep5Y_20Y	Steep5Y_30Y	Steep10Y_15Y	Steep10Y 20Y	Steep10Y_30Y
	IRSUSD00501	345	906	790	378	415	494	856	72	768	373	421	515
USD_CV_2X20_10X5		951	782	634	378 997	529	523	884	345	768 504	286	801	982
USD_CV_2X20_10X5	IRSUSD00502												
USD_CV_2X20_10X5	IRSSUSDUSD2025	264	571	260	202	689	140	411	497	871	886	816	613
USD_CV_2X20_10X5	IRSUSD00602	575	899	101	640	36	729	965	904	430	126	105	483
USD_CV_2X20_7X5	IRSSUSDUSD2023	746	184	775	209	545	271	275	532	339	46	792	397
USD_CV_2X20_7X5	IRSUSD00701	114	52	95	955	166	950	85	335	658	50	859	277
USD_CV_2X20_7X5	IRSUSD00803	99	270	326	89	738	561	934	344	938	385	55	685
USD_CV_2X20_7X5	IRSUSD00802	328	908	155	670	393	957	737	3	539	18	110	587
USD_CV_2X2_2X5	IRSSUSDUSD2019	823	151	773	318	836	426	638	729	632	947	831	335
USD_CV_2X2_2X5	IRSSUSDUSD2019	420	972	376	727	562	414	822	878	595	997	750	452
USD_CV_2X2_2X5	IRSSUSDUSD2019	636	449	677	899	405	929	19	704	99	20	686	853
USD_CV_2X2_2X5	IRSSUSDUSD2019	342	250	601	321	644	525	835	546	795	272	971	296
USD_CV_1X3_1X15	IRSSUSDUSD2019	534	647	280	614	589	231	802	850	522	85	29	442
USD_CV_1X3_1X15	IRSSUSDUSD2019	330	691	469	941	725	891	753	56	628	670	202	643
USD_CV_1X3_1X15	IRSSUSDUSD2019	531	164	870	121	626	549	170	445	716	633	158	534
USD_CV_1X3_1X15	IRSSUSDUSD2019	512	633	990	335	903	424	132	285	102	21	397	800
USD_CV_1X3_1X15	IRSSUSDUSD2019	608	300	956	726	59	164	550	216	917	917	536	323
USD_CV_1X3_1X15	IRSSUSDUSD2019	487	42	968	903	8	686	372	566	285	677	37	135
USD_CV_3X2_10X2	IRSSUSDUSD2020	998	111	718	897	672	619	206	344	478	810	348	592
USD_CV_3X2_10X2	IRSSUSDUSD2027	915	214	27	501	9	850	210	483	327	927	23	861
USD CV 1X5 3X3	IRSSUSDUSD2019	428	515	10	754	464	254	83	278	672	904	948	660
USD CV 1X5 3X3	IRSSUSDUSD2021	29	22	949	772	720	28	277	639	356	581	728	267
USD CV 3X3 5X7	IRSSUSDUSD2022	902	659	808	743	822	692	961	581	218	880	66	457
USD_CV_3X3_5X7	IRSSUSDUSD2024	105	312	75	975	637	772	838	339	342	167	627	871
EUR CV 20X10 15X5	IRSEUR05801	446	581	461	176	771	137	589	201	765	695	366	901
EUR CV 20X10 15X5	IRSEUR05802	243	154	26	273	596	693	5	819	807	419	425	693
GBP CV 10X20 12X3	IRSGBP06201	247	170	794	945	6	564	392	630	167	330	693	741
GBP CV 10X20 12X3	IRSGBP06202	915	652	964	575	730	797	906	696	760	546	761	808
GBP CV 10X20 12X3	IRSGBP06301	610	193	828	834	859	194	841	825	686	641	275	472
GBP CV 10X20 12X3	IRSGBP06302	198	439	308	744	1,000	47	283	58	250	957	718	56
GDI _CV_10//20_12//3	11.3001 00302	150	455	300	/	1,000	77	203	30	250	55,	,10	30

ACTIVE POSITIONS	ACTIVE POSITIONS	Flat2Y_5Y	Flat2Y_10Y	Flat2Y_15Y	Flat2Y_20Y	Flat2Y_30Y	Flat5Y_10Y	Flat5Y_15Y	Flat5Y_20Y	Flat5Y_30Y	Flat10Y_15Y	Flat10Y_20Y	Flat10Y_30Y
USD_CV_2X20_10X5	IRSUSD00501	150	3	69	979	946	618	363	211	909	277	803	942
USD_CV_2X20_10X5	IRSUSD00502	855	804	219	690	764	553	450	136	820	772	540	686
USD_CV_2X20_10X5	IRSSUSDUSD2025	983	403	254	653	368	32	230	331	774	349	415	544
USD_CV_2X20_10X5	IRSUSD00602	633	922	196	398	760	45	236	263	863	673	405	214
USD_CV_2X20_7X5	IRSSUSDUSD2023	61	950	578	249	648	553	962	13	707	702	200	475
USD_CV_2X20_7X5	IRSUSD00701	838	808	920	287	845	888	98	221	211	381	984	728
USD_CV_2X20_7X5	IRSUSD00803	567	781	207	934	450	116	901	15	748	78	301	269
USD_CV_2X20_7X5	IRSUSD00802	437	524	996	449	59	382	737	499	101	644	836	974
USD_CV_2X2_2X5	IRSSUSDUSD2019	14	719	322	953	615	327	474	175	286	807	94	936
USD_CV_2X2_2X5	IRSSUSDUSD2019	255	931	686	928	798	693	13	231	680	120	615	465
USD_CV_2X2_2X5	IRSSUSDUSD2019	105	140	431	529	877	659	206	467	727	433	846	850
USD_CV_2X2_2X5	IRSSUSDUSD2019	568	220	823	586	764	440	485	584	231	432	610	904
USD_CV_1X3_1X15	IRSSUSDUSD2019	904	888	594	72	807	197	502	92	302	542	682	582
USD_CV_1X3_1X15	IRSSUSDUSD2019	781	638	701	265	386	514	296	635	432	399	35	815
USD_CV_1X3_1X15	IRSSUSDUSD2019	659	80	73	979	78	23	612	223	223	873	227	248
USD_CV_1X3_1X15	IRSSUSDUSD2019	513	74	272	991	5	136	945	631	675	781	139	810
USD_CV_1X3_1X15	IRSSUSDUSD2019	764	682	643	382	982	543	916	361	742	430	335	874
USD_CV_1X3_1X15	IRSSUSDUSD2019	626	995	614	574	164	303	612	385	689	326	97	605
USD_CV_3X2_10X2	IRSSUSDUSD2020	772	521	258	553	730	208	148	161	182	980	191	985
USD_CV_3X2_10X2	IRSSUSDUSD2027	152	262	718	682	177	26	902	231	161	337	405	456
USD_CV_1X5_3X3	IRSSUSDUSD2019	800	244	370	183	589	962	216	574	924	312	164	244
USD_CV_1X5_3X3	IRSSUSDUSD2021	33	866	831	496	149	433	60	954	897	67	674	347
USD_CV_3X3_5X7	IRSSUSDUSD2022	208	255	20	27	680	363	976	783	249	392	338	892
USD_CV_3X3_5X7	IRSSUSDUSD2024	254	992	658	297	589	123	94	233	39	824	850	840
EUR_CV_20X10_15X5	IRSEUR05801	78	655	209	460	104	896	677	572	948	102	942	442
EUR_CV_20X10_15X5	IRSEUR05802	591	408	833	219	143	816	286	186	611	19	418	583
GBP_CV_10X20_12X3	IRSGBP06201	778	810	176	689	501	958	992	49	607	682	52	320
GBP_CV_10X20_12X3	IRSGBP06202	498	338	129	712	985	605	68	47	638	191	587	606
GBP_CV_10X20_12X3	IRSGBP06301	50	293	641	954	806	175	764	410	935	870	866	486
GBP_CV_10X20_12X3	IRSGBP06302	702	490	310	86	812	162	739	184	508	410	399	479