

APPENDIX

Appendix A: Descriptive Statistics

Descriptive Statistic for Spread of EURO/USD

SPREAD :: EURO_USD_PAIR										
Date	TOTAL_OBS	MEAN	VAR	STD_DEV	KURTOSIS	SKEWNESS	JB_P_VALUE	JB_H_VALUE	KS_P_VALUE	KS_H_VALUE
6_2	128	0.000	0.000	0.000	9.125	2.059	0.001	1.000	0.000	TRUE
6_9	128	0.000	0.000	0.000	21.967	3.495	0.001	1.000	0.000	TRUE
6_16	128	0.000	0.000	0.000	10.383	1.938	0.001	1.000	0.000	TRUE
6_23	128	0.000	0.000	0.000	4.245	1.168	0.001	1.000	0.000	TRUE
6_30	128	0.000	0.000	0.000	5.149	1.383	0.001	1.000	0.000	TRUE
7_7	128	0.000	0.000	0.000	2.776	0.664	0.017	1.000	0.000	TRUE
7_14	128	0.000	0.000	0.000	7.056	1.690	0.001	1.000	0.000	TRUE
7_21	128	0.000	0.000	0.000	8.359	1.692	0.001	1.000	0.000	TRUE
7_28	128	0.000	0.000	0.000	6.077	1.500	0.001	1.000	0.000	TRUE
8_4	128	0.000	0.000	0.000	8.965	1.959	0.001	1.000	0.000	TRUE
8_11	128	0.000	0.000	0.000	5.341	1.307	0.001	1.000	0.000	TRUE
8_18	128	0.000	0.000	0.000	9.362	1.945	0.001	1.000	0.000	TRUE
8_25	128	0.000	0.000	0.000	6.863	1.742	0.001	1.000	0.000	TRUE
9_1	128	0.000	0.000	0.000	3.356	0.971	0.003	1.000	0.000	TRUE
9_8	128	0.000	0.000	0.000	4.758	1.330	0.001	1.000	0.000	TRUE
9_15	128	0.000	0.000	0.000	8.992	1.836	0.001	1.000	0.000	TRUE
9_22	128	0.000	0.000	0.000	7.591	1.690	0.001	1.000	0.000	TRUE
9_29	128	0.000	0.000	0.000	6.163	1.683	0.001	1.000	0.000	TRUE
10_6	128	0.000	0.000	0.000	3.845	1.183	0.001	1.000	0.000	TRUE
10_13	128	0.000	0.000	0.000	5.012	1.427	0.001	1.000	0.000	TRUE
10_20	128	0.000	0.000	0.000	10.329	2.090	0.001	1.000	0.000	TRUE
10_27	128	0.000	0.000	0.000	5.307	1.302	0.001	1.000	0.000	TRUE
11_3	128	0.000	0.000	0.000	7.320	1.670	0.001	1.000	0.000	TRUE
11_10	128	0.000	0.000	0.000	6.159	1.620	0.001	1.000	0.000	TRUE
11_17	128	0.000	0.000	0.000	3.829	0.944	0.002	1.000	0.000	TRUE
11_24	128	0.000	0.000	0.000	5.624	1.367	0.001	1.000	0.000	TRUE
12_1	128	0.000	0.000	0.000	4.519	1.189	0.001	1.000	0.000	TRUE
12_8	128	0.000	0.000	0.000	7.752	1.647	0.001	1.000	0.000	TRUE
12_15	128	0.000	0.000	0.000	5.506	1.525	0.001	1.000	0.000	TRUE
12_22	128	0.000	0.000	0.000	8.065	1.801	0.001	1.000	0.000	TRUE
12_29	128	0.000	0.000	0.000	6.416	1.730	0.001	1.000	0.000	TRUE

Descriptive Statistic for Spread of GBP/USD

SPREAD :: GBP_USD_PAIR										
Date	TOTAL_OBS	MEAN	VAR	STD_DEV	KURTOSIS	SKEWNESS	JB_P_VALUE	JB_H_VALUE	KS_P_VALUE	KS_H_VALUE
6_2	128	0.000	0.000	0.000	4.793	1.376	0.001	1.000	0.000	TRUE
6_9	128	0.000	0.000	0.000	5.363	1.484	0.001	1.000	0.000	TRUE
6_16	128	0.000	0.000	0.000	5.252	1.484	0.001	1.000	0.000	TRUE
6_23	128	0.000	0.000	0.000	5.668	1.345	0.001	1.000	0.000	TRUE
6_30	128	0.000	0.000	0.000	5.533	1.612	0.001	1.000	0.000	TRUE
7_7	128	0.000	0.000	0.000	4.936	1.168	0.001	1.000	0.000	TRUE
7_14	128	0.000	0.000	0.000	3.819	1.021	0.002	1.000	0.000	TRUE
7_21	128	0.000	0.000	0.000	3.632	1.076	0.001	1.000	0.000	TRUE
7_28	128	0.000	0.000	0.000	3.524	0.863	0.004	1.000	0.000	TRUE
8_4	128	0.000	0.000	0.000	3.116	0.786	0.008	1.000	0.000	TRUE
8_11	128	0.000	0.000	0.000	4.719	1.235	0.001	1.000	0.000	TRUE
8_18	128	0.000	0.000	0.000	4.309	1.181	0.001	1.000	0.000	TRUE
8_25	128	0.000	0.000	0.000	13.412	2.729	0.001	1.000	0.000	TRUE
9_1	128	0.000	0.000	0.000	7.167	1.940	0.001	1.000	0.000	TRUE
9_8	128	0.000	0.000	0.000	4.046	1.273	0.001	1.000	0.000	TRUE
9_15	128	0.000	0.000	0.000	7.448	1.642	0.001	1.000	0.000	TRUE
9_22	128	0.000	0.000	0.000	5.841	1.504	0.001	1.000	0.000	TRUE
9_29	128	0.000	0.000	0.000	6.165	1.642	0.001	1.000	0.000	TRUE
10_6	128	0.000	0.000	0.000	4.752	1.431	0.001	1.000	0.000	TRUE
10_13	128	0.000	0.000	0.000	8.659	2.056	0.001	1.000	0.000	TRUE
10_20	128	0.001	0.000	0.001	8.804	1.886	0.001	1.000	0.000	TRUE
10_27	128	0.001	0.000	0.001	7.212	1.762	0.001	1.000	0.000	TRUE
11_3	128	0.001	0.000	0.001	7.476	1.935	0.001	1.000	0.000	TRUE
11_10	128	0.000	0.000	0.000	9.060	2.140	0.001	1.000	0.000	TRUE
11_17	128	0.000	0.000	0.000	7.729	1.811	0.001	1.000	0.000	TRUE
11_24	128	0.001	0.000	0.000	4.107	1.191	0.001	1.000	0.000	TRUE
12_1	128	0.000	0.000	0.000	6.494	1.595	0.001	1.000	0.000	TRUE
12_8	128	0.000	0.000	0.000	6.576	1.810	0.001	1.000	0.000	TRUE
12_15	128	0.000	0.000	0.000	5.785	1.646	0.001	1.000	0.000	TRUE
12_22	128	0.001	0.000	0.000	3.935	1.013	0.001	1.000	0.000	TRUE
12_29	128	0.000	0.000	0.000	8.184	2.062	0.001	1.000	0.000	TRUE

Descriptive Statistic for Spread of YEN/USD

SPREAD :: YEN_USD_PAIR										
Date	TOTAL_OBS	MEAN	VAR	STD_DEV	KURTOSIS	SKEWNESS	JB_P_VALUE	JB_H_VALUE	KS_P_VALUE	KS_H_VALUE
6_2	128	0.000	0.000	0.000	4.431	1.193	0.001	1.000	0.000	TRUE
6_9	128	0.000	0.000	0.000	19.657	3.057	0.001	1.000	0.000	TRUE
6_16	128	0.000	0.000	0.000	4.347	1.196	0.001	1.000	0.000	TRUE
6_23	128	0.000	0.000	0.000	5.476	1.378	0.001	1.000	0.000	TRUE
6_30	128	0.000	0.000	0.000	3.728	0.904	0.003	1.000	0.000	TRUE
7_7	128	0.000	0.000	0.000	3.161	0.828	0.007	1.000	0.000	TRUE
7_14	128	0.000	0.000	0.000	8.769	1.759	0.001	1.000	0.000	TRUE
7_21	128	0.000	0.000	0.000	6.346	1.332	0.001	1.000	0.000	TRUE
7_28	128	0.000	0.000	0.000	6.907	1.554	0.001	1.000	0.000	TRUE
8_4	128	0.000	0.000	0.000	2.906	0.678	0.016	1.000	0.000	TRUE
8_11	128	0.000	0.000	0.000	4.526	1.132	0.001	1.000	0.000	TRUE
8_18	128	0.000	0.000	0.000	3.123	0.879	0.005	1.000	0.000	TRUE
8_25	128	0.000	0.000	0.000	11.545	2.287	0.001	1.000	0.000	TRUE
9_1	128	0.000	0.000	0.000	4.643	1.178	0.001	1.000	0.000	TRUE
9_8	128	0.000	0.000	0.000	4.179	1.183	0.001	1.000	0.000	TRUE
9_15	128	0.000	0.000	0.000	4.296	1.384	0.001	1.000	0.000	TRUE
9_22	128	0.000	0.000	0.000	4.301	1.264	0.001	1.000	0.000	TRUE
9_29	128	0.000	0.000	0.000	6.852	1.626	0.001	1.000	0.000	TRUE
10_6	128	0.000	0.000	0.000	7.277	1.603	0.001	1.000	0.000	TRUE
10_13	128	0.000	0.000	0.000	5.537	1.540	0.001	1.000	0.000	TRUE
10_20	128	0.000	0.000	0.000	12.539	2.546	0.001	1.000	0.000	TRUE
10_27	128	0.001	0.000	0.001	12.312	2.317	0.001	1.000	0.000	TRUE
11_3	128	0.000	0.000	0.000	5.557	1.538	0.001	1.000	0.000	TRUE
11_10	128	0.000	0.000	0.000	3.366	1.083	0.002	1.000	0.000	TRUE
11_17	128	0.000	0.000	0.000	3.944	1.161	0.001	1.000	0.000	TRUE
11_24	128	0.000	0.000	0.000	4.225	1.091	0.001	1.000	0.000	TRUE
12_1	128	0.000	0.000	0.000	3.650	0.892	0.003	1.000	0.000	TRUE
12_8	128	0.000	0.000	0.000	2.293	0.556	0.018	1.000	0.000	TRUE
12_15	128	0.000	0.000	0.000	3.254	1.076	0.002	1.000	0.000	TRUE
12_22	128	0.000	0.000	0.000	8.481	1.916	0.001	1.000	0.000	TRUE
12_29	128	0.000	0.000	0.000	4.356	1.148	0.001	1.000	0.000	TRUE

Descriptive Statistic for Volume of EURO/USD

VOLUME :: EURO_USD_PAIR										
Date	TOTAL_OBS	MEAN	VAR	STD_DEV	KURTOSIS	SKEWNESS	JB_P_VALUE	JB_H_VALUE	KS_P_VALUE	KS_H_VALUE
6_2	128	147.156	2646.306	51.442	2.485	0.307	0.123	0.000	0.000	TRUE
6_9	128	161.609	2104.523	45.875	2.914	0.318	0.257	0.000	0.000	TRUE
6_16	128	169.859	2628.594	51.270	3.945	0.762	0.005	1.000	0.000	TRUE
6_23	128	170.922	2132.183	46.176	2.335	0.314	0.074	0.000	0.000	TRUE
6_30	128	87.461	1869.369	43.236	2.114	0.137	0.071	0.000	0.000	TRUE
7_7	128	158.961	3360.684	57.971	3.727	0.801	0.005	1.000	0.000	TRUE
7_14	128	145.102	2686.454	51.831	2.913	0.517	0.047	1.000	0.000	TRUE
7_21	128	126.875	2626.378	51.248	4.121	0.612	0.007	1.000	0.000	TRUE
7_28	128	144.367	2171.258	46.597	3.389	0.407	0.078	0.000	0.000	TRUE
8_4	128	154.891	3195.578	56.529	6.204	1.375	0.001	1.000	0.000	TRUE
8_11	128	183.656	2932.542	54.153	2.973	0.026	0.500	0.000	0.000	TRUE
8_18	128	181.188	1661.902	40.766	3.378	0.207	0.364	0.000	0.000	TRUE
8_25	128	188.195	9056.426	95.165	27.893	4.275	0.001	1.000	0.000	TRUE
9_1	128	147.266	2011.094	44.845	3.479	0.505	0.035	1.000	0.000	TRUE
9_8	128	251.828	3623.907	60.199	2.943	0.122	0.500	0.000	0.000	TRUE
9_15	128	222.523	14824.740	121.757	2.380	-0.859	0.004	1.000	0.000	TRUE
9_22	128	137.891	6444.681	80.279	1.896	-0.586	0.008	1.000	0.000	TRUE
9_29	128	264.281	2531.275	50.312	2.637	0.129	0.500	0.000	0.000	TRUE
10_6	128	294.164	2660.122	51.576	3.923	-0.317	0.035	1.000	0.000	TRUE
10_13	128	261.375	3260.252	57.099	2.667	0.215	0.388	0.000	0.000	TRUE
10_20	128	292.977	6317.535	79.483	2.972	0.310	0.284	0.000	0.000	TRUE
10_27	128	318.875	5991.858	77.407	3.559	0.083	0.332	0.000	0.000	TRUE
11_3	128	245.781	6581.747	81.128	2.418	0.233	0.160	0.000	0.000	TRUE
11_10	128	219.070	4494.050	67.038	2.947	-0.088	0.500	0.000	0.000	TRUE
11_17	128	267.609	5182.791	71.992	2.760	0.083	0.500	0.000	0.000	TRUE
11_24	128	327.906	5286.448	72.708	2.393	-0.068	0.281	0.000	0.000	TRUE
12_1	128	284.008	5733.898	75.723	3.126	0.271	0.370	0.000	0.000	TRUE
12_8	128	254.016	5284.756	72.696	2.727	-0.238	0.380	0.000	0.000	TRUE
12_15	128	297.711	5999.624	77.457	2.481	0.072	0.395	0.000	0.000	TRUE
12_22	128	340.320	11018.629	104.970	2.755	0.573	0.030	1.000	0.000	TRUE
12_29	128	308.156	9775.802	98.873	2.538	0.217	0.267	0.000	0.000	TRUE

Descriptive Statistic for Volume of GBP/USD

VOLUME :: GBP_USD_PAIR										
Date	TOTAL_OBS	MEAN	VAR	STD_DEV	KURTOSIS	SKEWNESS	JB_P_VALUE	JB_H_VALUE	KS_P_VALUE	KS_H_VALUE
6_2	128	164.969	3250.566	57.014	2.993	0.281	0.361	0.000	0.000	TRUE
6_9	128	174.172	2645.954	51.439	2.702	0.254	0.325	0.000	0.000	TRUE
6_16	128	168.672	2645.167	51.431	2.558	0.108	0.468	0.000	0.000	TRUE
6_23	128	151.266	1767.141	42.037	2.274	0.111	0.149	0.000	0.000	TRUE
6_30	128	97.297	3026.006	55.009	2.455	0.382	0.068	0.000	0.000	TRUE
7_7	128	176.258	2777.027	52.698	3.220	0.347	0.172	0.000	0.000	TRUE
7_14	128	154.102	2730.045	52.250	2.245	0.000	0.152	0.000	0.000	TRUE
7_21	128	127.648	2091.332	45.731	3.622	0.546	0.022	1.000	0.000	TRUE
7_28	128	149.438	2246.752	47.400	3.008	0.548	0.038	1.000	0.000	TRUE
8_4	128	155.516	2707.779	52.036	4.582	1.006	0.001	1.000	0.000	TRUE
8_11	128	200.508	2794.016	52.858	2.693	0.111	0.500	0.000	0.000	TRUE
8_18	128	171.133	2341.738	48.392	3.034	0.280	0.364	0.000	0.000	TRUE
8_25	128	183.820	6313.188	79.456	23.984	3.815	0.001	1.000	0.000	TRUE
9_1	128	168.633	3656.833	60.472	2.436	0.154	0.257	0.000	0.000	TRUE
9_8	128	263.523	3371.700	58.066	3.403	0.381	0.093	0.000	0.000	TRUE
9_15	128	242.031	18116.550	134.598	2.394	-0.882	0.004	1.000	0.000	TRUE
9_22	128	146.617	7683.529	87.656	2.000	-0.547	0.011	1.000	0.000	TRUE
9_29	128	273.930	3467.152	58.883	2.405	0.146	0.234	0.000	0.000	TRUE
10_6	128	253.008	1731.094	41.606	3.654	-0.376	0.054	0.000	0.000	TRUE
10_13	128	295.336	4062.052	63.734	2.568	0.107	0.484	0.000	0.000	TRUE
10_20	128	305.383	6159.356	78.482	3.161	0.229	0.477	0.000	0.000	TRUE
10_27	128	287.969	5927.905	76.993	2.849	-0.009	0.500	0.000	0.000	TRUE
11_3	128	275.797	6058.982	77.839	2.207	-0.066	0.121	0.000	0.000	TRUE
11_10	128	246.953	4393.384	66.283	2.786	0.112	0.500	0.000	0.000	TRUE
11_17	128	278.727	5821.901	76.301	2.760	-0.061	0.500	0.000	0.000	TRUE
11_24	128	329.586	6351.914	79.699	2.570	-0.023	0.500	0.000	0.000	TRUE
12_1	128	284.031	5134.345	71.654	2.687	0.154	0.500	0.000	0.000	TRUE
12_8	128	267.008	4815.331	69.393	2.683	-0.116	0.500	0.000	0.000	TRUE
12_15	128	317.398	5581.328	74.708	2.525	0.023	0.491	0.000	0.000	TRUE
12_22	128	328.141	8297.996	91.093	2.827	0.329	0.217	0.000	0.000	TRUE
12_29	128	316.352	8467.348	92.018	2.867	0.388	0.131	0.000	0.000	TRUE

Descriptive Statistic for Volume of YEN/USD

VOLUME :: YEN_USD_PAIR										
Date	TOTAL_OBS	MEAN	VAR	STD_DEV	KURTOSIS	SKEWNESS	JB_P_VALUE	JB_H_VALUE	KS_P_VALUE	KS_H_VALUE
6_2	128	157.609	2498.476	49.985	2.382	0.274	0.110	0.000	0.000	TRUE
6_9	128	164.383	2196.679	46.869	2.743	-0.122	0.500	0.000	0.000	TRUE
6_16	128	179.438	2722.831	52.181	2.468	0.258	0.163	0.000	0.000	TRUE
6_23	128	177.539	2541.920	50.417	3.292	0.524	0.039	1.000	0.000	TRUE
6_30	128	88.844	1820.306	42.665	2.297	0.127	0.158	0.000	0.000	TRUE
7_7	128	154.680	2463.306	49.632	3.105	0.353	0.185	0.000	0.000	TRUE
7_14	128	118.070	1689.200	41.100	3.530	0.494	0.035	1.000	0.000	TRUE
7_21	128	99.852	1754.364	41.885	3.456	0.676	0.013	1.000	0.000	TRUE
7_28	128	107.602	1390.273	37.286	2.678	0.204	0.424	0.000	0.000	TRUE
8_4	128	134.609	2508.004	50.080	5.812	1.069	0.001	1.000	0.000	TRUE
8_11	128	152.484	2117.165	46.013	3.017	0.458	0.074	0.000	0.000	TRUE
8_18	128	124.406	1685.471	41.054	2.700	0.332	0.173	0.000	0.000	TRUE
8_25	128	146.828	11320.191	106.396	47.021	5.756	0.001	1.000	0.000	TRUE
9_1	128	135.039	1961.203	44.285	2.671	0.236	0.343	0.000	0.000	TRUE
9_8	128	214.063	3321.130	57.629	2.562	-0.219	0.285	0.000	0.000	TRUE
9_15	128	193.180	11732.889	108.318	2.299	-0.732	0.007	1.000	0.000	TRUE
9_22	128	116.625	4943.118	70.307	1.972	-0.428	0.017	1.000	0.000	TRUE
9_29	128	204.398	3389.738	58.221	2.462	0.141	0.300	0.000	0.000	TRUE
10_6	128	191.328	1903.230	43.626	2.994	-0.129	0.500	0.000	0.000	TRUE
10_13	128	225.156	3032.290	55.066	3.371	0.063	0.500	0.000	0.000	TRUE
10_20	128	248.094	5643.676	75.124	3.434	0.566	0.026	1.000	0.000	TRUE
10_27	128	322.445	6508.910	80.678	2.976	-0.237	0.496	0.000	0.000	TRUE
11_3	128	199.563	5679.272	75.361	2.095	-0.155	0.063	0.000	0.000	TRUE
11_10	128	159.859	2987.130	54.655	2.775	0.258	0.360	0.000	0.000	TRUE
11_17	128	231.430	6703.885	81.877	3.061	0.414	0.107	0.000	0.000	TRUE
11_24	128	268.891	5810.980	76.230	3.486	0.373	0.082	0.000	0.000	TRUE
12_1	128	207.523	4363.212	66.055	2.889	0.229	0.500	0.000	0.000	TRUE
12_8	128	196.930	4114.302	64.143	2.934	0.593	0.028	1.000	0.000	TRUE
12_15	128	207.188	5593.665	74.791	2.830	0.258	0.390	0.000	0.000	TRUE
12_22	128	206.352	9229.238	96.069	2.944	0.623	0.023	1.000	0.000	TRUE
12_29	128	182.961	7469.345	86.425	2.680	0.487	0.049	1.000	0.000	TRUE

Appendix B: Correlation Analysis Results

Correlation Values – EURO/USD – Spread & Volume

Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.211	0.383	0.216	0.062	0.050	-0.197	-0.873	-0.021
6_9	0.069	-0.078	0.162	0.242	-0.276	-0.810	-0.897	-0.227
6_16	0.226	0.430	0.532	0.775	0.759	0.779	0.859	0.623
6_23	0.121	0.288	0.334	0.504	0.646	0.644	0.484	0.432
6_30	0.080	0.096	0.199	0.134	0.193	-0.109	-0.346	0.035
7_7	-0.079	-0.025	0.083	-0.012	-0.065	-0.425	-0.541	-0.152
7_14	0.223	0.226	0.232	0.189	-0.194	-0.646	-0.909	-0.126
7_21	0.065	0.071	0.086	0.036	0.115	0.134	0.507	0.145
7_28	0.280	0.218	0.116	0.154	0.382	0.635	0.736	0.360
8_4	0.020	0.308	0.516	0.344	0.545	0.926	0.666	0.475
8_11	0.230	0.337	0.324	0.513	0.688	0.744	0.775	0.516
8_18	0.188	0.350	0.321	0.548	0.730	0.273	0.269	0.383
8_25	0.267	0.288	0.138	0.058	0.638	0.662	0.256	0.330
9_1	0.203	0.260	0.409	0.640	0.522	0.569	0.907	0.501
9_8	0.254	0.332	0.508	0.720	0.732	0.576	-0.407	0.388
9_15	0.124	0.120	0.506	0.707	0.799	0.782	0.965	0.572
9_22	0.248	0.234	0.308	0.430	0.618	0.797	0.794	0.490
9_29	0.274	0.378	0.416	0.513	0.429	0.128	0.212	0.336
10_6	-0.014	0.032	0.140	0.525	0.690	0.565	-0.308	0.233
10_13	0.214	0.284	0.332	0.525	0.628	0.409	-0.386	0.287
10_20	0.099	0.431	0.566	0.554	0.636	0.869	0.876	0.576
10_27	0.186	0.380	0.544	0.704	0.635	0.358	0.945	0.536
11_3	0.227	0.250	0.277	0.414	0.744	0.610	0.909	0.490
11_10	-0.003	0.054	0.258	0.415	0.472	0.726	0.658	0.369
11_17	0.352	0.461	0.269	0.498	0.564	0.456	0.394	0.427
11_24	0.255	0.257	0.219	-0.034	-0.450	-0.168	0.212	0.042
12_1	0.273	0.358	0.522	0.586	0.382	0.676	0.727	0.503
12_8	0.217	0.292	0.623	0.677	0.512	0.472	0.843	0.519
12_15	0.382	0.305	0.387	0.388	0.362	0.631	0.936	0.484
12_22	0.189	0.467	0.560	0.765	0.555	0.884	0.981	0.629
12_29	0.202	0.383	0.521	0.610	0.652	0.798	0.867	0.576
AVG by period	0.180	0.264	0.343	0.425	0.442	0.411	0.358	

Correlation Values – GBP/USD – Spread and Volume

Date	D1	D2	D3	D4	D5	D6	D7	AVG by Day
6_2	0.143	0.287	0.371	0.491	0.577	0.150	-0.500	0.217
6_9	0.117	0.171	0.031	-0.059	-0.410	-0.885	-0.986	-0.289
6_16	0.162	0.253	0.503	0.573	0.716	0.788	0.797	0.542
6_23	0.123	0.256	0.241	0.331	0.504	0.305	0.134	0.271
6_30	0.145	0.053	0.366	0.571	0.632	0.356	0.339	0.352
7_7	0.090	0.145	0.401	0.550	0.734	0.627	-0.037	0.358
7_14	0.179	0.247	0.175	0.204	0.064	-0.363	-0.859	-0.050
7_21	-0.004	0.160	0.297	0.326	0.402	0.143	0.297	0.232
7_28	0.257	0.359	0.358	0.287	0.470	0.174	-0.233	0.239
8_4	0.069	0.263	0.398	0.393	0.324	0.522	-0.112	0.265
8_11	0.122	0.275	0.390	0.591	0.616	0.628	0.774	0.485
8_18	0.305	0.316	0.270	0.217	0.266	0.182	0.514	0.296
8_25	0.396	0.436	0.236	0.381	0.371	0.306	-0.032	0.299
9_1	0.311	0.426	0.666	0.692	0.698	0.860	0.916	0.653
9_8	0.262	0.353	0.567	0.697	0.786	0.742	0.046	0.493
9_15	0.009	0.229	0.659	0.744	0.815	0.720	0.805	0.569
9_22	0.251	0.111	0.275	0.335	0.135	0.159	0.834	0.300
9_29	0.296	0.388	0.617	0.519	0.496	0.825	0.606	0.535
10_6	0.074	0.084	0.159	0.379	0.532	0.267	-0.255	0.177
10_13	0.319	0.416	0.439	0.482	0.410	0.611	0.869	0.506
10_20	0.048	0.284	0.506	0.600	0.826	0.957	0.977	0.600
10_27	0.190	0.333	0.557	0.541	0.796	0.760	0.981	0.594
11_3	0.265	0.261	0.274	0.319	0.491	0.625	0.983	0.460
11_10	0.366	0.408	0.524	0.605	0.249	0.457	0.935	0.506
11_17	0.310	0.528	0.549	0.568	0.688	0.830	0.961	0.634
11_24	0.121	0.278	0.392	0.353	0.595	0.893	0.912	0.506
12_1	0.245	0.449	0.448	0.588	0.672	0.703	0.943	0.578
12_8	0.189	0.297	0.550	0.731	0.747	0.509	-0.571	0.350
12_15	0.245	0.306	0.566	0.602	0.715	0.618	0.938	0.570
12_22	0.358	0.346	0.390	0.524	0.535	0.500	0.937	0.513
12_29	0.261	0.313	0.292	0.343	0.383	0.901	0.961	0.493
AVG by period	0.201	0.291	0.402	0.467	0.511	0.480	0.415	

Correlation Values – YEN/USD – Spread and Volume

Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.100	0.224	0.205	0.121	0.203	0.127	-0.694	0.041
6_9	-0.077	-0.026	-0.030	0.029	0.059	-0.602	-0.681	-0.190
6_16	0.286	0.462	0.559	0.563	0.513	0.248	0.451	0.440
6_23	0.141	0.226	0.319	0.400	0.513	0.861	0.642	0.443
6_30	0.279	0.277	0.399	0.301	0.187	-0.223	-0.724	0.071
7_7	0.153	0.327	0.413	0.235	0.345	0.609	0.026	0.301
7_14	-0.001	-0.072	0.125	0.159	0.181	-0.327	-0.819	-0.108
7_21	0.297	0.296	0.120	-0.034	-0.208	0.104	0.217	0.113
7_28	0.211	0.204	0.311	0.175	-0.183	-0.166	-0.695	-0.020
8_4	0.008	0.093	0.148	0.212	-0.051	-0.116	-0.096	0.028
8_11	0.232	0.224	0.113	-0.111	0.432	0.124	-0.566	0.064
8_18	0.060	0.114	0.144	0.116	-0.130	-0.224	0.584	0.095
8_25	0.194	0.351	0.169	0.495	0.705	0.866	0.899	0.526
9_1	0.343	0.425	0.553	0.653	0.868	0.839	-0.532	0.450
9_8	0.343	0.361	0.428	0.591	0.511	0.583	0.888	0.529
9_15	0.395	0.369	0.465	0.616	0.732	0.796	0.960	0.619
9_22	0.183	0.252	0.246	0.288	0.176	0.198	0.317	0.237
9_29	0.164	0.158	0.181	0.567	0.600	0.238	0.726	0.376
10_6	0.181	0.198	0.272	0.266	0.632	0.925	0.969	0.492
10_13	0.270	0.274	0.318	0.257	0.288	0.272	-0.039	0.234
10_20	0.012	0.128	0.200	0.357	0.353	0.749	0.973	0.396
10_27	0.040	0.131	0.509	0.691	0.625	0.393	0.849	0.463
11_3	0.231	0.498	0.532	0.409	0.452	0.791	0.903	0.545
11_10	0.294	0.435	0.519	0.641	0.418	-0.023	-0.775	0.216
11_17	0.260	0.348	0.553	0.624	0.692	0.738	0.828	0.578
11_24	0.241	0.234	0.410	0.424	0.666	0.781	0.943	0.528
12_1	0.272	0.204	0.238	-0.086	-0.103	0.411	-0.222	0.102
12_8	0.208	0.318	0.306	0.654	0.724	0.341	0.452	0.429
12_15	0.177	0.418	0.521	0.619	0.626	0.842	0.831	0.576
12_22	0.269	0.358	0.509	0.517	0.512	0.537	0.428	0.447
12_29	0.247	0.243	0.314	0.166	0.323	0.708	0.588	0.370
AVG by period	0.194	0.260	0.325	0.352	0.376	0.368	0.246	

Correlation Values – SPREAD – EURO/USD and GBP/USD

Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.092	0.173	0.107	0.119	0.596	0.658	0.781	0.361
6_9	0.549	0.538	0.454	0.494	0.686	0.895	0.964	0.654
6_16	0.290	0.297	0.441	0.688	0.765	0.780	0.932	0.599
6_23	-0.019	0.028	-0.126	0.099	-0.049	0.194	0.067	0.028
6_30	0.371	0.327	0.171	0.123	0.408	0.726	0.195	0.332
7_7	0.106	0.087	0.301	0.445	0.357	0.360	0.822	0.354
7_14	0.250	0.282	0.436	0.125	0.140	0.419	0.904	0.365
7_21	-0.032	0.154	0.169	0.012	-0.259	-0.182	0.729	0.085
7_28	0.213	0.355	0.206	-0.026	-0.013	0.148	-0.158	0.104
8_4	0.232	0.305	0.336	0.412	0.542	0.719	0.029	0.368
8_11	0.189	0.305	0.301	0.648	0.895	0.773	0.907	0.574
8_18	0.273	0.265	0.196	0.133	0.619	0.717	0.664	0.409
8_25	0.437	0.479	0.611	0.579	0.502	-0.009	-0.423	0.311
9_1	0.216	0.185	0.096	0.387	0.294	0.804	0.934	0.417
9_8	0.367	0.558	0.591	0.739	0.683	0.743	0.845	0.646
9_15	0.711	0.689	0.695	0.799	0.808	0.861	0.788	0.764
9_22	0.553	0.663	0.649	0.427	0.152	0.295	0.892	0.519
9_29	0.508	0.499	0.502	0.304	0.210	0.110	0.266	0.343
10_6	0.312	0.275	0.390	0.493	0.625	0.418	0.324	0.405
10_13	0.475	0.535	0.670	0.644	0.629	0.664	0.409	0.575
10_20	0.667	0.530	0.599	0.479	0.645	0.890	0.925	0.676
10_27	0.393	0.378	0.462	0.610	0.577	0.780	0.939	0.591
11_3	0.428	0.183	0.181	0.494	0.639	0.642	0.918	0.498
11_10	0.221	0.348	0.411	0.509	0.135	-0.192	0.471	0.272
11_17	0.281	0.283	0.294	0.465	0.696	0.842	0.555	0.488
11_24	0.386	0.357	0.412	0.334	-0.059	0.060	0.291	0.254
12_1	0.357	0.285	0.333	0.220	-0.368	0.142	0.618	0.227
12_8	0.399	0.333	0.522	0.406	0.169	-0.322	-0.292	0.173
12_15	0.229	0.314	0.366	0.499	0.663	0.614	0.912	0.514
12_22	0.459	0.544	0.463	0.584	0.599	0.495	0.205	0.478
12_29	0.516	0.371	0.381	0.378	0.179	0.674	0.861	0.480
AVG by period	0.336	0.352	0.375	0.407	0.402	0.475	0.557	

Correlation Values – SPREAD – GBP/USD and YEN/USD

Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	-0.034	0.123	0.071	0.107	0.372	0.540	0.721	0.271
6_9	0.324	0.273	0.000	0.280	0.239	0.523	0.946	0.369
6_16	-0.131	0.066	0.238	0.404	0.270	0.181	0.130	0.165
6_23	-0.076	-0.198	-0.128	0.184	0.129	0.180	-0.365	-0.039
6_30	0.174	0.066	0.087	0.246	0.039	-0.359	-0.229	0.003
7_7	-0.052	0.068	0.284	0.263	0.052	0.181	-0.297	0.071
7_14	0.091	-0.064	0.003	-0.254	-0.446	-0.172	0.558	-0.040
7_21	0.040	0.139	0.258	-0.089	-0.381	0.161	-0.564	-0.062
7_28	-0.033	0.002	0.364	0.273	0.388	0.176	0.150	0.189
8_4	0.165	0.171	-0.018	-0.130	-0.303	-0.078	0.689	0.071
8_11	0.005	0.111	-0.015	-0.057	0.351	0.372	-0.637	0.018
8_18	-0.059	-0.027	-0.014	0.020	-0.026	-0.008	-0.569	-0.098
8_25	0.477	0.609	0.627	0.613	0.488	0.191	-0.028	0.425
9_1	0.139	0.249	0.441	0.463	0.102	-0.342	-0.826	0.032
9_8	-0.087	-0.023	0.101	0.459	0.071	0.085	0.341	0.135
9_15	0.077	0.326	0.398	0.552	0.420	0.289	0.456	0.360
9_22	0.111	0.163	0.174	0.120	0.235	0.011	0.165	0.140
9_29	0.066	0.111	0.160	0.337	0.203	-0.237	0.530	0.167
10_6	0.004	-0.087	0.112	0.088	0.257	0.750	0.719	0.263
10_13	0.072	-0.025	-0.181	-0.240	-0.212	-0.607	-0.710	-0.272
10_20	-0.099	0.160	0.260	0.107	0.305	0.340	0.904	0.283
10_27	0.186	0.053	0.084	0.216	0.049	-0.168	0.850	0.181
11_3	0.376	0.379	0.337	0.338	0.053	0.014	0.785	0.326
11_10	0.179	0.157	0.351	0.174	0.290	0.152	-0.501	0.115
11_17	-0.054	-0.037	0.146	0.295	0.626	0.846	0.663	0.355
11_24	-0.097	0.073	0.308	0.554	0.669	0.779	0.914	0.457
12_1	0.003	0.017	-0.177	-0.385	-0.749	-0.532	-0.857	-0.383
12_8	-0.008	-0.079	0.121	0.367	0.282	-0.336	-0.775	-0.061
12_15	0.033	-0.090	-0.019	-0.020	0.046	0.453	0.329	0.105
12_22	-0.174	-0.156	-0.123	0.042	0.140	0.627	0.851	0.172
12_29	-0.017	-0.174	-0.003	0.080	0.120	0.099	0.337	0.063
AVG by period	0.052	0.076	0.137	0.174	0.132	0.133	0.151	

Correlation Values – SPREAD – EURO/USD and YEN/USD

Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.414	0.437	0.483	0.496	0.672	0.919	0.854	0.611
6_9	0.586	0.572	0.586	0.611	0.427	0.580	0.944	0.615
6_16	0.132	0.375	0.422	0.487	0.349	0.144	0.038	0.278
6_23	0.151	0.128	0.259	0.276	0.283	0.570	0.186	0.265
6_30	0.298	0.320	0.316	0.131	0.307	-0.081	0.034	0.189
7_7	-0.139	-0.009	0.232	0.258	-0.338	-0.418	-0.434	-0.121
7_14	0.374	0.335	0.236	0.311	0.026	0.403	0.674	0.337
7_21	-0.159	-0.089	-0.052	-0.061	-0.049	-0.738	-0.704	-0.264
7_28	0.373	0.126	0.356	0.283	0.144	0.156	-0.787	0.093
8_4	0.105	0.174	0.058	-0.026	-0.019	0.017	-0.444	-0.019
8_11	0.190	0.120	0.201	-0.011	0.243	0.067	-0.689	0.017
8_18	0.009	-0.017	-0.033	0.048	0.130	-0.038	-0.826	-0.104
8_25	0.476	0.506	0.524	0.611	0.855	0.806	0.217	0.571
9_1	0.162	0.354	0.248	0.523	0.006	-0.480	-0.757	0.008
9_8	0.020	0.143	0.104	0.423	0.232	0.405	0.507	0.262
9_15	0.184	0.225	0.274	0.529	0.605	0.597	0.884	0.471
9_22	0.078	0.143	0.053	-0.074	-0.242	-0.152	0.122	-0.010
9_29	0.009	-0.068	-0.167	-0.169	0.354	0.626	0.580	0.167
10_6	-0.141	0.024	0.001	0.017	0.135	0.420	0.428	0.126
10_13	0.136	0.094	-0.105	0.095	0.197	-0.072	0.200	0.078
10_20	-0.098	0.079	0.095	-0.164	-0.009	0.400	0.886	0.170
10_27	0.099	0.038	0.134	0.432	0.226	0.170	0.867	0.281
11_3	0.313	0.316	0.418	0.353	0.150	0.370	0.899	0.403
11_10	0.026	-0.051	0.319	0.325	0.166	-0.463	-0.808	-0.070
11_17	0.063	0.140	0.279	0.503	0.650	0.733	0.285	0.379
11_24	0.009	-0.037	0.185	0.012	-0.306	0.181	0.308	0.050
12_1	-0.015	-0.069	-0.026	0.127	0.544	0.465	-0.368	0.094
12_8	0.007	0.055	0.077	0.168	0.057	-0.293	0.128	0.028
12_15	-0.051	0.131	0.080	-0.016	-0.290	0.012	0.449	0.045
12_22	0.017	0.098	0.286	0.355	0.175	0.491	0.505	0.275
12_29	0.136	0.065	0.230	0.212	-0.094	-0.461	0.532	0.089
AVG by period	0.121	0.150	0.196	0.228	0.180	0.172	0.152	

Correlation Values – VOLUME – EURO/USD and GBP/USD

Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.580	0.599	0.461	0.345	0.618	0.781	0.991	0.625
6_9	0.641	0.761	0.799	0.874	0.876	0.896	0.978	0.832
6_16	0.561	0.606	0.723	0.745	0.905	0.942	0.938	0.774
6_23	0.512	0.559	0.674	0.717	0.765	0.726	0.685	0.662
6_30	0.714	0.688	0.816	0.828	0.837	0.913	0.986	0.826
7_7	0.656	0.658	0.571	0.693	0.890	0.815	-0.079	0.600
7_14	0.540	0.672	0.820	0.828	0.832	0.907	0.954	0.793
7_21	0.577	0.626	0.666	0.735	0.680	0.881	0.986	0.736
7_28	0.655	0.633	0.633	0.774	0.897	0.834	0.893	0.760
8_4	0.735	0.753	0.791	0.856	0.876	0.908	0.836	0.822
8_11	0.570	0.645	0.673	0.791	0.710	0.825	0.969	0.741
8_18	0.498	0.525	0.626	0.801	0.767	0.670	0.896	0.683
8_25	0.867	0.928	0.937	0.876	0.895	0.862	0.889	0.893
9_1	0.487	0.719	0.779	0.783	0.754	0.839	0.897	0.751
9_8	0.747	0.797	0.828	0.897	0.859	0.866	0.744	0.820
9_15	0.804	0.877	0.956	0.969	0.978	0.992	0.997	0.939
9_22	0.768	0.744	0.841	0.958	0.981	0.995	0.999	0.898
9_29	0.590	0.710	0.829	0.852	0.875	0.852	0.691	0.771
10_6	0.706	0.673	0.701	0.698	0.830	0.963	0.928	0.786
10_13	0.716	0.781	0.737	0.806	0.937	0.909	0.675	0.795
10_20	0.800	0.699	0.755	0.831	0.965	0.965	0.995	0.858
10_27	0.649	0.711	0.690	0.772	0.686	0.485	0.960	0.708
11_3	0.713	0.701	0.653	0.711	0.730	0.907	0.991	0.772
11_10	0.735	0.814	0.763	0.624	0.744	0.948	0.982	0.801
11_17	0.661	0.755	0.857	0.926	0.866	0.887	0.979	0.847
11_24	0.756	0.815	0.815	0.792	0.886	0.900	0.889	0.836
12_1	0.637	0.610	0.672	0.749	0.808	0.592	0.941	0.715
12_8	0.595	0.552	0.780	0.922	0.901	0.883	0.977	0.802
12_15	0.769	0.697	0.819	0.799	0.730	0.756	0.912	0.783
12_22	0.712	0.779	0.857	0.866	0.608	0.635	0.097	0.650
12_29	0.841	0.823	0.821	0.879	0.891	0.977	0.980	0.887
AVG by period	0.671	0.707	0.753	0.797	0.825	0.849	0.857	

Correlation Values – VOLUME – GBP/USD and YEN/USD

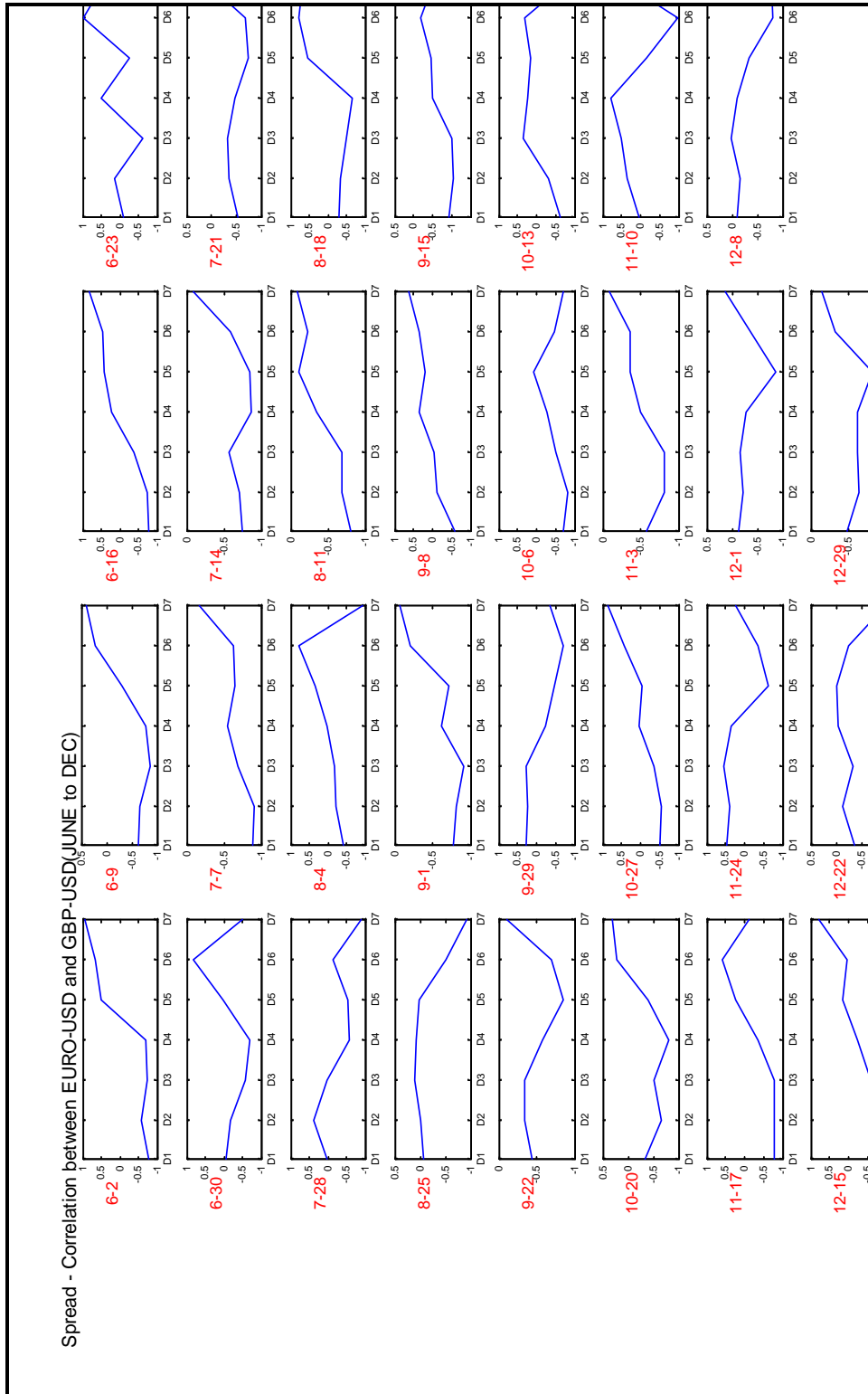
Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.497	0.615	0.537	0.436	0.485	0.726	0.983	0.611
6_9	0.373	0.449	0.694	0.810	0.713	0.746	0.804	0.656
6_16	0.460	0.461	0.660	0.763	0.836	0.962	0.971	0.730
6_23	0.476	0.433	0.534	0.635	0.797	0.806	0.869	0.650
6_30	0.443	0.353	0.539	0.694	0.775	0.860	0.964	0.661
7_7	0.551	0.490	0.440	0.748	0.934	0.922	-0.036	0.578
7_14	0.408	0.494	0.522	0.543	0.733	0.939	0.968	0.658
7_21	0.469	0.521	0.578	0.532	0.512	0.768	0.994	0.625
7_28	0.424	0.515	0.603	0.450	0.629	0.602	0.874	0.585
8_4	0.557	0.696	0.714	0.785	0.904	0.926	0.912	0.785
8_11	0.203	0.555	0.691	0.786	0.575	0.725	0.958	0.642
8_18	0.315	0.310	0.598	0.715	0.625	0.368	0.045	0.425
8_25	0.768	0.876	0.893	0.863	0.917	0.915	0.907	0.877
9_1	0.297	0.642	0.654	0.611	0.418	0.246	0.795	0.523
9_8	0.650	0.536	0.573	0.665	0.426	0.411	-0.053	0.458
9_15	0.709	0.816	0.896	0.915	0.961	0.964	0.968	0.890
9_22	0.436	0.384	0.476	0.756	0.952	0.989	0.998	0.713
9_29	0.395	0.398	0.346	0.445	0.416	0.477	0.472	0.421
10_6	0.493	0.441	0.357	0.421	0.570	0.286	-0.787	0.254
10_13	0.410	0.388	0.398	0.401	0.477	0.013	-0.448	0.234
10_20	0.421	0.322	0.463	0.512	0.588	0.763	0.963	0.576
10_27	0.410	0.378	0.403	0.497	0.365	0.250	0.866	0.453
11_3	0.554	0.436	0.269	0.083	0.608	0.844	0.977	0.539
11_10	0.439	0.401	0.401	0.301	0.275	0.455	0.706	0.426
11_17	0.506	0.660	0.669	0.729	0.718	0.891	0.966	0.734
11_24	0.445	0.454	0.466	0.496	0.894	0.972	0.996	0.675
12_1	0.333	0.374	0.419	0.632	0.624	0.256	0.748	0.484
12_8	0.396	0.291	0.467	0.543	0.714	0.682	0.937	0.576
12_15	0.445	0.388	0.444	0.514	0.560	0.480	0.778	0.516
12_22	0.357	0.415	0.417	0.547	0.343	0.497	-0.026	0.364
12_29	0.555	0.513	0.482	0.625	0.516	0.497	0.903	0.584
AVG by period	0.458	0.484	0.536	0.595	0.641	0.653	0.676	

Correlation Values – VOLUME – EURO/USD and YEN/USD

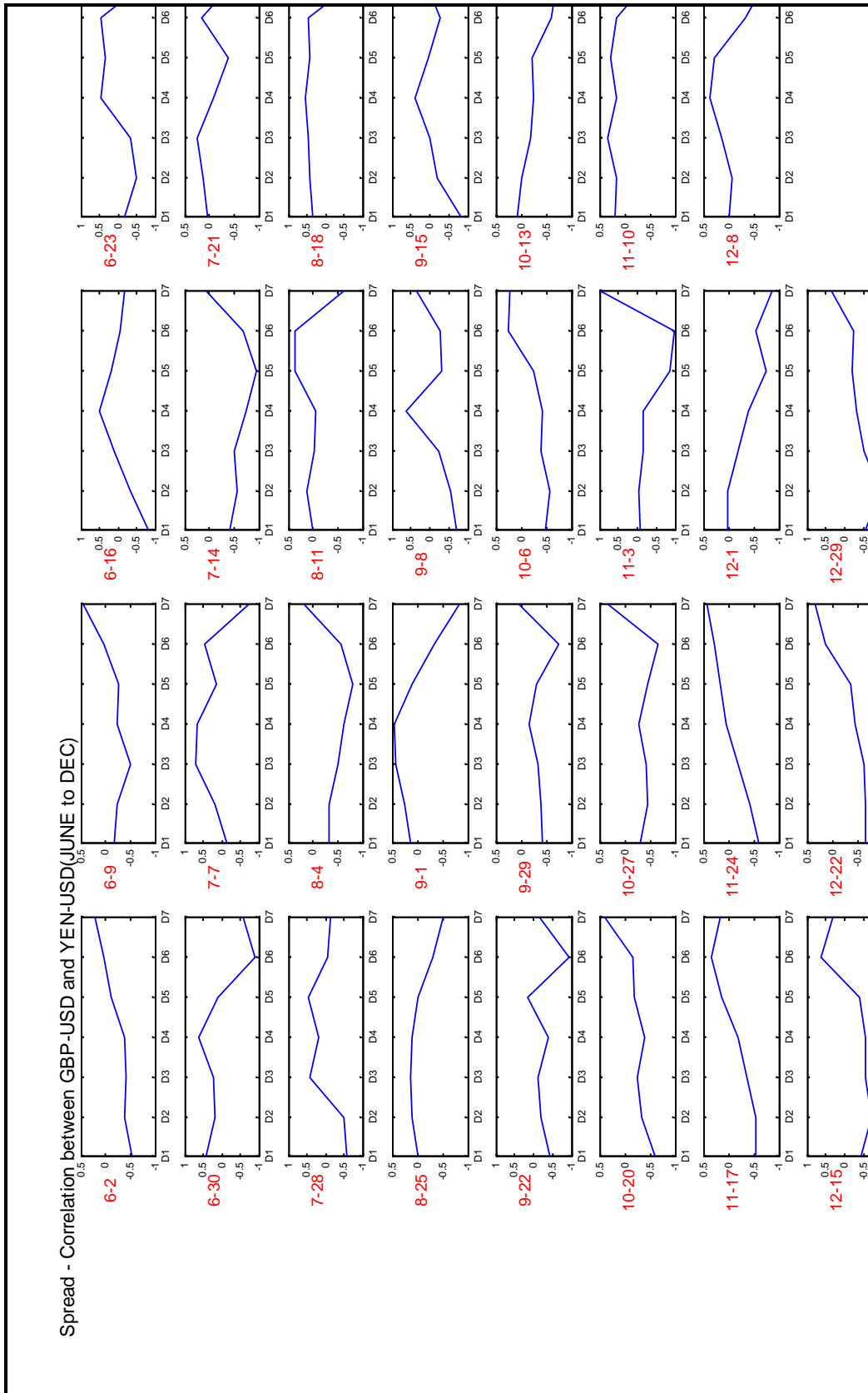
Date	D1	D2	D3	D4	D5	D6	D7	AVG by day
6_2	0.537	0.584	0.481	0.687	0.840	0.955	0.995	0.725
6_9	0.442	0.557	0.696	0.864	0.845	0.880	0.888	0.739
6_16	0.530	0.594	0.685	0.840	0.890	0.976	0.985	0.786
6_23	0.674	0.720	0.747	0.795	0.912	0.893	0.870	0.802
6_30	0.552	0.569	0.656	0.835	0.929	0.961	0.993	0.785
7_7	0.597	0.627	0.613	0.805	0.898	0.867	0.939	0.764
7_14	0.667	0.617	0.587	0.623	0.842	0.970	0.990	0.757
7_21	0.528	0.635	0.672	0.747	0.761	0.918	0.985	0.749
7_28	0.560	0.599	0.650	0.641	0.791	0.898	0.983	0.732
8_4	0.583	0.690	0.784	0.804	0.806	0.892	0.928	0.784
8_11	0.473	0.656	0.688	0.830	0.939	0.958	0.994	0.791
8_18	0.472	0.614	0.690	0.878	0.823	0.424	-0.188	0.530
8_25	0.832	0.937	0.921	0.883	0.946	0.983	0.995	0.928
9_1	0.516	0.756	0.777	0.719	0.597	0.579	0.934	0.697
9_8	0.646	0.649	0.697	0.768	0.675	0.731	0.477	0.663
9_15	0.718	0.856	0.906	0.952	0.984	0.978	0.982	0.911
9_22	0.580	0.566	0.613	0.816	0.950	0.988	0.995	0.787
9_29	0.511	0.535	0.400	0.521	0.566	0.761	0.893	0.598
10_6	0.549	0.482	0.345	0.421	0.491	0.298	-0.730	0.265
10_13	0.474	0.517	0.548	0.653	0.582	0.258	0.333	0.481
10_20	0.571	0.495	0.628	0.611	0.685	0.878	0.972	0.691
10_27	0.583	0.558	0.595	0.801	0.870	0.942	0.954	0.758
11_3	0.579	0.527	0.341	0.307	0.589	0.678	0.950	0.567
11_10	0.495	0.451	0.440	0.634	0.674	0.620	0.795	0.587
11_17	0.609	0.703	0.714	0.767	0.764	0.935	0.989	0.783
11_24	0.533	0.550	0.553	0.471	0.804	0.894	0.889	0.670
12_1	0.507	0.562	0.593	0.769	0.913	0.907	0.913	0.738
12_8	0.438	0.337	0.406	0.445	0.630	0.808	0.975	0.577
12_15	0.494	0.526	0.654	0.719	0.662	0.802	0.957	0.688
12_22	0.522	0.539	0.561	0.576	0.628	0.905	0.980	0.673
12_29	0.588	0.596	0.528	0.621	0.613	0.605	0.830	0.626
AVG by period	0.560	0.600	0.618	0.703	0.771	0.811	0.821	

Appendix C: Correlation Charts (By Individual Dates)

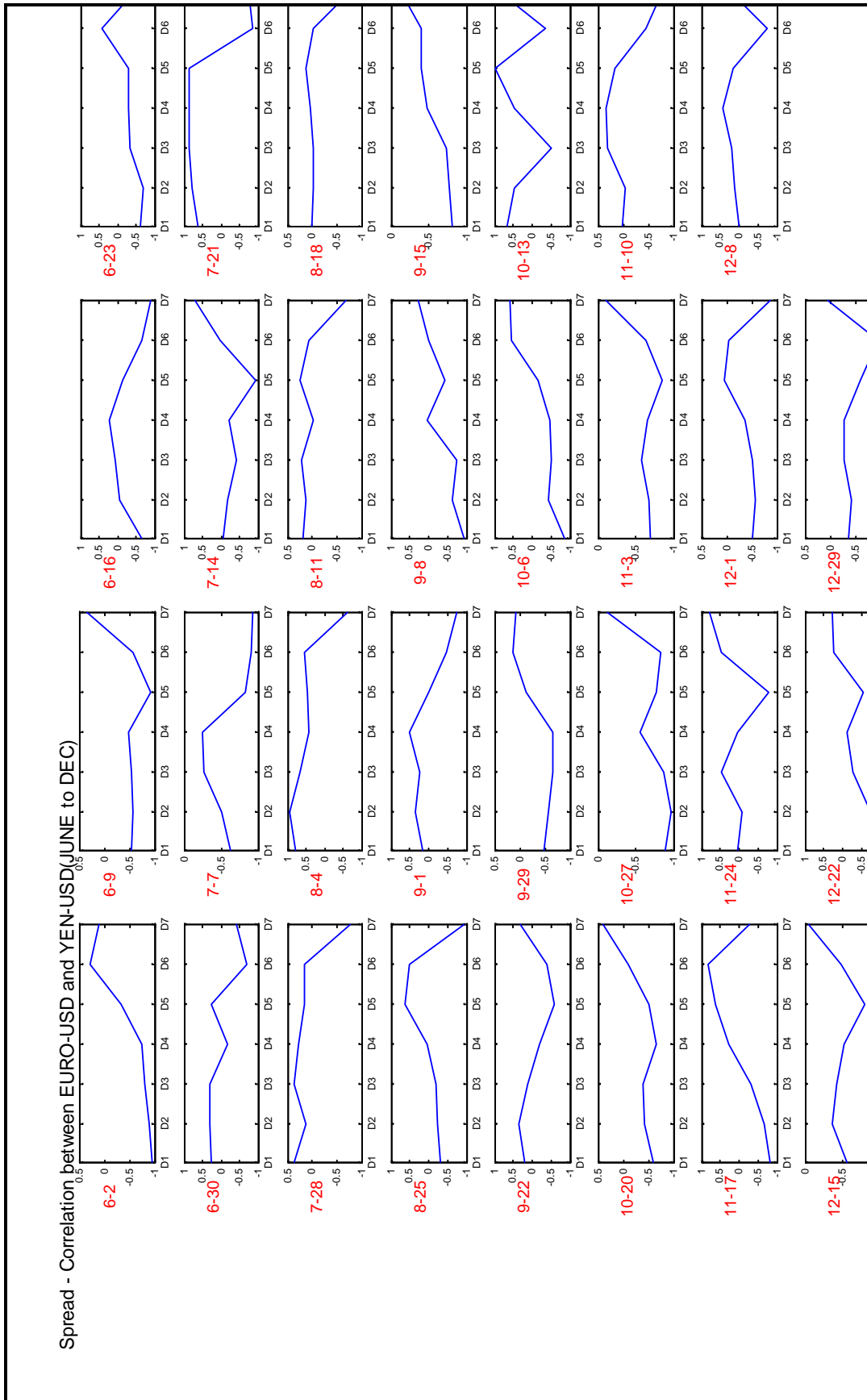
Correlation Charts – SPREAD – EURO/USD and GBP/USD



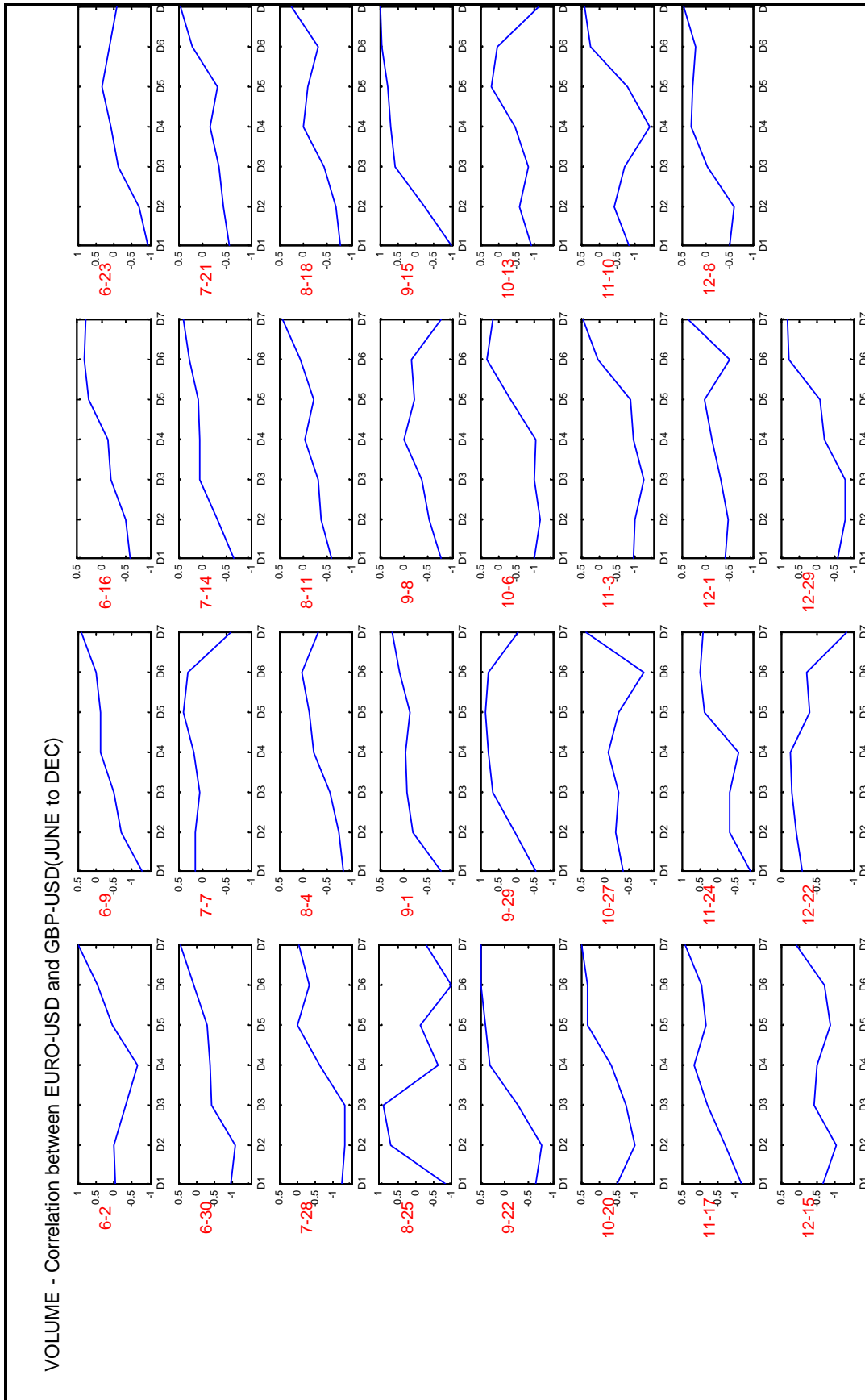
Correlation Charts – SPREAD – YEN/USD and GBP/USD



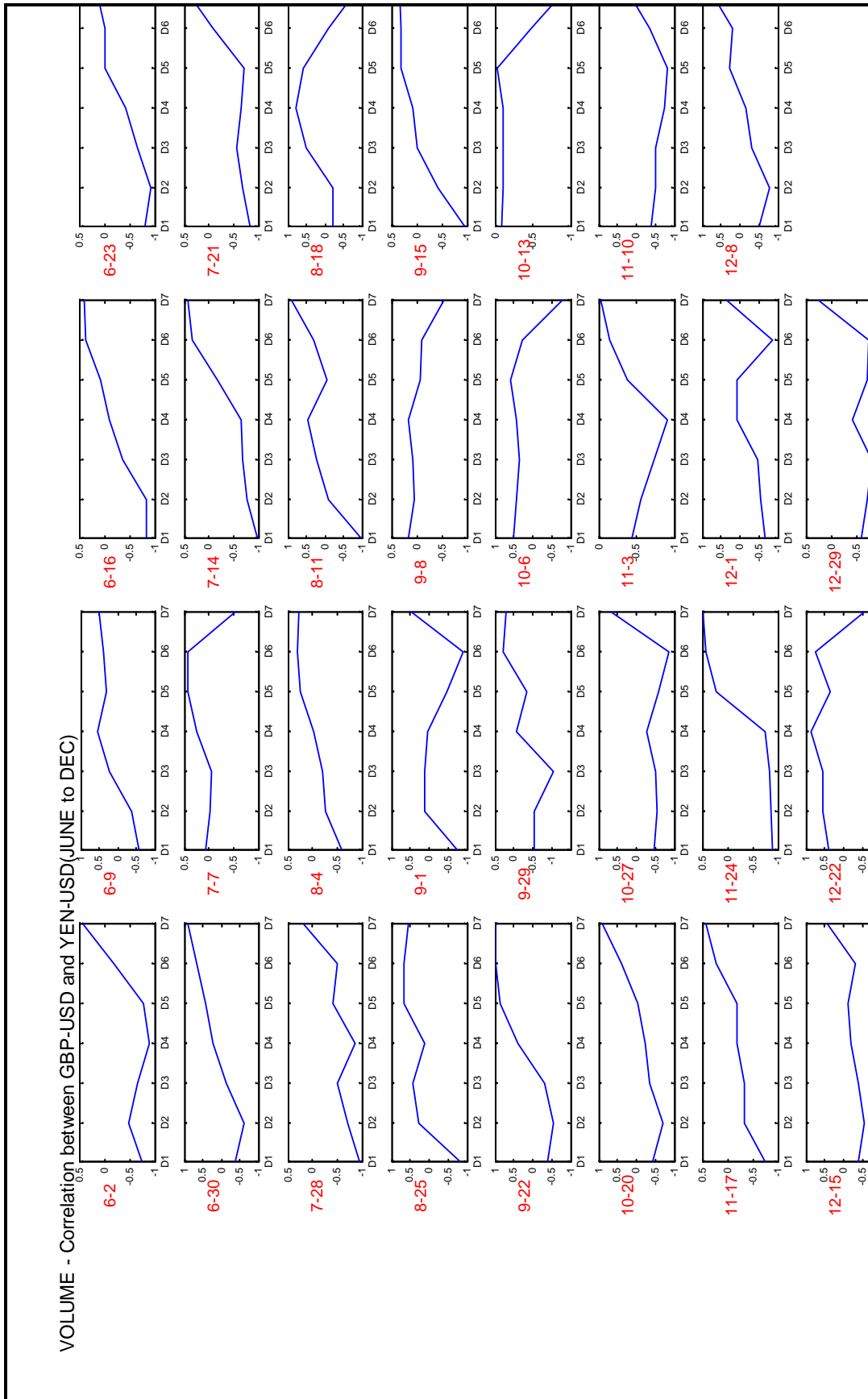
Correlation Charts – SPREAD – EURO/USD and YEN/USD



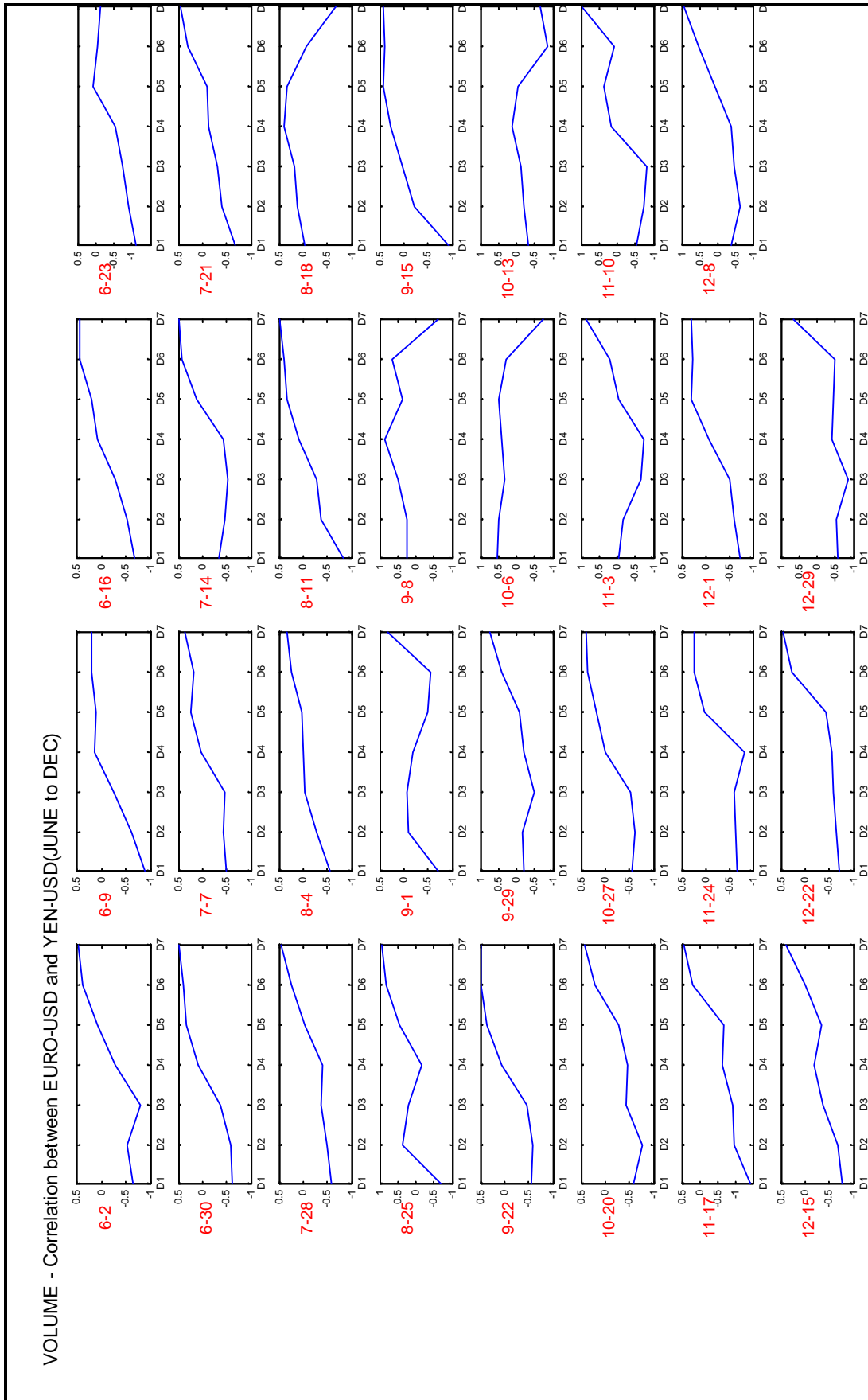
Correlation Charts – VOLUME – EURO/USD and GBP/USD



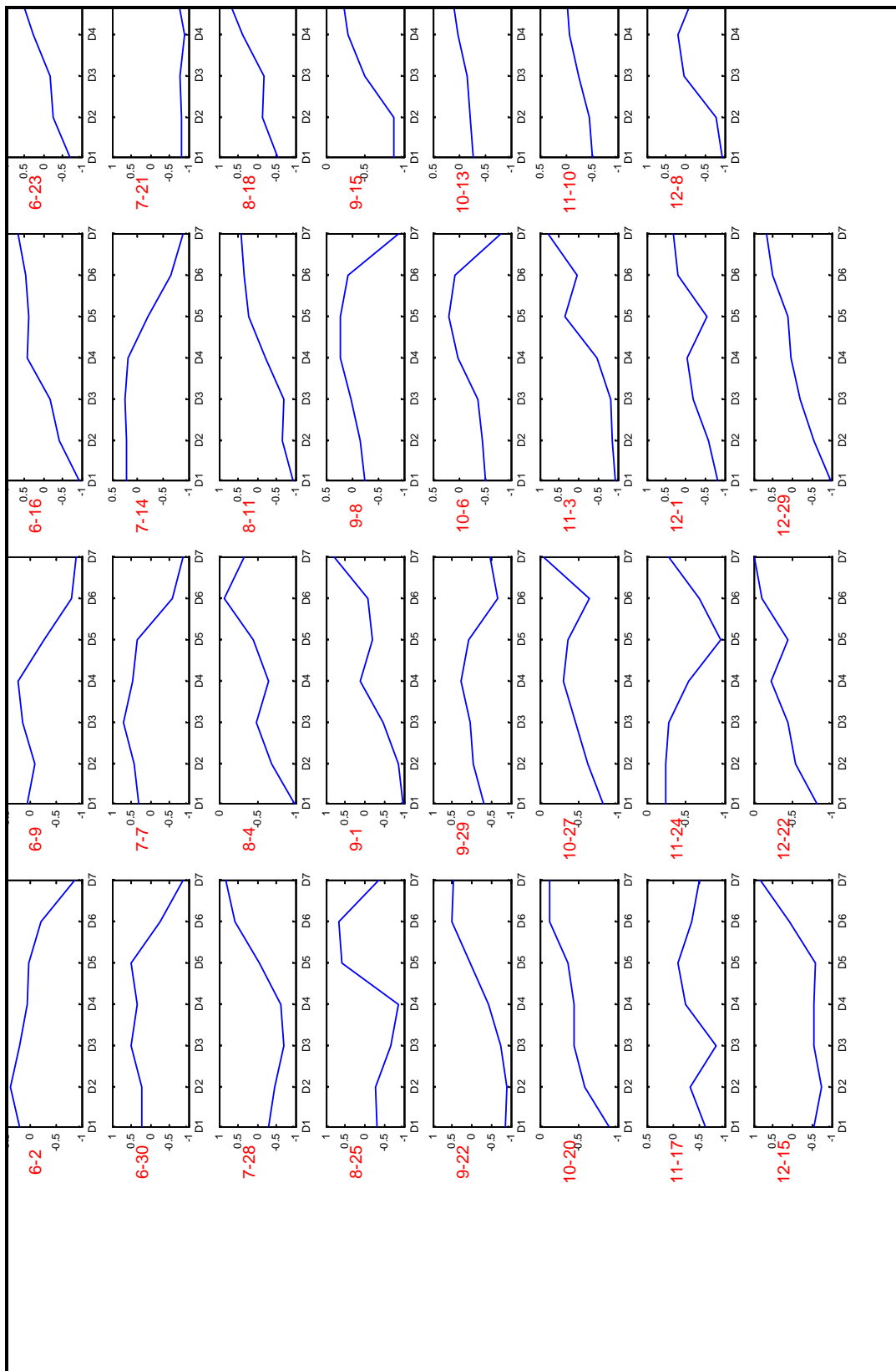
Correlation Charts – VOLUME – YEN/USD and GBP/USD



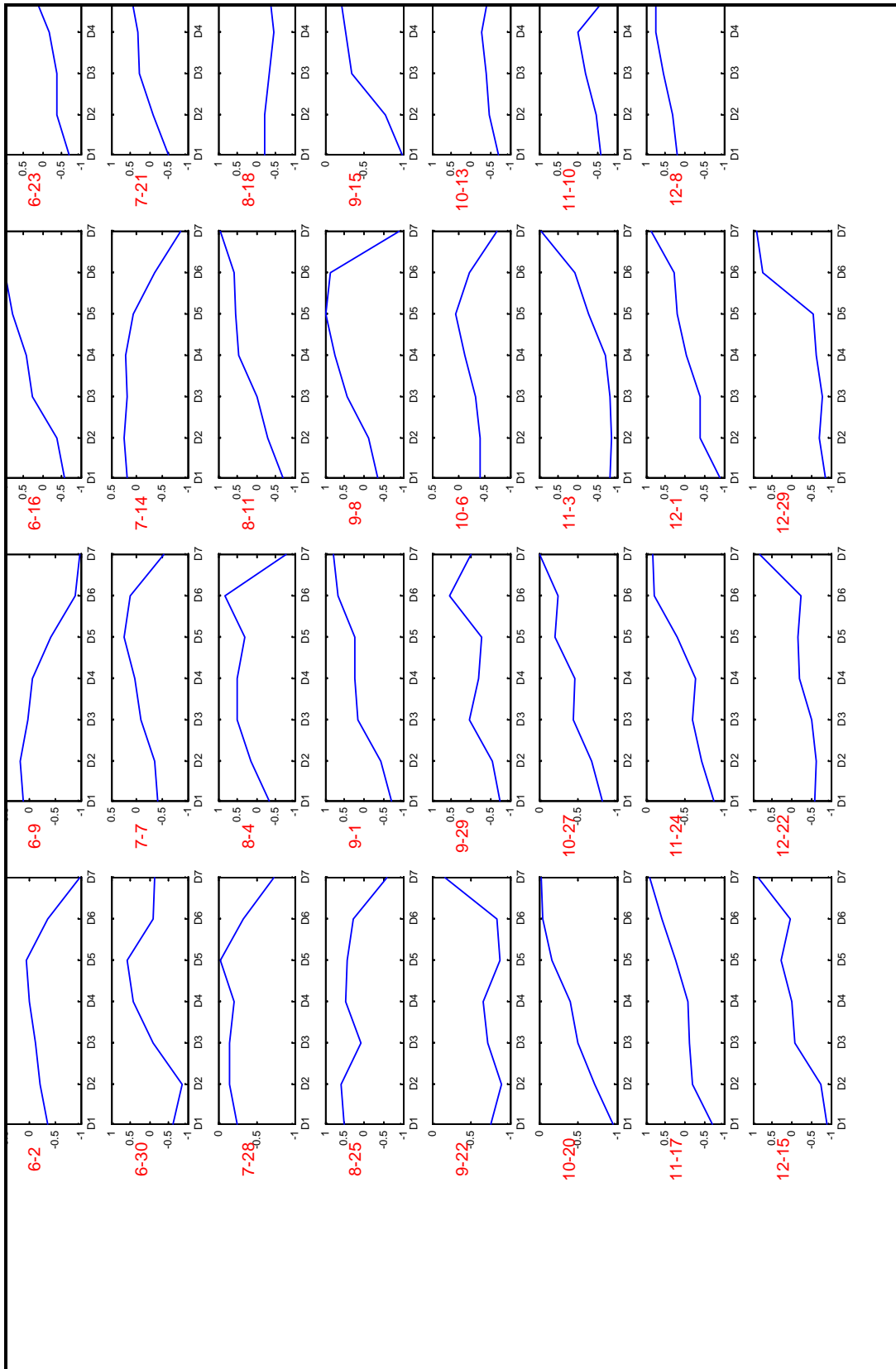
Correlation Charts – VOLUME – EURO/USD and YEN/USD



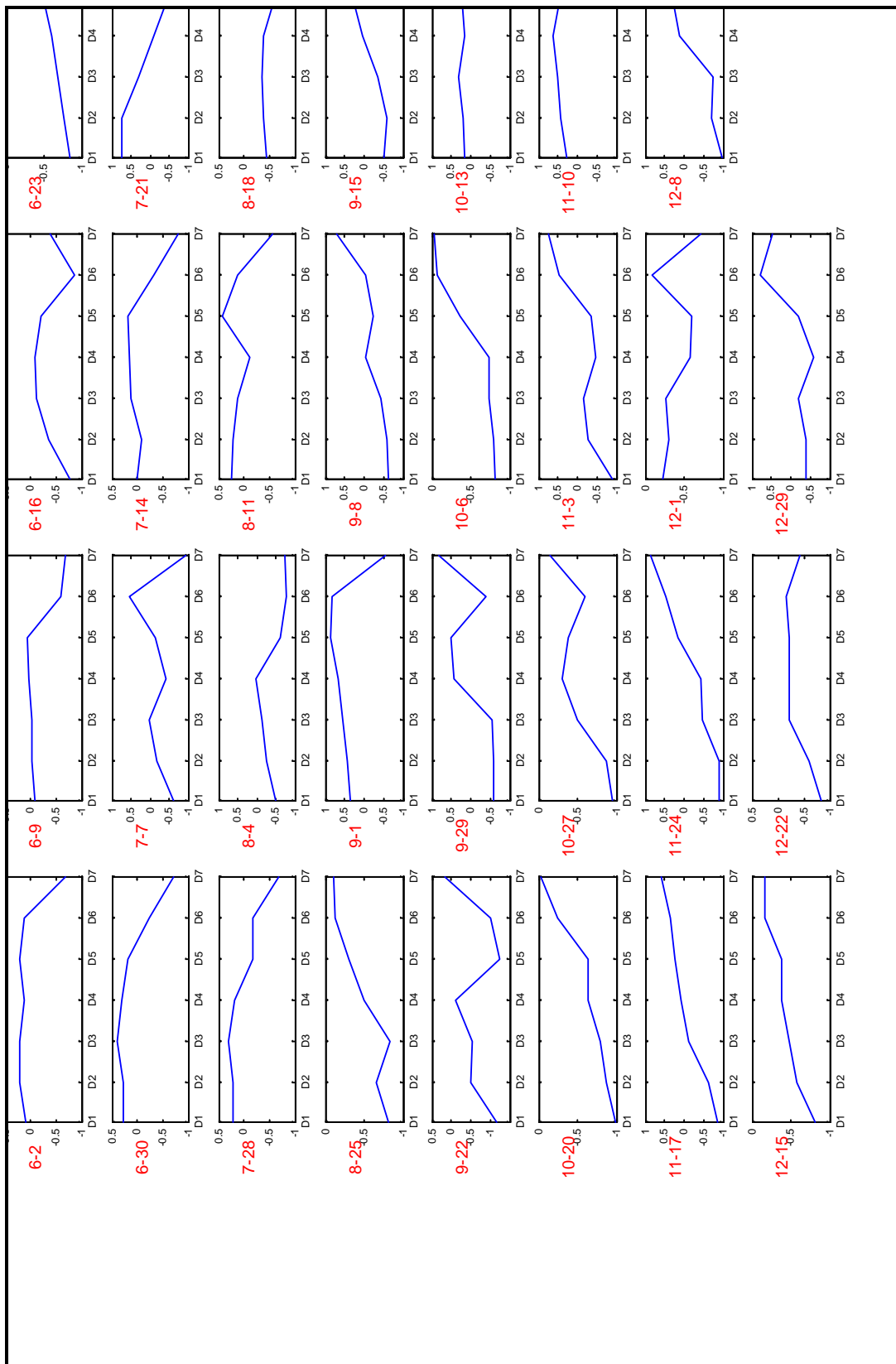
Correlation Charts – VOLUME and SPREAD – EURO/USD



Correlation Charts – VOLUME and SPREAD – GBP/USD



Correlation Charts – VOLUME and SPREAD – YEN/USD



Appendix D: MATLAB Application Script

Script for MODWT Analysis

```
% Program to read data from xls file  
function Step_2_MODWT
```

```
% xlsread(filename, sheet, range).  
% HKT: Read data (spread)  
data_column_range = char('1898:11025');
```

```
%HKT::For Euro-Read DATA
```

```
data_file = '3_oct_euro_usd_1min.XLS';  
EURO_USD_June_2 = xlsread(data_file,'6-2',data_column_range);  
EURO_USD_June_9 = xlsread(data_file,'6-9',data_column_range);  
EURO_USD_June_16 = xlsread(data_file,'6-16',data_column_range);  
EURO_USD_June_23 = xlsread(data_file,'6-23',data_column_range);  
EURO_USD_June_30 = xlsread(data_file,'6-30',data_column_range);  
EURO_USD_July_7 = xlsread(data_file,'7-7',data_column_range);  
EURO_USD_July_14 = xlsread(data_file,'7-14',data_column_range);  
EURO_USD_July_21 = xlsread(data_file,'7-21',data_column_range);  
EURO_USD_July_28 = xlsread(data_file,'7-28',data_column_range);  
EURO_USD_Aug_4 = xlsread(data_file,'8-4',data_column_range);  
EURO_USD_Aug_11 = xlsread(data_file,'8-11',data_column_range);  
EURO_USD_Aug_18 = xlsread(data_file,'8-18',data_column_range);  
EURO_USD_Aug_25 = xlsread(data_file,'8-25',data_column_range);  
EURO_USD_Sept_1 = xlsread(data_file,'9-1',data_column_range);  
EURO_USD_Sept_8 = xlsread(data_file,'9-8',data_column_range);  
EURO_USD_Sept_15 = xlsread(data_file,'9-15',data_column_range);  
EURO_USD_Sept_22 = xlsread(data_file,'9-22',data_column_range);  
EURO_USD_Sept_29 = xlsread(data_file,'9-29',data_column_range);  
EURO_USD_Oct_6 = xlsread(data_file,'10-6',data_column_range);  
EURO_USD_Oct_13 = xlsread(data_file,'10-13',data_column_range);  
EURO_USD_Oct_20 = xlsread(data_file,'10-20',data_column_range);  
EURO_USD_Oct_27 = xlsread(data_file,'10-27',data_column_range);  
EURO_USD_Nov_3 = xlsread(data_file,'11-3',data_column_range);  
EURO_USD_Nov_10 = xlsread(data_file,'11-10',data_column_range);  
EURO_USD_Nov_17 = xlsread(data_file,'11-17',data_column_range);  
EURO_USD_Nov_24 = xlsread(data_file,'11-24',data_column_range);  
EURO_USD_Dec_1 = xlsread(data_file,'12-1',data_column_range);  
EURO_USD_Dec_8 = xlsread(data_file,'12-8',data_column_range);  
EURO_USD_Dec_15 = xlsread(data_file,'12-15',data_column_range);  
EURO_USD_Dec_22 = xlsread(data_file,'12-22',data_column_range);  
EURO_USD_Dec_29 = xlsread(data_file,'12-29',data_column_range);
```

```
%HKT::For GBP - READ DATA
```

```
data_file = '3_oct_gbp_usd_1min.XLS';  
GBP_USD_June_2 = xlsread(data_file,'6-2',data_column_range);  
GBP_USD_June_9 = xlsread(data_file,'6-9',data_column_range);  
GBP_USD_June_16 = xlsread(data_file,'6-16',data_column_range);  
GBP_USD_June_23 = xlsread(data_file,'6-23',data_column_range);  
GBP_USD_June_30 = xlsread(data_file,'6-30',data_column_range);  
GBP_USD_July_7 = xlsread(data_file,'7-7',data_column_range);  
GBP_USD_July_14 = xlsread(data_file,'7-14',data_column_range);  
GBP_USD_July_21 = xlsread(data_file,'7-21',data_column_range);  
GBP_USD_July_28 = xlsread(data_file,'7-28',data_column_range);  
GBP_USD_Aug_4 = xlsread(data_file,'8-4',data_column_range);  
GBP_USD_Aug_11 = xlsread(data_file,'8-11',data_column_range);  
GBP_USD_Aug_18 = xlsread(data_file,'8-18',data_column_range);  
GBP_USD_Aug_25 = xlsread(data_file,'8-25',data_column_range);  
GBP_USD_Sept_1 = xlsread(data_file,'9-1',data_column_range);  
GBP_USD_Sept_8 = xlsread(data_file,'9-8',data_column_range);  
GBP_USD_Sept_15 = xlsread(data_file,'9-15',data_column_range);  
GBP_USD_Sept_22 = xlsread(data_file,'9-22',data_column_range);  
GBP_USD_Sept_29 = xlsread(data_file,'9-29',data_column_range);  
GBP_USD_Oct_6 = xlsread(data_file,'10-6',data_column_range);  
GBP_USD_Oct_13 = xlsread(data_file,'10-13',data_column_range);  
GBP_USD_Oct_20 = xlsread(data_file,'10-20',data_column_range);  
GBP_USD_Oct_27 = xlsread(data_file,'10-27',data_column_range);  
GBP_USD_Nov_3 = xlsread(data_file,'11-3',data_column_range);  
GBP_USD_Nov_10 = xlsread(data_file,'11-10',data_column_range);  
GBP_USD_Nov_17 = xlsread(data_file,'11-17',data_column_range);
```

```

GBP_USD_Nov_24 = xlsread(data_file,'11-24',data_column_range);
GBP_USD_Dec_1 = xlsread(data_file,'12-1',data_column_range);
GBP_USD_Dec_8 = xlsread(data_file,'12-8',data_column_range);
GBP_USD_Dec_15 = xlsread(data_file,'12-15',data_column_range);
GBP_USD_Dec_22 = xlsread(data_file,'12-22',data_column_range);
GBP_USD_Dec_29 = xlsread(data_file,'12-29',data_column_range);

```

%HKT::For YEN - READ DATA

```

data_file = '3_oct_yen_usd_1min.XLS';
YEN_USD_June_2 = xlsread(data_file,'6-2',data_column_range);
YEN_USD_June_9 = xlsread(data_file,'6-9',data_column_range);
YEN_USD_June_16 = xlsread(data_file,'6-16',data_column_range);
YEN_USD_June_23 = xlsread(data_file,'6-23',data_column_range);
YEN_USD_June_30 = xlsread(data_file,'6-30',data_column_range);
YEN_USD_July_7 = xlsread(data_file,'7-7',data_column_range);
YEN_USD_July_14 = xlsread(data_file,'7-14',data_column_range);
YEN_USD_July_21 = xlsread(data_file,'7-21',data_column_range);
YEN_USD_July_28 = xlsread(data_file,'7-28',data_column_range);
YEN_USD_Aug_4 = xlsread(data_file,'8-4',data_column_range);
YEN_USD_Aug_11 = xlsread(data_file,'8-11',data_column_range);
YEN_USD_Aug_18 = xlsread(data_file,'8-18',data_column_range);
YEN_USD_Aug_25 = xlsread(data_file,'8-25',data_column_range);
YEN_USD_Sept_1 = xlsread(data_file,'9-1',data_column_range);
YEN_USD_Sept_8 = xlsread(data_file,'9-8',data_column_range);
YEN_USD_Sept_15 = xlsread(data_file,'9-15',data_column_range);
YEN_USD_Sept_22 = xlsread(data_file,'9-22',data_column_range);
YEN_USD_Sept_29 = xlsread(data_file,'9-29',data_column_range);
YEN_USD_Oct_6 = xlsread(data_file,'10-6',data_column_range);
YEN_USD_Oct_13 = xlsread(data_file,'10-13',data_column_range);
YEN_USD_Oct_20 = xlsread(data_file,'10-20',data_column_range);
YEN_USD_Oct_27 = xlsread(data_file,'10-27',data_column_range);
YEN_USD_Nov_3 = xlsread(data_file,'11-3',data_column_range);
YEN_USD_Nov_10 = xlsread(data_file,'11-10',data_column_range);
YEN_USD_Nov_17 = xlsread(data_file,'11-17',data_column_range);
YEN_USD_Nov_24 = xlsread(data_file,'11-24',data_column_range);
YEN_USD_Dec_1 = xlsread(data_file,'12-1',data_column_range);
YEN_USD_Dec_8 = xlsread(data_file,'12-8',data_column_range);
YEN_USD_Dec_15 = xlsread(data_file,'12-15',data_column_range);
YEN_USD_Dec_22 = xlsread(data_file,'12-22',data_column_range);
YEN_USD_Dec_29 = xlsread(data_file,'12-29',data_column_range);

```

**%HKT:: PASSING THE DATA RECORDS TO NEXT STEP (TO DO THE MODWT STAT
%PROCESSING)**

```

Curr_Pair = char('EURO_USD');
Step_2_1_Execute_MODWT(EURO_USD_June_2,'6_2',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_June_9,'6_9',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_June_16,'6_16',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_June_23,'6_23',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_June_30,'6_30',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_July_7,'7_7',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_July_14,'7_14',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_July_21,'7_21',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_July_28,'7_28',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Aug_4,'8_4',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Aug_11,'8_11',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Aug_18,'8_18',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Aug_25,'8_25',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Sept_1,'9_1',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Sept_8,'9_8',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Sept_15,'9_15',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Sept_22,'9_22',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Sept_29,'9_29',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Oct_6,'10_6',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Oct_13,'10_13',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Oct_20,'10_20',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Oct_27,'10_27',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Nov_3,'11_3',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Nov_10,'11_10',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Nov_17,'11_17',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Nov_24,'11_24',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Dec_1,'12_1',Curr_Pair);

```

```
Step_2_1_Execute_MODWT(EURO_USD_Dec_8,'12_8',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Dec_15,'12_15',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Dec_22,'12_22',Curr_Pair);
Step_2_1_Execute_MODWT(EURO_USD_Dec_29,'12_29',Curr_Pair);
```

```
Curr_Pair = char('GBP_USD');
Step_2_1_Execute_MODWT(GBP_USD_June_2,'6_2',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_June_9,'6_9',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_June_16,'6_16',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_June_23,'6_23',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_June_30,'6_30',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_July_7,'7_7',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_July_14,'7_14',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_July_21,'7_21',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_July_28,'7_28',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Aug_4,'8_4',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Aug_11,'8_11',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Aug_18,'8_18',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Aug_25,'8_25',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Sept_1,'9_1',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Sept_8,'9_8',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Sept_15,'9_15',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Sept_22,'9_22',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Sept_29,'9_29',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Oct_6,'10_6',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Oct_13,'10_13',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Oct_20,'10_20',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Oct_27,'10_27',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Nov_3,'11_3',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Nov_10,'11_10',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Nov_17,'11_17',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Nov_24,'11_24',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Dec_1,'12_1',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Dec_8,'12_8',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Dec_15,'12_15',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Dec_22,'12_22',Curr_Pair);
Step_2_1_Execute_MODWT(GBP_USD_Dec_29,'12_29',Curr_Pair);
```

```
Curr_Pair = char('YEN_USD');
Step_2_1_Execute_MODWT(YEN_USD_June_2,'6_2',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_June_9,'6_9',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_June_16,'6_16',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_June_23,'6_23',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_June_30,'6_30',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_July_7,'7_7',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_July_14,'7_14',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_July_21,'7_21',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_July_28,'7_28',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Aug_4,'8_4',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Aug_11,'8_11',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Aug_18,'8_18',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Aug_25,'8_25',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Sept_1,'9_1',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Sept_8,'9_8',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Sept_15,'9_15',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Sept_22,'9_22',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Sept_29,'9_29',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Oct_6,'10_6',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Oct_13,'10_13',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Oct_20,'10_20',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Oct_27,'10_27',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Nov_3,'11_3',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Nov_10,'11_10',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Nov_17,'11_17',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Nov_24,'11_24',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Dec_1,'12_1',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Dec_8,'12_8',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Dec_15,'12_15',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Dec_22,'12_22',Curr_Pair);
Step_2_1_Execute_MODWT(YEN_USD_Dec_29,'12_29',Curr_Pair);
```

end


```

-----
function Step_2_1_Execute_MODWT(Data_Record,Data_Date,Curr_Pair)

% HKT: Start
Total_Level = 7;
Filter='haar';
Sheet = char(Data_Date);

% HKT: Create S file header file
val2 = {'S1','S2','S3','S4','S5','S6','S7','S8','S9','S10'};
%HKT: To create the header for S datasheet for EURO_USD
Filename_S = strcat('MODWT-',Curr_Pair,'-S.xls');
xlswrite(Filename_S,val2,Sheet,'A1:J1');

% HKT: Create D file header file
val2 = {'D1','D2','D3','D4','D5','D6','D7','D8','D9','D10'};
%HKT: To create the header for S datasheet for EURO_USD
Filename_D = strcat('MODWT-',Curr_Pair,'-D.xls');
xlswrite(Filename_D,val2,Sheet,'A1:J1');

Level = 1; %start with level 1.
% End_Row = '1025';
End_Row = '129'; % for 1 hour before and after 1pm GMT
Start_Row = '2';

%loop
while(Level < (Total_Level+1))

[WJt,VJt,w_att] = modwt(Data_Record, Filter, Level); % Decomposition
[wvar,Ci_wvar] = modwt_wvar(WJt); % Compute Modwt Variance.
%wvar_1=wvar; %HKT: Removed and not in used in this portion.
[DJt,SJt,mra_att]=imodwt_mra(WJt,VJt,w_att); % MRA via IMODWT
modwt_s = SJt; % Approximation at level 1(Core trend). This produce a matrix of 1x1129

    if (Level == 1)
        Column = strcat('A',Start_Row,':A',End_Row);
    end
    if (Level == 2)
        Column = strcat('B',Start_Row,':B',End_Row);
    end
    if (Level == 3)
        Column = strcat('C',Start_Row,':C',End_Row);
    end
    if (Level == 4)
        Column = strcat('D',Start_Row,':D',End_Row);
    end
    if (Level == 5)
        Column = strcat('E',Start_Row,':E',End_Row);
    end
    if (Level == 6)
        Column = strcat('F',Start_Row,':F',End_Row);
    end
    if (Level == 7)
        Column = strcat('G',Start_Row,':G',End_Row);
    end
    if (Level == 8)
        Column = strcat('H',Start_Row,':H',End_Row);
    end
    if (Level == 9)
        Column = strcat('I',Start_Row,':I',End_Row);
    end
    if (Level == 10)
        Column = strcat('J',Start_Row,':J',End_Row);
    end

% xlswrite('test.xls',Sheet,'temp','A1:A1'); %for debug use only
% xlswrite('test.xls',Column,'temp','A2:A2') %for debug use only
% xlswrite('test.xls',modwt_s,Sheet,'A2:A1025'); %for debug use only

% modwt_s = modwt_s(1:1024);

```

```

modwt_s = modwt_s(1:128); % for 1 hour before and after 1pm GMT

xlswrite(Filename_S,modwt_s,Sheet,Column); % This is to write approximatoin at level 8 to xls fil.

if(Level == Total_Level) %HKT: At the last level...take the D result
    modwt_d = DJt;
    % modwt_d = modwt_d(1:1024,:);

    modwt_d = modwt_d(1:128,:); % for 1 hour before and after 1pm GMT
%   xlswrite(Filename_D,modwt_d,Sheet,'A2:J129'); % This is to write approximatoin at level 8 to xls fil.
    xlswrite(Filename_D,modwt_d,Sheet,'A2:G129'); % This is to write approximatoin at level 8 to xls fil.

end

Level = Level + 1;

end

end

```

Script for Correlation Analysis

```

function Step_3_Correlation()
%HKT:: Generate the last level MODWT MRA
%HKT:: 1 = EURO_USD&GBP_USD (Cor-E_G), 2=GBP_USD&YEN_USD(Cor-G_Y),
3=EURO_USD&YEN_USD(Cor-E_Y)

% HKT: Create D file header file
%   val2 = {'Date','D1','D2','D3','D4','D5','D6','D7','D8','D9','D10'};

val2 = {'Date','D1','D2','D3','D4','D5','D6','D7'};% for 1 hour before and after GMT

%HKT:: To create the header for S datasheet for EURO_USD
    xlswrite('MODWT_Correl.XLS',{'Correlation Values - EURO-USD & GBP-USD'],'Cor-E_G','A1:A1');
%   xlswrite('MODWT_Correl.XLS',val2,'Cor-E_G','A2:K2');
    xlswrite('MODWT_Correl.XLS',val2,'Cor-E_G','A2:H2');

    xlswrite('MODWT_Correl.XLS',{'Correlation Values - GBP-USD & YEN-USD'],'Cor-G_Y','A1:A1');
%   xlswrite('MODWT_Correl.XLS',val2,'Cor-G_Y','A2:K2');
    xlswrite('MODWT_Correl.XLS',val2,'Cor-G_Y','A2:H2');

    xlswrite('MODWT_Correl.XLS',{'Correlation Values - EURO-USD & YEN-USD'],'Cor-E_Y','A1:A1');
%   xlswrite('MODWT_Correl.XLS',val2,'Cor-E_Y','A2:K2');
    xlswrite('MODWT_Correl.XLS',val2,'Cor-E_Y','A2:H2');

Correl_Pair = 1;
Step_3_1_Run_Corr(Correl_Pair,'6-2',{6_2},3);
Step_3_1_Run_Corr(Correl_Pair,'6-9',{6_9},4);
Step_3_1_Run_Corr(Correl_Pair,'6-16',{6_16},5);
Step_3_1_Run_Corr(Correl_Pair,'6-23',{6_23},6);
Step_3_1_Run_Corr(Correl_Pair,'6-30',{6_30},7);
Step_3_1_Run_Corr(Correl_Pair,'7-7',{7_7},8);
Step_3_1_Run_Corr(Correl_Pair,'7-14',{7_14},9);
Step_3_1_Run_Corr(Correl_Pair,'7-21',{7_21},10);
Step_3_1_Run_Corr(Correl_Pair,'7-28',{7_28},11);
Step_3_1_Run_Corr(Correl_Pair,'8-4',{8_4},12);
Step_3_1_Run_Corr(Correl_Pair,'8-11',{8_11},13);
Step_3_1_Run_Corr(Correl_Pair,'8-18',{8_18},14);
Step_3_1_Run_Corr(Correl_Pair,'8-25',{8_25},15);
Step_3_1_Run_Corr(Correl_Pair,'9-1',{9_1},16);
Step_3_1_Run_Corr(Correl_Pair,'9-8',{9_8},17);
Step_3_1_Run_Corr(Correl_Pair,'9-15',{9_15},18);
Step_3_1_Run_Corr(Correl_Pair,'9-22',{9_22},19);
Step_3_1_Run_Corr(Correl_Pair,'9-29',{9_29},20);
Step_3_1_Run_Corr(Correl_Pair,'10-6',{10_6},21);

```

```
Step_3_1_Run_Corr(Correl_Pair,'10-13',{10_13},22);
Step_3_1_Run_Corr(Correl_Pair,'10-20',{10_20},23);
Step_3_1_Run_Corr(Correl_Pair,'10-27',{10_27},24);
Step_3_1_Run_Corr(Correl_Pair,'11-3',{11_3},25);
Step_3_1_Run_Corr(Correl_Pair,'11-10',{11_10},26);
Step_3_1_Run_Corr(Correl_Pair,'11-17',{11_17},27);
Step_3_1_Run_Corr(Correl_Pair,'11-24',{11_24},28);
Step_3_1_Run_Corr(Correl_Pair,'12-1',{12_1},29);
Step_3_1_Run_Corr(Correl_Pair,'12-8',{12_8},30);
Step_3_1_Run_Corr(Correl_Pair,'12-15',{12_15},31);
Step_3_1_Run_Corr(Correl_Pair,'12-22',{12_22},32);
Step_3_1_Run_Corr(Correl_Pair,'12-29',{12_29},33);
```

Correl_Pair = 2;

```
Step_3_1_Run_Corr(Correl_Pair,'6-2',{6_2},3);
Step_3_1_Run_Corr(Correl_Pair,'6-9',{6_9},4);
Step_3_1_Run_Corr(Correl_Pair,'6-16',{6_16},5);
Step_3_1_Run_Corr(Correl_Pair,'6-23',{6_23},6);
Step_3_1_Run_Corr(Correl_Pair,'6-30',{6_30},7);
Step_3_1_Run_Corr(Correl_Pair,'7-7',{7_7},8);
Step_3_1_Run_Corr(Correl_Pair,'7-14',{7_14},9);
Step_3_1_Run_Corr(Correl_Pair,'7-21',{7_21},10);
Step_3_1_Run_Corr(Correl_Pair,'7-28',{7_28},11);
Step_3_1_Run_Corr(Correl_Pair,'8-4',{8_4},12);
Step_3_1_Run_Corr(Correl_Pair,'8-11',{8_11},13);
Step_3_1_Run_Corr(Correl_Pair,'8-18',{8_18},14);
Step_3_1_Run_Corr(Correl_Pair,'8-25',{8_25},15);
Step_3_1_Run_Corr(Correl_Pair,'9-1',{9_1},16);
Step_3_1_Run_Corr(Correl_Pair,'9-8',{9_8},17);
Step_3_1_Run_Corr(Correl_Pair,'9-15',{9_15},18);
Step_3_1_Run_Corr(Correl_Pair,'9-22',{9_22},19);
Step_3_1_Run_Corr(Correl_Pair,'9-29',{9_29},20);
Step_3_1_Run_Corr(Correl_Pair,'10-6',{10_6},21);
Step_3_1_Run_Corr(Correl_Pair,'10-13',{10_13},22);
Step_3_1_Run_Corr(Correl_Pair,'10-20',{10_20},23);
Step_3_1_Run_Corr(Correl_Pair,'10-27',{10_27},24);
Step_3_1_Run_Corr(Correl_Pair,'11-3',{11_3},25);
Step_3_1_Run_Corr(Correl_Pair,'11-10',{11_10},26);
Step_3_1_Run_Corr(Correl_Pair,'11-17',{11_17},27);
Step_3_1_Run_Corr(Correl_Pair,'11-24',{11_24},28);
Step_3_1_Run_Corr(Correl_Pair,'12-1',{12_1},29);
Step_3_1_Run_Corr(Correl_Pair,'12-8',{12_8},30);
Step_3_1_Run_Corr(Correl_Pair,'12-15',{12_15},31);
Step_3_1_Run_Corr(Correl_Pair,'12-22',{12_22},32);
Step_3_1_Run_Corr(Correl_Pair,'12-29',{12_29},33);
```

Correl_Pair = 3;

```
Step_3_1_Run_Corr(Correl_Pair,'6-2',{6_2},3);
Step_3_1_Run_Corr(Correl_Pair,'6-9',{6_9},4);
Step_3_1_Run_Corr(Correl_Pair,'6-16',{6_16},5);
Step_3_1_Run_Corr(Correl_Pair,'6-23',{6_23},6);
Step_3_1_Run_Corr(Correl_Pair,'6-30',{6_30},7);
Step_3_1_Run_Corr(Correl_Pair,'7-7',{7_7},8);
Step_3_1_Run_Corr(Correl_Pair,'7-14',{7_14},9);
Step_3_1_Run_Corr(Correl_Pair,'7-21',{7_21},10);
Step_3_1_Run_Corr(Correl_Pair,'7-28',{7_28},11);
Step_3_1_Run_Corr(Correl_Pair,'8-4',{8_4},12);
Step_3_1_Run_Corr(Correl_Pair,'8-11',{8_11},13);
Step_3_1_Run_Corr(Correl_Pair,'8-18',{8_18},14);
Step_3_1_Run_Corr(Correl_Pair,'8-25',{8_25},15);
Step_3_1_Run_Corr(Correl_Pair,'9-1',{9_1},16);
Step_3_1_Run_Corr(Correl_Pair,'9-8',{9_8},17);
Step_3_1_Run_Corr(Correl_Pair,'9-15',{9_15},18);
Step_3_1_Run_Corr(Correl_Pair,'9-22',{9_22},19);
Step_3_1_Run_Corr(Correl_Pair,'9-29',{9_29},20);
Step_3_1_Run_Corr(Correl_Pair,'10-6',{10_6},21);
Step_3_1_Run_Corr(Correl_Pair,'10-13',{10_13},22);
Step_3_1_Run_Corr(Correl_Pair,'10-20',{10_20},23);
Step_3_1_Run_Corr(Correl_Pair,'10-27',{10_27},24);
Step_3_1_Run_Corr(Correl_Pair,'11-3',{11_3},25);
Step_3_1_Run_Corr(Correl_Pair,'11-10',{11_10},26);
```

```

Step_3_1_Run_Corr(Correl_Pair,'11-17',{11_17},'27');
Step_3_1_Run_Corr(Correl_Pair,'11-24',{11_24},'28');
Step_3_1_Run_Corr(Correl_Pair,'12-1',{12_1},'29');
Step_3_1_Run_Corr(Correl_Pair,'12-8',{12_8},'30');
Step_3_1_Run_Corr(Correl_Pair,'12-15',{12_15},'31');
Step_3_1_Run_Corr(Correl_Pair,'12-22',{12_22},'32');
Step_3_1_Run_Corr(Correl_Pair,'12-29',{12_29},'33');
End

```

```
function Step_3_1_Run_Corr(Corr_Pair,Date,Record_Date,Row)
```

```
if(Corr_Pair == 1) %EURO + GBP Correl
```

```
Sheet = 'Cor-E_G';
Filename_1 = '3_oct_euro_usd_1min.XLS';
Filename_2 = '3_oct_gbp_usd_1min.XLS';
```

```
end
```

```
if(Corr_Pair == 2) %GBP + YEN Correl
```

```
Sheet = 'Cor-G_Y';
Filename_1 = '3_oct_gbp_usd_1min.XLS';
Filename_2 = '3_oct_yen_usd_1min.XLS';
```

```
end
```

```
if(Corr_Pair == 3) %EURO + YEN Correl
```

```
Sheet = 'Cor-E_Y';
Filename_1 = '3_oct_euro_usd_1min.XLS';
Filename_2 = '3_oct_yen_usd_1min.XLS';
```

```
end
```

```
Range = 'I898:I1025';
Data_Date = char(Date);
Data_1=xlread(Filename_1,Data_Date,Range);
Data_2=xlread(Filename_2,Data_Date,Range);
```

```
%Level = 10;
Level = 7;
Filter='haar';
[D,S,w_att]=modwt(Data_1,Filter, Level); % Decomposition
WJt_1=D;
```

```
[D,S,w_att]=modwt(Data_2,Filter,Level);
WJt_2=D;
```

```
[wcor,CI_wcor]=modwt_wcor(WJt_1,WJt_2); % Compute Modwt Correlation up to level 8.
Pair_Correl=wcor; % This part name the correlation
```

```
LOC_1 = strcat('A',Row,':A',Row);
%Entry_Date =(Record_Date);
xlwrite('MODWT_Correl.XLS',Record_Date,Sheet,LOC_1);
```

```
%LOC_2 = strcat('B',Row,':K',Row);
```

```
LOC_2 = strcat('B',Row,':H',Row);
Pair_Correl = transpose(Pair_Correl);
xlwrite('MODWT_Correl.XLS',Pair_Correl,Sheet,LOC_2);
```

```
end
```