

Lead-lag correlation between volume, flow and return in cryptocurrency market.

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Abstract

This paper examines there are lead-lag correlations between volume, flow and return.
blah blah blah

Introduction

Bae et al. (2014) investigate

Literature Review

We review the literature ...

Data and Methods

The methods of event study separate ...

Data

Subsection

Methods

Subsection

<Insert Table 1>

Results

We examine the relationship between ...

$$r_{t \rightarrow t+k} = \beta_0 + \beta_1 \cdot x_t + \varepsilon_{t \rightarrow k}$$

Conclusion

We identify the relations between ...

Tables and Figures

Table 1: Summary statistics

X	Obs	Mean	Std	Q1	Q3	Median	Min	Max
Ret BTC Ex1	15288	0.0	0.009	-0.003	0.003	0.00	-0.094	0.109
Ret BTC Ex2	15288	0.0	0.009	-0.003	0.003	0.00	-0.096	0.113
Ret BTC Ex4	15288	0.0	0.009	-0.003	0.003	0.00	-0.092	0.112
Ret BTC Ex5	15288	0.0	0.009	-0.003	0.003	0.00	-0.096	0.116
Ret BTC Ex6	15288	0.0	0.008	-0.002	0.003	0.00	-0.099	0.108
Ret BTC Ex7	15288	0.0	0.009	-0.003	0.003	0.00	-0.093	0.113
Ret BTC Ex8	15288	0.0	0.010	-0.003	0.003	0.00	-0.155	0.107
Ret BTC Ex9	15288	0.0	0.009	-0.003	0.003	0.00	-0.092	0.102
Vol BTC Ex1	15288	1497.8	1081.842	805.859	1846.895	1200.59	0.000	7095.242
Vol BTC Ex2	15288	941.3	1105.296	225.347	1211.381	533.89	0.000	7119.615
Vol BTC Ex3	15288	6126.6	6288.368	0.000	9753.638	5008.98	0.000	32353.970
Vol BTC Ex5	15288	55.7	83.281	8.167	64.527	22.15	0.000	562.345
Vol BTC Ex8	15288	39.5	97.481	3.733	18.331	8.07	0.000	551.107
Vol BTC Ex9	15288	57.5	81.628	9.931	68.550	25.33	0.000	554.180
Net BTC Ex1	15288	337942.0	4968601.842	-537195.373	1056826.715	193622.14	-265393752.980	243563843.840
Net BTC Ex2	15288	75213.9	5142220.433	-514944.175	770525.652	35660.39	-122029390.330	110688688.790
Net BTC Ex3	15288	82203.7	3561345.681	139735.450	697188.998	319831.28	-81509485.980	109354238.820
Net BTC Ex4	15288	207710.2	2450959.563	-321960.845	585297.240	67048.77	-36706683.980	43937987.910
Net BTC Ex5	15288	-59667.8	1482306.364	-249673.718	189213.033	-29887.78	-24241965.280	38374873.950
Net BTC Ex6	15288	153861.2	1985685.078	-428320.053	686348.310	83957.46	-26294205.060	56964044.850
Net BTC Ex7	15288	19143.4	1650824.471	-370382.387	365838.270	-13981.88	-23388142.530	60500192.040
Net BTC Ex9	15288	-15300.3	2477848.082	-192907.600	98090.135	-30700.67	-86661464.270	134652188.610
Ret ETH Ex1	15288	0.0	0.012	-0.004	0.004	0.00	-0.141	0.149
Ret ETH Ex2	15288	0.0	0.011	-0.004	0.004	0.00	-0.139	0.141
Ret ETH Ex5	15288	0.0	0.011	-0.004	0.004	0.00	-0.138	0.166
Ret ETH Ex7	15288	0.0	0.011	-0.004	0.004	0.00	-0.136	0.142
Ret ETH Ex8	15288	0.0	0.012	-0.004	0.004	0.00	-0.142	0.145
Ret ETH Ex9	15288	0.0	0.012	-0.004	0.004	0.00	-0.142	0.139
Vol ETH Ex1	15288	11834.7	11102.228	4572.803	15137.675	8185.80	0.000	71453.691
Vol ETH Ex2	15288	8470.3	9692.193	2559.078	10348.858	5203.59	0.000	66927.140
Vol ETH Ex5	15288	229.3	323.843	40.384	270.716	109.57	0.000	2236.113
Vol ETH Ex8	15288	760.7	2230.433	32.561	244.295	81.20	0.000	14141.449
Vol ETH Ex9	15288	326.5	451.218	59.517	389.635	156.12	0.000	2985.140
Net ETH Ex1	15288	47588.1	1245310.013	-312949.387	315308.563	6243.25	-15598393.970	24019019.250
Net ETH Ex2	15288	-5899.0	5084314.448	-235657.952	213763.765	-703.52	-302871557.330	223865941.070
Net ETH Ex5	15288	5678.5	863513.756	-60241.397	47840.503	-1116.33	-26314138.810	17519380.160
Net ETH Ex7	15288	-32091.0	1052149.718	-160575.647	85617.230	-16403.37	-23802021.810	30731341.350
Net ETH Ex8	15288	3960.0	244126.400	-19357.410	20266.310	919.06	-5440870.420	6114072.000
Net ETH Ex9	15288	-52943.8	757342.060	-47381.688	12363.073	-2645.16	-20767948.330	16771298.330

Table 2: Correlation Matrix 1

X	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9
Ret BTC Ex1	1.0***	0.9655***	0.9581***	0.9235***	0.8982***	0.9488***	0.9014***	0.9675***	-0.0314***	-0.0626***	-0.009	-0.046***	0.0022	-0.0502***
Ret BTC Ex2	0.9655***	1.0***	0.9751***	0.9301***	0.9142***	0.9643***	0.8969***	0.9769***	-0.0288***	-0.059***	-0.0058	-0.0418***	0.0012	-0.0485***
Ret BTC Ex4	0.9581***	0.9751***	1.0***	0.937***	0.9116***	0.9759***	0.8918***	0.97***	-0.0258***	-0.0558***	-0.0069	-0.0467***	0.0019	-0.0512***
Ret BTC Ex5	0.9235***	0.9301***	0.937***	1.0***	0.864***	0.9299***	0.8652***	0.9331***	-0.0225***	-0.0571***	-0.0022	-0.0412***	0.0017	-0.0474***
Ret BTC Ex6	0.8982***	0.9142***	0.9116***	0.864***	1.0***	0.9099***	0.8389***	0.913***	-0.0225***	-0.053***	-0.0071	-0.0436***	0.0009	-0.0434***
Ret BTC Ex7	0.9488***	0.9643***	0.9759***	0.9299***	0.9099***	1.0***	0.8879***	0.9631***	-0.0282***	-0.0551***	-0.007	-0.0443***	0.0025	-0.0517***
Ret BTC Ex8	0.9014***	0.8969***	0.8918***	0.8652***	0.8389***	0.8879***	1.0***	0.9024***	-0.034***	-0.0533***	-0.0079	-0.0368***	0.0013	-0.0489***
Ret BTC Ex9	0.9675***	0.9769***	0.97***	0.9331***	0.913***	0.9631***	0.9024***	1.0***	-0.0316***	-0.058***	-0.0084	-0.0441***	0.0018	-0.0499***
Vol BTC Ex1	-0.0314***	-0.0288***	-0.0258***	-0.0225***	-0.0225***	-0.0282***	-0.034***	-0.0316***	1.0***	0.4641***	0.4645***	0.25***	0.0959***	0.3229***
Vol BTC Ex2	-0.0626***	-0.059***	-0.0558***	-0.0571***	-0.053***	-0.0551***	-0.0533***	-0.058***	0.4641***	1.0***	0.0817***	0.6478***	-0.1126***	0.6539***
Vol BTC Ex3	-0.009	-0.0058	-0.0069	-0.0022	-0.0071	-0.007	-0.0079	-0.0084	0.4645***	0.0817***	1.0***	-0.183***	0.0742***	-0.0639***
Vol BTC Ex5	-0.046***	-0.0418***	-0.0467***	-0.0412***	-0.0436***	-0.0443***	-0.0368***	-0.0441***	0.25***	0.6478***	-0.183***	1.0***	-0.1207***	0.7542***
Vol BTC Ex8	0.0022	0.0012	0.0019	0.0017	0.0009	0.0025	0.0013	0.0018	0.0959***	-0.1126***	0.0742***	-0.1207***	1.0***	-0.0854***
Vol BTC Ex9	-0.0502***	-0.0485***	-0.0512***	-0.0474***	-0.0434***	-0.0517***	-0.0489***	-0.0499***	0.3229***	0.6539***	-0.0639***	0.7542***	-0.0854***	1.0***

Table 3: VAR 1

Lag.variable	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9
L1.Ret BTC Ex1	-0.3035***	0.0722*	0.0684*	0.0575	-0.0234	0.0596	0.1821***	0.1394***	-6304.7775*	9789.4867**	-3880.8736	1069.8557***	-260.4743	621.3561**
L1.Ret BTC Ex2	0.2145***	-0.2251***	0.1509***	0.2003***	0.1444***	0.1493***	0.171***	0.2493***	-23.3596	1995.9964	-21280.8311	1433.3372***	90.7461	921.6786***
L1.Ret BTC Ex4	0.0119	0.0643	-0.3686***	0.0594	0.0471	0.1143**	0.0425	0.0505	228.9224	-2860.6892	31198.9085	-1076.1375***	91.6999	85.6422
L1.Ret BTC Ex5	-0.0338	-0.0437*	-0.0194	-0.259***	-0.053**	-0.0285	-0.0085	-0.0466*	1107.9746	2287.464	25541.8858***	-21.4655	75.593	-102.8399
L1.Ret BTC Ex6	-0.0489**	-0.0428*	-0.0451**	-0.048**	-0.0848***	-0.0672***	-0.1691***	-0.0292	2808.9544	-16809.0949***	-15691.8463*	-498.2172***	96.959	-668.4729***
L1.Ret BTC Ex7	0.0306	0.0544	0.1292***	0.0127	-0.0078	-0.2893***	0.0361	0.0293	2894.7982	14049.1841***	7501.5298	160.8163	-181.8012	-44.3012
L1.Ret BTC Ex8	-0.0362*	-0.027	-0.0303	-0.063***	-0.0221	-0.0275	-0.4254***	-0.0169	-5456.6195***	-3197.1857*	-3913.1938	155.0744	63.3927	785.1325***
L1.Ret BTC Ex9	0.1273**	0.1145**	0.0951*	-0.0013	-0.0326	0.0651	0.1577***	-0.4095***	3657.6909	-7485.7348	-23692.7504	-1426.261***	71.6545	-2070.8774***
L1.Vol BTC Ex1	-0.0	-0.0	-0.0	-0.0	-0.0*	-0.0	-0.0*	-0.0	0.3066***	0.0656***	0.1511***	0.0008	0.0009*	0.0017**
L1.Vol BTC Ex2	0.0	0.0	0.0	0.0	0.0	0.0*	0.0	0.0	0.0872***	0.2282***	0.0569	0.0078***	-0.0009*	0.0076**
L1.Vol BTC Ex3	0.0	0.0	-0.0	0.0	0.0	-0.0	0.0	0.0	0.0109***	-0.0072***	0.4989***	-0.001***	0.0001	-0.0004***
L1.Vol BTC Ex5	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	-0.0605	1.2834***	0.0866	0.2676***	-0.0033	0.1166***
L1.Vol BTC Ex8	0.0	0.0	0.0*	0.0*	0.0	0.0	0.0	0.0*	0.1877	-0.2785*	-0.1208	-0.0049	0.4397***	-0.0075
L1.Vol BTC Ex9	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.6913***	1.3799***	1.1876**	0.1163***	0.0089	0.2015***
L2.Ret BTC Ex1	-0.3507***	-0.0956**	-0.1007**	-0.1366***	-0.0375	-0.1165***	-0.0549	-0.0526	-2335.7644	-4634.2925	9267.839	49.3793	-39.5695	-194.8175
L2.Ret BTC Ex2	0.1833***	-0.0307	0.1466***	0.1274**	0.0896*	0.1542***	0.1724***	0.2096***	-3925.2461	4627.7933	19913.6836	849.3648**	174.962	1067.7167***
L2.Ret BTC Ex4	0.0824	0.0072	-0.2124***	0.0383	-0.0015	0.0671	-0.0241	0.0294	-7711.574	1768.6986	-42597.306*	-80.2313	-44.3641	579.7197
L2.Ret BTC Ex5	-0.008	-0.0099	0.0007	-0.0714***	-0.0089	0.0104	-0.0063	-0.011	1240.4621	511.3576	18949.2286*	-36.1267	-1.2428	-223.9704
L2.Ret BTC Ex6	0.1063***	0.0968***	0.0997***	0.1297***	-0.0467**	0.1156***	0.1176***	0.1104***	3849.2048*	-1920.049	11300.706	-126.9209	88.124	21.1047
L2.Ret BTC Ex7	-0.0519	0.0209	0.0679	-0.0135	0.0213	-0.2056***	0.0422	-0.0005	5805.2765	5249.2281	-17196.5578	574.8318*	-46.6777	-88.7198
L2.Ret BTC Ex8	-0.0098	-0.0013	0.0005	-0.0225	-0.0087	-0.2583***	0.0067	-0.0067	-3075.7394	-219.9841	-7727.5241	-129.0575	33.1707	133.7649
L2.Ret BTC Ex9	0.004	-0.0285	-0.0393	-0.0936*	-0.048	-0.0538	-0.0314	-0.3347***	6716.7324	-4729.2755	10426.0105	-941.7937**	-162.6663	-1325.3095***
L2.Vol BTC Ex1	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.1079***	0.0102	-0.1919***	0.0005	0.0005	-0.0004
L2.Vol BTC Ex2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0028	0.0638***	-0.1048**	0.0014**	-0.0005	-0.001
L2.Vol BTC Ex3	-0.0	-0.0	0.0	0.0	-0.0	0.0	-0.0	-0.0	0.0035	-0.0048*	0.1769***	-0.0006***	-0.0001	-0.0003*
L2.Vol BTC Ex5	-0.0	-0.0	-0.0	-0.0	-0.0**	-0.0	-0.0	-0.0	0.2423	0.3509**	-0.7958	0.081***	-0.0037	0.0573***
L2.Vol BTC Ex8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0698	-0.1745	-0.4365	-0.0066	0.2437***	0.0031
L2.Vol BTC Ex9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0058	0.3862**	-0.5774	0.0514***	0.0041	0.1271***
L3.Ret BTC Ex1	-0.0358	0.0309	0.0253	0.0276	-0.0199	0.0563	0.0692*	0.0585	647.4256	3261.007	12831.841	621.5494**	-299.6751	724.8514***
L3.Ret BTC Ex2	0.056	-0.0047	0.0879*	0.0647	0.0412	0.0954*	0.0573	0.0963*	5099.4729	7382.501	13031.3699	563.158*	170.5439	520.6555
L3.Ret BTC Ex4	-0.0683	-0.0843	-0.1822***	-0.0909*	-0.0247	-0.0784	-0.081	-0.0714	-178.3288	932.7471	-10096.809	463.9464	-218.6442	192.4098
L3.Ret BTC Ex5	0.0201	0.0366	0.0383	-0.0065	0.0178	0.0413*	0.0467*	0.0307	-4817.5464*	-5998.2374**	-3900.2329	-294.8381*	-19.2215	-168.577
L3.Ret BTC Ex6	0.0591**	0.0106	0.0031	0.0416*	-0.0161	0.0099	0.0675***	0.0347	3121.2095	4191.7846*	-6052.4508	420.3027***	-13.1693	-142.4251
L3.Ret BTC Ex7	0.0802*	0.0909**	0.1039**	0.0663	0.0664*	-0.0152	0.0905**	0.0793*	152.1467	-4401.2722	6086.3278	-253.1584	23.547	225.3224
L3.Ret BTC Ex8	-0.0501***	-0.0374**	-0.0381**	-0.052***	-0.0192	-0.0555***	-0.2303***	-0.0215	-2136.1439	-570.2576	-6984.7959	-474.1968***	64.4431	-246.6619*
L3.Ret BTC Ex9	-0.0562	-0.0322	-0.0266	-0.04	-0.0343	-0.0389	-0.006	-0.1952***	-950.4532	-3553.7133	-4182.5756	-912.5355***	316.5757	-985.3871***
L3.Vol BTC Ex1	-0.0	-0.0*	-0.0*	-0.0*	-0.0	-0.0*	-0.0	-0.0*	0.1292***	0.0348***	-0.068*	-0.0004	0.0009*	-0.0008
L3.Vol BTC Ex2	0.0*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0044	0.0531***	-0.1929***	-0.0001	-0.0004	-0.001
L3.Vol BTC Ex3	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0044*	0.0023	0.2128***	-0.0003**	-0.0001	0.0
L3.Vol BTC Ex5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.1617	0.4256***	-1.0528*	0.0692***	-0.0035	0.0687***
L3.Vol BTC Ex8	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.488***	-0.1591	0.5996	-0.0127	0.2498***	-0.0021
L3.Vol BTC Ex9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0*	-0.0	-0.5588***	0.514***	-0.332	0.1018***	-0.0038	0.1411***

Table 4: Granger Causality 1

X	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9
Ret BTC Ex1	-	5.6231***	5.6081***	7.7882***	0.3762	7.3899***	10.7017***	8.1656***	1.0329	4.2374***	0.3936	8.0572***	1.4341	5.742***
Ret BTC Ex2	6.9323***	-	4.0557***	5.3933***	3.2668**	4.1934***	4.4263***	9.6742***	0.845	0.7383	1.1354	6.4252***	0.2251	3.7335**
Ret BTC Ex4	2.0925*	1.7522	-	2.1027*	0.5032	3.3056**	1.0831	1.3716	0.8735	0.2164	3.3812**	4.637***	0.3483	0.8201
Ret BTC Ex5	0.8634	1.9069	1.0486	-	2.0259	1.4554	1.166	1.8212	1.6017	2.4105*	3.1453**	1.0782	0.1472	0.7552
Ret BTC Ex6	11.0305***	7.4362***	7.837***	13.4166***	-	11.7226***	27.9259***	9.2884***	1.8334	20.5945***	1.6839	7.2351***	0.464	6.0831***
Ret BTC Ex7	2.6339**	1.8603	4.1691***	1.0744	1.0467	-	1.3332	1.4207	0.6659	4.7874***	0.7096	2.201*	0.2881	0.325
Ret BTC Ex8	3.1507**	2.0116	2.2888*	5.2136***	0.7816	3.4546**	-	0.928	2.8927**	0.9969	0.4738	6.013***	0.2688	14.8485***
Ret BTC Ex9	3.0614**	2.7387**	2.1679*	1.1544	0.3636	1.5725	4.0429***	-	0.7307	0.7703	0.9369	7.0244***	1.1978	12.6141***
Vol BTC Ex1	4.1488***	4.1542***	4.095***	4.0704***	3.5107**	3.35**	5.8271***	3.5342**	-	31.8187***	12.9761***	0.9722	5.0365***	2.4335*
Vol BTC Ex2	1.6281	1.3055	1.1751	1.1589	0.72	1.8169	1.3603	1.2177	24.6623***	-	11.5951***	49.6486***	2.0215	39.2575***
Vol BTC Ex3	0.2454	0.3103	0.0716	0.0678	0.2472	0.1144	0.4538	0.0489	46.2742***	14.486***	-	109.9232***	0.4769	16.3385***
Vol BTC Ex5	1.0643	1.2997	0.7009	0.8396	1.6361	0.894	1.4804	1.0296	1.4495	34.424***	2.0086	-	0.3129	88.1272***
Vol BTC Ex8	1.1244	1.4	1.5032	1.7007	1.1829	1.3433	1.5641	1.8165	19.7827***	18.9439***	0.3139	6.7928***	-	0.5439
Vol BTC Ex9	0.8646	0.2846	0.6314	0.7029	0.9125	0.4703	1.2926	0.9319	10.6176***	42.3717***	1.601	117.4887***	0.7023	-

Table 5: Correlation Matrix 2

X	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Net.BTC.Ex1	Net.BTC.Ex2	Net.BTC.Ex3	Net.BTC.Ex4	Net.BTC.Ex5	Net.BTC.Ex6	Net.BTC.Ex7	Net.BTC.Ex9
Ret BTC Ex1	1.0***	0.9655***	0.9581***	0.9235***	0.8982***	0.9488***	0.9014***	0.9675***	-0.0229***	0.0036	-0.0103	0.0253***	-0.0176**	-0.0297***	0.0056	-0.0117
Ret BTC Ex2	0.9655***	1.0***	0.9751***	0.9301***	0.9142***	0.9643***	0.8969***	0.9769***	-0.0185**	-0.004	-0.012	0.02**	-0.0143*	-0.0303***	0.012	-0.0122
Ret BTC Ex4	0.9581***	0.9751***	1.0***	0.937***	0.9116***	0.9759***	0.8918***	0.97***	-0.0184**	0.0016	-0.0141*	0.0168**	-0.0071	-0.0304***	0.0087	-0.0031
Ret BTC Ex5	0.9235***	0.9301***	0.937***	1.0***	0.864***	0.9299***	0.8652***	0.9331***	-0.0159**	0.0128	-0.0121	0.0233***	-0.0253***	-0.0258***	0.0071	-0.0153*
Ret BTC Ex6	0.8982***	0.9142***	0.9116***	0.864***	1.0***	0.9099***	0.8389***	0.913***	-0.0064	0.0018	-0.0169**	0.0165**	-0.0114	-0.0395***	0.0103	-0.0083
Ret BTC Ex7	0.9488***	0.9643***	0.9759***	0.9299***	0.9099***	1.0***	0.8879***	0.9631***	-0.0127	0.0055	-0.0155*	0.019**	-0.0103	-0.0265***	0.0088	-0.0063
Ret BTC Ex8	0.9014***	0.8969***	0.8918***	0.8652***	0.8389***	0.8879***	1.0***	0.9024***	-0.0209***	0.0027	-0.0098	0.0297***	-0.0141*	-0.0335***	0.0134*	-0.0208**
Ret BTC Ex9	0.9675***	0.9769***	0.9371***	0.9331***	0.913***	0.9631***	0.9024***	1.0***	-0.019**	-0.0013	-0.0106	0.0199**	-0.0193**	-0.0311***	0.0095	-0.0166**
Net BTC Ex1	-0.0229***	-0.0185**	-0.0184**	-0.0159**	-0.0064	-0.0127	-0.0209***	-0.019**	1.0***	-0.0146*	-0.0211***	-0.0008	0.0157*	-0.0375***	-0.0185**	0.0392***
Net BTC Ex2	0.0036	-0.004	0.0016	0.0128	0.0018	0.0055	0.0027	-0.0013	-0.0146*	1.0***	-0.0358***	-0.0139*	-0.0411***	-0.01	0.0282***	-0.0026
Net BTC Ex3	-0.0103	-0.012	-0.0141*	-0.0121	-0.0169**	-0.0155*	-0.0098	-0.0106	-0.0211***	-0.0358***	1.0***	-0.0586***	-0.0635***	-0.0257***	-0.0079	-0.0283***
Net BTC Ex4	0.0253***	0.02**	0.0168**	0.0233***	0.0165**	0.019**	0.0297***	0.0199**	-0.0008	-0.0139*	-0.0586***	1.0***	-0.0331***	-0.0064	0.0466***	-0.006
Net BTC Ex5	-0.0176**	-0.0143*	-0.0071	-0.0253***	-0.0114	-0.0103	-0.0141*	-0.0193**	0.0157*	-0.0411***	-0.0635***	-0.0331***	1.0***	-0.0229***	-0.007	0.0165**
Net BTC Ex6	-0.0297***	-0.0303***	-0.0304***	-0.0258***	-0.0395***	-0.0265***	-0.0335***	-0.0311***	-0.0375***	-0.01	-0.0257***	-0.0064	-0.0229***	1.0***	-0.0111	-0.0053
Net BTC Ex7	0.0056	0.012	0.0087	0.0071	0.0103	0.0088	0.0134*	0.0095	-0.0185**	0.0282***	-0.0079	0.0466***	-0.007	-0.0111	1.0***	-0.0028
Net BTC Ex9	-0.0117	-0.0122	-0.0031	-0.0153*	-0.0083	-0.0063	-0.0208**	-0.0166**	0.0392***	-0.0026	-0.0283***	-0.006	0.0165**	-0.0053	-0.0028	1.0***

Table 6: Correlation Matrix 3

X	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9	Net.BTC.Ex1	Net.BTC.Ex2	Net.BTC.Ex3	Net.BTC.Ex4	Net.BTC.Ex5	Net.BTC.Ex6	Net.BTC.Ex7	Net.BTC.Ex9
Vol BTC Ex1	1.0***	0.4641***	0.4645***	0.25***	0.0959***	0.3229***	0.0069	0.0499***	-0.0064	0.0101	-0.0087	0.0035	0.0183**	-0.0034
Vol BTC Ex2	0.4641***	1.0***	0.0817***	0.6478***	-0.1126***	0.6539***	0.0397***	0.0491***	0.0366***	0.0326***	-0.0198**	0.0174**	0.023***	-0.0014
Vol BTC Ex3	0.4645***	0.0817***	1.0***	-0.183***	0.0742***	-0.0639***	-0.0241***	0.0102	-0.0022	-0.0132	0.033***	0.0062	0.0198**	0.0046
Vol BTC Ex5	0.25***	0.6478***	-0.183***	1.0***	-0.1207***	0.7542***	0.0603***	0.0443***	0.042***	0.0244***	-0.0342***	0.0268***	0.0276***	-0.0194**
Vol BTC Ex8	0.0959***	-0.1126***	0.0742***	-0.1207***	1.0***	-0.0854***	-0.0137*	-0.0013	-0.0049	0.0054	0.0042	0.0412***	-0.0004	0.0001
Vol BTC Ex9	0.3229***	0.6539***	-0.0639***	0.7542***	-0.0854***	1.0***	0.0647***	0.0546***	0.0278***	0.0295***	-0.0314***	0.0235***	0.0161**	-0.0218***
Net BTC Ex1	0.0069	0.0397***	-0.0241***	0.0603***	-0.0137*	0.0647***	1.0***	-0.0146*	-0.0211***	-0.0008	0.0157*	-0.0375***	-0.0185**	0.0392***
Net BTC Ex2	0.0499***	0.0491***	0.0102	0.0443***	-0.0013	0.0546***	-0.0146*	1.0***	-0.0358***	-0.0139*	-0.0411***	-0.01	0.0282***	-0.0026
Net BTC Ex3	-0.0064	0.0366***	-0.0022	0.042***	-0.0049	0.0278***	-0.0211***	-0.0358***	1.0***	-0.0586***	-0.0635***	-0.0257***	-0.0079	-0.0283***
Net BTC Ex4	0.0101	0.0326***	-0.0132	0.0244***	0.0054	0.0295***	-0.0008	-0.0139*	-0.0586***	1.0***	-0.0331***	-0.0064	0.0466***	-0.006
Net BTC Ex5	-0.0087	-0.0198**	0.033***	-0.0342***	0.0042	-0.0314***	0.0157*	-0.0411***	-0.0635***	-0.0331***	1.0***	-0.0229***	-0.007	0.0165**
Net BTC Ex6	0.0035	0.0174**	0.0062	0.0268***	0.0412***	0.0235***	-0.0375***	-0.01	-0.0257***	-0.0064	-0.0229***	1.0***	-0.0111	-0.0053
Net BTC Ex7	0.0183**	0.023***	0.0198**	0.0276***	-0.0004	0.0161**	-0.0185**	0.0282***	-0.0079	0.0466***	-0.007	-0.0111	1.0***	-0.0028
Net BTC Ex9	-0.0034	-0.0014	0.0046	-0.0194**	0.0001	-0.0218***	0.0392***	-0.0026	-0.0283***	-0.006	0.0165**	-0.0053	-0.0028	1.0***

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Table 7: Correlation Matrix 4

X	Ret.ETH.Ex1	Ret.ETH.Ex2	Ret.ETH.Ex5	Ret.ETH.Ex7	Ret.ETH.Ex8	Ret.ETH.Ex9	Vol.ETH.Ex1	Vol.ETH.Ex2	Vol.ETH.Ex5	Vol.ETH.Ex8	Vol.ETH.Ex9
Ret ETH Ex1	1.0***	0.9752***	0.9126***	0.9501***	0.914***	0.9648***	0.0002	-0.0294***	-0.0517***	-0.0049	-0.0306***
Ret ETH Ex2	0.9752***	1.0***	0.9169***	0.9631***	0.9146***	0.9714***	-0.0005	-0.0255***	-0.0485***	-0.0041	-0.0288***
Ret ETH Ex5	0.9126***	0.9169***	1.0***	0.9047***	0.8632***	0.9142***	0.0021	-0.0178**	-0.0396***	-0.0057	-0.0294***
Ret ETH Ex7	0.9501***	0.9631***	0.9047***	1.0***	0.901***	0.9518***	-0.0008	-0.0258***	-0.0459***	-0.004	-0.0292***
Ret ETH Ex8	0.914***	0.9146***	0.8632***	0.901***	1.0***	0.911***	-0.0027	-0.0314***	-0.0427***	-0.0034	-0.0214***
Ret ETH Ex9	0.9648***	0.9714***	0.9142***	0.9518***	0.911***	1.0***	0.0004	-0.0261***	-0.0506***	-0.0039	-0.026***
Vol ETH Ex1	0.0002	-0.0005	0.0021	-0.0008	-0.0027	0.0004	1.0***	0.5153***	0.2895***	0.0155*	0.3549***
Vol ETH Ex2	-0.0294***	-0.0255***	-0.0178**	-0.0258***	-0.0314***	-0.0261***	0.5153***	1.0***	0.4728***	-0.1409***	0.5224***
Vol ETH Ex5	-0.0517***	-0.0485***	-0.0396***	-0.0459***	-0.0427***	-0.0506***	0.2895***	0.4728***	1.0***	-0.0981***	0.5798***
Vol ETH Ex8	-0.0049	-0.0041	-0.0057	-0.004	-0.0034	-0.0039	0.0155*	-0.1409***	-0.0981***	1.0***	-0.0682***
Vol ETH Ex9	-0.0306***	-0.0288***	-0.0294***	-0.0292***	-0.0214***	-0.026***	0.3549***	0.5224***	0.5798***	-0.0682***	1.0***

Table 8: Correlation Matrix 5

X	Ret.ETH.Ex1	Ret.ETH.Ex2	Ret.ETH.Ex5	Ret.ETH.Ex7	Ret.ETH.Ex8	Ret.ETH.Ex9	Net.ETH.Ex1	Net.ETH.Ex2	Net.ETH.Ex5	Net.ETH.Ex7	Net.ETH.Ex8	Net.ETH.Ex9
Ret ETH Ex1	1.0***	0.9752***	0.9126***	0.9501***	0.914***	0.9648***	0.0193**	0.0029	0.0123	-0.0127	0.0119	-0.0144*
Ret ETH Ex2	0.9752***	1.0***	0.9169***	0.9631***	0.9146***	0.9714***	0.0251***	-0.0005	0.0172**	-0.0111	0.0125	-0.0185**
Ret ETH Ex5	0.9126***	0.9169***	1.0***	0.9047***	0.8632***	0.9142***	0.0234***	0.0042	0.0158*	-0.0105	0.0099	-0.0133
Ret ETH Ex7	0.9501***	0.9631***	0.9047***	1.0***	0.901***	0.9518***	0.0319***	0.0014	0.0226***	-0.0124	0.012	-0.0144*
Ret ETH Ex8	0.914***	0.9146***	0.8632***	0.901***	1.0***	0.911***	0.0246***	0.0134*	0.0245***	-0.0229***	0.0108	-0.0168**
Ret ETH Ex9	0.9648***	0.9714***	0.9142***	0.9518***	0.911***	1.0***	0.0276***	0.0009	0.0178**	-0.0135*	0.0132	-0.0218***
Net ETH Ex1	0.0193**	0.0251***	0.0234***	0.0319***	0.0246***	0.0276***	1.0***	0.005	0.0537***	-0.0289***	-0.0145*	0.0007
Net ETH Ex2	0.0029	-0.0005	0.0042	0.0014	0.0134*	0.0009	0.005	1.0***	0.0008	-0.0344***	0.0154*	-0.027***
Net ETH Ex5	0.0123	0.0172**	0.0158*	0.0226***	0.0245***	0.0178**	0.0537***	0.0008	1.0***	-0.0411***	0.0082	-0.0055
Net ETH Ex7	-0.0127	-0.0111	-0.0105	-0.0124	-0.0229***	-0.0135*	-0.0289***	-0.0344***	-0.0411***	1.0***	-0.0443***	0.0216***
Net ETH Ex8	0.0119	0.0125	0.0099	0.012	0.0108	0.0132	-0.0145*	0.0154*	0.0082	-0.0443***	1.0***	0.011
Net ETH Ex9	-0.0144*	-0.0185**	-0.0133	-0.0144*	-0.0168**	-0.0218***	0.0007	-0.027***	-0.0055	0.0216***	0.011	1.0***

Table 9: Correlation Matrix 6

X	Vol.ETH.Ex1	Vol.ETH.Ex2	Vol.ETH.Ex5	Vol.ETH.Ex8	Vol.ETH.Ex9	Net.ETH.Ex1	Net.ETH.Ex2	Net.ETH.Ex5	Net.ETH.Ex7	Net.ETH.Ex8	Net.ETH.Ex9
Vol ETH Ex1	1.0***	0.5153***	0.2895***	0.0155*	0.3549***	0.0058	0.0124	0.0249***	0.0285***	-0.0167**	0.024***
Vol ETH Ex2	0.5153***	1.0***	0.4728***	-0.1409***	0.5224***	0.0629***	0.0208***	0.0402***	0.0128	-0.0037	-0.0179**
Vol ETH Ex5	0.2895***	0.4728***	1.0***	-0.0981***	0.5798***	0.0723***	0.0106	0.0392***	0.0048	0.0214***	-0.062***
Vol ETH Ex8	0.0155*	-0.1409***	-0.0981***	1.0***	-0.0682***	-0.0154*	0.0007	0.0001	0.0061	-0.0064	0.0173**
Vol ETH Ex9	0.3549***	0.5224***	0.5798***	-0.0682***	1.0***	0.0819***	0.014*	0.0476***	-0.0348***	0.0283***	-0.0676***
Net ETH Ex1	0.0058	0.0629***	0.0723***	-0.0154*	0.0819***	1.0***	0.005	0.0537***	-0.0289***	-0.0145*	0.0007
Net ETH Ex2	0.0124	0.0208***	0.0106	0.0007	0.014*	0.005	1.0***	0.0008	-0.0344***	0.0154*	-0.027***
Net ETH Ex5	0.0249***	0.0402***	0.0392***	0.0001	0.0476***	0.0537***	0.0008	1.0***	-0.0411***	0.0082	-0.0055
Net ETH Ex7	0.0285***	0.0128	0.0048	0.0061	-0.0348***	-0.0289***	-0.0344***	-0.0411***	1.0***	-0.0443***	0.0216***
Net ETH Ex8	-0.0167**	-0.0037	0.0214***	-0.0064	0.0283***	-0.0145*	0.0154*	0.0082	-0.0443***	1.0***	0.011
Net ETH Ex9	0.024***	-0.0179**	-0.062***	0.0173**	-0.0676***	0.0007	-0.027***	-0.0055	0.0216***	0.011	1.0***

Table 10: VAR 2

Lag.variable	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Net.BTC.Ex1	Net.BTC.Ex2	Net.BTC.Ex3	Net.BTC.Ex4	Net.BTC.Ex5	Net.BTC.Ex6	Net.BTC.Ex7	Net.BTC.Ex9
L1.Ret BTC Ex1	-0.3011***	0.0738*	0.0718*	0.0644*	-0.0173	0.0643*	0.1768***	0.1428***	42005347.0599**	-73256330.2161***	-8205564.6889	-23130469.6473***	53021830.4147***	27304272.7618***	3039842.4832	3422091.804
L1.Ret BTC Ex2	0.2128***	-0.2259***	0.1482***	0.1982***	0.1418***	0.1439***	0.1738***	0.2464***	-27533285.0104	184058117.0914***	73291323.4023***	30196235.9145**	-20511381.9622**	-20576438.2871*	19751910.181**	-10319554.2434
L1.Ret BTC Ex4	0.0236	0.0674	-0.3648***	0.0649	0.0464	0.1204**	0.0533	0.056	9794968.6894	-23227089.4714	-33378077.6734	9224903.3557	-13135822.7235	-21242919.2868*	-9331514.315	-36160923.9321**
L1.Ret BTC Ex5	-0.0363	-0.0435*	-0.019	-0.2593***	-0.0521**	-0.0292	-0.0103	-0.0473*	-33131715.4622**	-38222401.8316***	-3492942.3991	-2151190.8262	22171775.6771***	-5517521.466	-739707.8349	6287007.2616
L1.Ret BTC Ex6	-0.0495**	-0.0439*	-0.0462**	-0.0485**	-0.0883***	-0.0679***	-0.1701***	-0.0301	-44429106.8234***	56712994.4165***	-3933342.169	15970519.7561**	-32800609.5678***	4298936.9489	-2352341.2837	-13336898.6927***
L1.Ret BTC Ex7	0.0339	0.0603	0.1341***	0.0164	-0.0018	-0.2839***	0.0389	0.0339	25970553.3317	-70303995.5034***	-568305.1615	-18433771.3861	-2464443.5337	-16994478.3518*	-2817693.379	41080753.6988***
L1.Ret BTC Ex8	-0.034*	-0.0262	-0.0299	-0.0616***	-0.0212	-0.0281	-0.4239***	-0.0166	33384644.4473***	-19055775.1864*	-3859806.3812	-9187183.4327*	-1788989.0798	7858015.8594*	-2107880.1721	-1398217.6007
L1.Ret BTC Ex9	0.1116**	0.1046**	0.0859*	-0.0167	-0.0408	0.0567	0.1473***	-0.4192***	7519417.8007	-11816681.2811	-34029275.6203*	-583157.1177	5013674.6889	19127966.3775*	-9501824.1872	37055781.9497***
L1.Net BTC Ex1	-0.0***	-0.0***	-0.0**	-0.0**	-0.0	-0.0**	-0.0**	-0.0**	0.0268***	0.0038	0.0054	0.0048	-0.0079***	-0.0009	0.0032	-0.0032
L1.Net BTC Ex2	-0.0	-0.0**	-0.0*	-0.0	-0.0	-0.0	0.0	-0.0*	0.023***	0.0003	-0.0028	-0.0009	-0.0069***	-0.0091***	0.0093***	0.0049
L1.Net BTC Ex3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0015	-0.0096	0.0602***	0.0066	0.0045	-0.0017	0.0065*	0.0048
L1.Net BTC Ex4	-0.0	0.0	-0.0	-0.0	0.0	-0.0	-0.0	0.0	0.001	0.059***	-0.012	-0.0173**	0.0051	0.0077	0.0132**	-0.0123
L1.Net BTC Ex5	-0.0	0.0	0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.039	0.0718**	0.0009	0.0061	0.1108***	0.0024	0.0219**	0.0462***
L1.Net BTC Ex6	-0.0	-0.0	-0.0*	-0.0**	-0.0*	-0.0*	-0.0	-0.0	0.0031	0.0109	0.0142	-0.0265***	0.0036	0.1416***	0.0089	-0.0166
L1.Net BTC Ex7	-0.0	-0.0	-0.0	-0.0	0.0	-0.0	-0.0	-0.0	0.0342	0.0013	0.0456***	0.0097	-0.0033	0.0093	0.0111	-0.0017
L1.Net BTC Ex9	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	0.0	0.0188	-0.0305*	-0.0078	0.0065	0.0069	-0.0134**	-0.0051	-0.022***
L2.Ret BTC Ex1	-0.3471***	-0.096**	-0.102**	-0.129***	-0.0301	-0.1146***	-0.0613	-0.0501	39038219.9433*	-49112253.9604***	1991264.4626	-1613155.2849	37715036.3425***	6327221.2468	570196.0668	5258541.3509
L2.Ret BTC Ex2	0.1947***	-0.0186	0.1593***	0.1382**	0.0934*	0.1619***	0.1835***	0.2185***	-77784013.9142***	114135039.4746***	92267672.8711***	7162818.2774	-28367801.6275***	-20864422.1654*	14194648.5528	-23499973.9685
L2.Ret BTC Ex4	0.0875	0.0081	-0.2124***	0.0387	-0.0021	0.0098	-0.0161	0.0319	32784699.5393	2440403.9512	-45607834.9958**	11494005.2809	-26351353.202***	-34960845.695***	-10035649.3291	-33034017.3611**
L2.Ret BTC Ex5	-0.0151	-0.0154	-0.0051	-0.0744***	-0.0106	0.0046	-0.0132	-0.0162	9433289.8849	-36020760.7844**	6667007.4187	-1557426.4543	16815050.1961***	6804652.1316	-6698600.1637	-6293110.2449
L2.Ret BTC Ex6	0.1037***	0.0955***	0.0989***	0.1278***	-0.0492**	0.1137***	0.1143***	0.1077***	-39994773.5565***	32494637.5142**	11417683.317	4533815.6498	-7818364.123**	18810125.2691***	7205673.7053*	-30581368.7414***
L2.Ret BTC Ex7	-0.0473	0.0254	0.0721	-0.0124	0.0234	-0.2025***	0.0525	0.0029	-90994075.6349***	-42807340.916*	-3100269.4795	-11793242.7389	36683249.0175***	-9791038.0237	10314277.596	25676375.8718**
L2.Ret BTC Ex8	-0.0099	-0.0015	-0.0005	-0.0238	-0.0092	-0.0092	-0.2594***	0.0061	90279941.8895***	-31417962.7454***	-3636011.6094	-2422121.3874	6358595.7474**	8787452.9078**	-2245340.6861	9865103.4692*
L2.Ret BTC Ex9	-0.0113	-0.0387	-0.0476	-0.1071*	-0.0562	-0.0583	-0.0448	-0.3437***	42045583.48	6902826.4212	-71763458.9834***	1299381.7274	-27618886.2038***	19790830.3933*	-13136048.9165	53568132.1421***
L2.Net BTC Ex1	-0.0***	-0.0***	-0.0***	-0.0***	-0.0**	-0.0**	-0.0***	-0.0***	0.0496***	-0.0188**	-0.0036	0.0	-0.0032	-0.0022	0.0036	0.0069*
L2.Net BTC Ex2	0.0	0.0	0.0	0.0	0.0	0.0*	0.0	0.0	0.0117	0.0144*	0.0142**	0.0012	-0.0065***	0.0032	0.0004	0.0092**
L2.Net BTC Ex3	-0.0*	-0.0*	-0.0	-0.0*	-0.0	-0.0	-0.0	-0.0	0.0024	-0.0079	0.0113	0.0046	0.0056*	0.0057	0.0061	0.0018
L2.Net BTC Ex4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0295*	0.0062	0.016	-0.0357***	0.0003	-0.0097	0.0106*	0.0022
L2.Net BTC Ex5	-0.0***	-0.0**	-0.0*	-0.0**	-0.0	-0.0**	-0.0**	-0.0**	-0.007	-0.0666**	0.0092	-0.0082	0.0796***	-0.0057	-0.0219**	-0.0033
L2.Net BTC Ex6	0.0*	0.0*	0.0	0.0*	0.0*	0.0*	0.0	0.0	0.0165	-0.0364*	0.009	-0.0101	-0.0052	0.0563***	-0.0247***	0.0121
L2.Net BTC Ex7	-0.0	-0.0	-0.0	-0.0	0.0*	0.0	0.0	-0.0	0.0256	0.0037	-0.021	-0.011	-0.0018	-0.0101	0.0221***	-0.0126
L2.Net BTC Ex9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0161	0.0223	0.0003	0.0074	0.0188***	0.0145**	0.0044	-0.0039
L3.Ret BTC Ex1	-0.0247	0.0357	0.0297	0.0377	-0.0137	0.0638*	0.0726*	0.0653*	20650840.2814	10331945.2403	-18484333.1764	-90827829.1426***	3065889.4192	7588900.193	1681520.3997	-20045459.6126*
L3.Ret BTC Ex2	0.0536	-0.0062	0.0867*	0.0635	0.0394	0.0909*	0.0551	0.093*	-81557362.1246***	46830985.4526	89241473.4235***	16925371.9165	-3248070.0024	-9566958.5512	-1492854.9218	-4441848.2
L3.Ret BTC Ex4	-0.0617	-0.0795	-0.177***	-0.0902*	-0.0218	-0.075	-0.0673	-0.0679	57145582.7062**	-8303807.3034	-14350898.965	25966368.043*	27499004.4145***	-25593078.4048**	-7153185.126	-31892578.7137**
L3.Ret BTC Ex5	0.019	0.0359	0.0368	-0.0059	0.018	0.0416*	0.0414	0.0308	-8401326.6697	-24267042.9369*	-2093869.3291	-1241265.8176	-2597314.1537	1996272.8143	1548116.4171	2495882.3962
L3.Ret BTC Ex6	0.0457*	0.0028	-0.0046	0.0338	-0.0231	0.0004	0.0565**	0.0259	-17236433.6847	23307908.3839*	-1358644.0253	21171462.5682***	-5242983.3131	-2362806.1488	14331997.5096***	6588057.4284
L3.Ret BTC Ex7	0.0758*	0.0877**	0.1021**	0.0639	0.0657*	-0.0166	0.0898*	0.0757*	-18331358.4947	18829926.8034	-786603.1638	-41221784.4554***	-2909100.4023	21097092.7532**	-3779319.2821	19714297.462*
L3.Ret BTC Ex8	-0.046**	-0.0359*	-0.0364*	-0.0487**	-0.0175	-0.0545***	-0.2282***	-0.0178	22084498.8081**	-23116339.1564**	-290667.9307	12421224.3035**	-9030109.443**	6033590.0976*	7086128.3057	
L3.Ret BTC Ex9	-0.0542	-0.0287	-0.0246	-0.0416	-0.0348	-0.0342	-0.0052	-0.1926***	23418391.4646	-44977751.647	-54073976.0481***	59545158.7717***	-14770466.6421*	15995955.4889	-11095509.2003	25749220.3574*
L3.Net BTC Ex1	0.0***	0.0***	0.0***	0.0***	0.0***	0.0***	0.0**	0.0***	0.0318***	0.0054	0.0093	-0.0026	0.0043	-0.0047**	-0.0033	0.0043
L3.Net BTC Ex2	0.0	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0087	0.02**	-0.0083	0.0034	-0.0075***	-0.0008	0.0011	0.0049
L3.Net BTC Ex3	0.0	0.0*	0.0*	0.0	-0.0	0.0*	0.0	0.0	-0.0044	0.0189	-0.0103	-0.0066	0.0012	0.0044	0.0062*	0.0009
L3.Net BTC Ex4	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0258	0.0013	-0.0017	-0.0133	-0.0139***	-0.0077	0.0149***	-0.009
L3.Net BTC Ex5	-0.0	0.0	-0.0	0.0	0.0	0.0	-0.0	0.0	-0.0357	-0.0113	-0.0442**	-0.0376***	0.0295***	-0.0007	0.0037	0.0072
L3.Net BTC Ex6	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0*	-0.0*	-0.0	0.0272	0.0088	0.0541***	0.0122	-0.0176***	0.0602***	0.0003	0.0013
L3.Net BTC Ex7	0.0**	0.0**	0.0**	0.0	0.0*	0.0	0.0**	0.0**	-0.0066	0.0237	0.0472***	-0.0173	0.0249***	-0.0182*	0.0036	0.0075
L3.Net BTC Ex9	0.0***	0.0**	0.0***	0.0**	0.0	0.0**	0.0**	0.0***	-0.0159	-0.0085	0.016	-0.008	0.0151***	-0.0048	-0.0001	-0.0097

Table 11: VAR 3

Lag.variable	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9	Net.BTC.Ex1	Net.BTC.Ex2	Net.BTC.Ex3	Net.BTC.Ex4	Net.BTC.Ex5	Net.BTC.Ex6	Net.BTC.Ex7	Net.BTC.Ex9
L1.Vol BTC Ex1	0.3085***	0.0641***	0.1563***	0.0006	0.0009*	0.0015**	-34.3888	249.4095***	-139.7154***	-0.5726	-15.4494	-59.7539***	-25.7189	19.0202
L1.Vol BTC Ex2	0.0879***	0.2288***	0.0576	0.0078***	-0.001**	0.0077***	-24.917	61.1456	93.0665**	-70.4047**	-15.2705	23.8416	-2.7744	1.5178
L1.Vol BTC Ex3	0.0106***	-0.0068***	0.4978***	-0.001***	0.0001	-0.0004**	-0.2328	-47.3957***	12.0458	4.1879	6.6675*	3.9565	13.1869***	-6.3101
L1.Vol BTC Ex5	-0.0867	1.3083***	0.0932	0.2728***	-0.0025	0.123***	-904.8698	794.584	1283.8154**	481.8439	97.9294	-904.2616***	309.4218	420.5479
L1.Vol BTC Ex8	0.1748	-0.2815*	-0.1387	-0.0056	0.4396***	-0.0088	-959.8724	-1153.0729	361.3545	-129.4926	73.3366	243.8935	-338.9947	-414.4873
L1.Vol BTC Ex9	0.6686***	1.3533***	1.123*	0.1147***	0.0088	0.1994***	3438.2571***	197.334	68.0438	849.0385**	-182.3752	610.078*	23.973	72.5341
L1.Net BTC Ex1	0.0**	0.0*	0.0	0.0	-0.0	0.0*	0.022***	0.0011	0.0022	0.0035	-0.0078***	-0.0037	0.0029	-0.0018
L1.Net BTC Ex2	0.0	-0.0	0.0	-0.0	-0.0	-0.0	0.0182**	-0.0015	-0.0034	-0.0009	-0.007***	-0.0096***	0.0087***	0.0041
L1.Net BTC Ex3	-0.0	0.0	0.0	-0.0	-0.0	-0.0	-0.007	-0.0077	0.0613***	0.0048	0.0043	-0.0018	0.007*	0.0045
L1.Net BTC Ex4	0.0	0.0	-0.0	0.0	0.0*	0.0***	-0.005	0.0567***	-0.0139	-0.0218***	0.008*	0.0064	0.013**	-0.0123
L1.Net BTC Ex5	0.0	-0.0	0.0	-0.0*	-0.0	0.0	-0.0065	0.0524*	-0.0071	0.004	0.1131***	0.001	0.0195**	0.0505***
L1.Net BTC Ex6	0.0	0.0	0.0	0.0	0.0	0.0**	0.0	0.0149	-0.0298***	0.0022	0.1389***	0.0106	-0.0141	0.0106
L1.Net BTC Ex7	0.0**	0.0	0.0*	0.0	-0.0	-0.0	0.0297	0.0104	0.0485***	0.0097	-0.006	0.0073	0.0104	-0.0015
L1.Net BTC Ex9	0.0	0.0	0.0	0.0	0.0	-0.0	0.0251	-0.0352**	-0.0112	0.0072	0.0075	-0.0159**	-0.0065	-0.0204**
L2.Vol BTC Ex1	0.1084***	0.0134	-0.1906***	0.0005	0.0005	-0.0003	-26.723	-22.5162	119.0131***	-2.5343	7.5719	40.8065*	89.4873***	6.7454
L2.Vol BTC Ex2	-0.0018	0.0631***	-0.1075***	0.0012*	-0.0005	-0.0009	-49.3325	-29.9555	23.5792	15.5832	-16.5361	-0.4229	-26.7207	-47.097
L2.Vol BTC Ex3	0.0032	-0.0053**	0.1758***	-0.0005***	-0.0001	-0.0003*	3.1965	30.568**	-17.7195*	-3.9429	1.5239	-0.3292	-15.9994***	5.6736
L2.Vol BTC Ex5	0.2465	0.3359**	-0.7466	0.0798***	-0.0034	0.0573***	3.8385	1754.5016*	-810.0325	-975.6669**	-751.6082***	-260.131	93.9394	903.6881**
L2.Vol BTC Ex8	-0.0673	-0.1662	-0.415	-0.0067	0.2443***	0.001	909.1043	934.6497	-761.8432	-424.4406	100.2933	213.7381	-35.6533	275.8368
L2.Vol BTC Ex9	-0.0525	0.3308**	-0.6595	0.0488***	0.0034	0.1206***	1620.3256*	-2091.6775**	423.8741	733.7893*	584.484**	902.0607***	518.4442*	-919.0452**
L2.Net BTC Ex1	0.0***	0.0***	-0.0	-0.0*	0.0	0.0	0.0398***	-0.0183**	-0.0042	-0.0019	-0.004*	-0.003	0.0031	0.0055
L2.Net BTC Ex2	0.0*	0.0	0.0	0.0	0.0	0.0	0.0102	0.01	0.0139**	0.001	-0.0054**	0.0027	-0.0005	0.0096**
L2.Net BTC Ex3	-0.0	-0.0***	-0.0**	-0.0***	-0.0	-0.0***	0.0015	-0.0097	0.0101	0.0032	0.0065*	0.0053	0.006	0.0028
L2.Net BTC Ex4	0.0	0.0*	-0.0	0.0***	0.0	0.0*	0.0264	0.0054	0.0143	-0.0367***	0.0028	-0.0114*	0.0103*	0.005
L2.Net BTC Ex5	-0.0	-0.0	0.0	0.0	-0.0	0.0*	-0.0043	-0.0585**	0.0132	-0.0111	0.0707***	-0.0063	-0.0228**	-0.009
L2.Net BTC Ex6	0.0***	-0.0	0.0	0.0	0.0	0.0**	0.0077	-0.0367*	0.0118	-0.0142	-0.0052	0.0538***	-0.0232***	0.0104
L2.Net BTC Ex7	0.0**	-0.0	-0.0	-0.0*	-0.0**	-0.0**	0.0235	0.0012	-0.02	-0.0107	-0.0025	-0.0092	0.0218***	-0.0154
L2.Net BTC Ex9	-0.0	-0.0**	-0.0	-0.0	0.0	-0.0	0.0118	0.0239	0.0007	0.0069	0.0182***	0.014**	0.0045	-0.0054
L3.Vol BTC Ex1	0.1243***	0.034***	-0.0808**	-0.0003	0.0009*	-0.0007	-8.6829	-26.2972	-86.1538**	-5.0131	34.9494**	31.2136	10.4164	20.3378
L3.Vol BTC Ex2	-0.0033	0.0548***	-0.1923***	0.0002	-0.0003	-0.0011	-104.4243*	65.6323	-34.5759	59.8371**	33.2695**	-15.0413	-12.5165	35.2866
L3.Vol BTC Ex3	0.005**	0.0024	0.2154***	-0.0004**	-0.0	-0.0	-6.62	8.0215	11.374	-4.1919	-6.5579*	-0.1225	1.7416	-3.8362
L3.Vol BTC Ex5	0.1845	0.4687***	-0.9578	0.0684***	-0.003	0.0719***	642.5435	-1493.6984*	772.0939	275.4686	-521.817**	637.4855*	-217.2884	-1684.9685***
L3.Vol BTC Ex8	0.4929***	-0.161	0.6095	-0.0116	0.2489***	-0.0004	-140.9493	184.7671	454.4285	947.2186**	-290.7188	312.4795	68.8386	134.7413
L3.Vol BTC Ex9	-0.5957***	0.4626***	-0.3241	0.103***	-0.0046	0.1361***	2256.7467***	246.2679	-218.6867	141.5988	-232.8839	460.5299	-223.9867	463.9238
L3.Net BTC Ex1	0.0	-0.0	0.0	0.0	0.0	-0.0	0.0219***	0.009	0.0093	-0.0021	-0.0069***	-0.0049	-0.0018	0.0041
L3.Net BTC Ex2	0.0	-0.0	0.0	-0.0***	0.0	-0.0***	-0.0065	0.016**	-0.0096*	0.001	-0.007***	-0.0014	0.0007	0.006
L3.Net BTC Ex3	-0.0**	-0.0*	-0.0	-0.0***	-0.0	-0.0***	-0.004	0.0178	-0.0077	0.0013	0.0033	0.0066*	0.002	0.002
L3.Net BTC Ex4	0.0	-0.0	0.0	-0.0	0.0	0.0	-0.0302*	-0.0027	-0.0056	-0.0186**	-0.0136***	-0.0091	0.0145***	-0.0062
L3.Net BTC Ex5	0.0	0.0	0.0	-0.0	0.0	0.0	-0.0473*	0.015	-0.038*	-0.0332**	0.017**	-0.0038	0.005	0.0012
L3.Net BTC Ex6	-0.0	0.0	-0.0	-0.0	-0.0	0.0*	0.0206	0.0113	0.0544***	0.0074	-0.0175***	0.0568***	-0.0006	0.0019
L3.Net BTC Ex7	0.0	0.0	0.0	0.0*	0.0	0.0**	-0.0101	0.0225	0.0485***	-0.0136	0.0224***	-0.0183*	0.0028	0.0059
L3.Net BTC Ex9	-0.0	-0.0	-0.0	0.0**	0.0	0.0	-0.0131	-0.0068	0.0181	-0.009	0.0167***	-0.0036	-0.0001	-0.0114

Table 12: VAR 4

Lag.variable	Ret.ETH.Ex1	Ret.ETH.Ex2	Ret.ETH.Ex5	Ret.ETH.Ex7	Ret.ETH.Ex8	Ret.ETH.Ex9	Vol.ETH.Ex1	Vol.ETH.Ex2	Vol.ETH.Ex5	Vol.ETH.Ex8	Vol.ETH.Ex9
L1.Ret ETH Ex1	-0.2648***	0.114***	0.1152***	0.1519***	0.2212***	0.2097***	-88731.4543***	-60746.0869**	3677.5058***	1847.778	4135.3043***
L1.Ret ETH Ex2	0.1455***	-0.2227***	0.1156**	0.1085**	0.2018***	0.2821***	107885.3406***	97957.5574***	-1526.8626	-2923.9071	-6.9068
L1.Ret ETH Ex5	-0.0216	-0.0146	-0.25***	-0.0082	-0.0026	-0.0184	38925.5133**	27460.4463*	519.9177	-485.5109	3861.6442***
L1.Ret ETH Ex7	0.0443	0.0513	0.041	-0.277***	0.0131	0.0606*	18075.8321	36858.0965	999.7013	1561.8815	238.1481
L1.Ret ETH Ex8	-0.0117	-0.0223	-0.0432**	-0.0382*	-0.5165***	-0.0038	-24654.6887	-36739.9789**	-1392.5437**	-572.433	-650.7282
L1.Ret ETH Ex9	0.0843*	0.0708	-0.0085	0.0442	0.0907**	-0.5546***	-61759.9812*	-74204.0655**	-3014.5258***	747.2479	-6644.9844***
L1.Vol ETH Ex1	-0.0	-0.0	-0.0	0.0	-0.0	0.0	0.3676***	0.0563***	-0.0003	0.0006	0.0006
L1.Vol ETH Ex2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0685***	0.2476***	0.0022***	-0.0026**	0.0014***
L1.Vol ETH Ex5	0.0	0.0	0.0*	0.0	0.0*	0.0	0.5209*	2.205***	0.2072***	-0.0031	0.2039***
L1.Vol ETH Ex8	0.0	0.0	0.0	0.0	0.0	0.0	-0.0379	-0.1194*	-0.0018	0.4189***	-0.0019
L1.Vol ETH Ex9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.9285***	1.6718***	0.0934***	0.0257	0.234***
L2.Ret ETH Ex1	-0.2869***	-0.07	-0.1067**	-0.0522	0.0155	-0.0024	4545.4189	936.9419	-648.6492	-2229.2083	1999.658
L2.Ret ETH Ex2	0.1568***	-0.0592	0.1539***	0.1287**	0.1273**	0.2384***	37017.291	109126.5331***	1514.0985	-3944.0398	897.1094
L2.Ret ETH Ex5	-0.0066	-0.0037	-0.0654***	0.0039	0.0075	0.0006	-6300.037	20885.4646	490.1113	-504.9393	947.586
L2.Ret ETH Ex7	0.0039	0.0245	0.0261	-0.1309***	0.0421	0.0374	-59014.3504**	-14111.3402	745.0078	2407.5805	1665.9267
L2.Ret ETH Ex8	0.0246	0.0171	-0.0019	-0.0021	-0.3026***	0.0252	7131.7943	-29212.3372*	-1209.0926**	135.7828	-807.6586
L2.Ret ETH Ex9	0.0493	0.0415	-0.0618	0.0101	0.058	-0.3552***	17460.572	-80305.7915**	-130.564	4379.1688	-4752.3062***
L2.Vol ETH Ex1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.1647***	0.0031	-0.0007**	0.0018	-0.0011***
L2.Vol ETH Ex2	0.0	0.0	0.0**	0.0**	0.0**	0.0	-0.0162	0.1013***	0.0007**	-0.0008	0.0019***
L2.Vol ETH Ex5	0.0	0.0*	0.0	0.0	0.0*	0.0*	-0.1574	0.1863	0.0691***	-0.0385	0.0566***
L2.Vol ETH Ex8	0.0	0.0	0.0	0.0	0.0	0.0	0.0157	-0.1566**	-0.0018	0.24***	-0.0001
L2.Vol ETH Ex9	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.5161**	-0.3043	0.0427***	0.0087	0.0878***
L3.Ret ETH Ex1	-0.1899***	-0.1139***	-0.0839**	-0.0852**	-0.1169***	-0.0605	-59006.0038*	10202.6215	3513.017***	5694.3592	2986.5702**
L3.Ret ETH Ex2	0.0861*	-0.005	0.0925*	0.0862*	0.084	0.1231**	73786.2291*	36402.1859	-48.2796	-4058.6846	-1104.1858
L3.Ret ETH Ex5	0.0049	0.0137	-0.0273	0.0225	0.0026	0.0103	-19741.5284	-24049.4791	-324.3925	1887.9715	-2364.3935***
L3.Ret ETH Ex7	0.037	0.0454	0.0348	-0.0524	0.0537	0.0492	-36004.4541	-6170.5183	1021.9231	-577.8738	3560.5232***
L3.Ret ETH Ex8	-0.0028	0.0114	-0.0222	-0.0044	-0.1216***	0.0082	-4327.7793	-8541.1257	-1686.2985***	-645.3222	307.6772
L3.Ret ETH Ex9	0.0598	0.0518	0.003	0.0405	0.0934**	-0.1276***	38944.8827	-16434.769	-1989.2931*	-2282.9777	-3583.4749**
L3.Vol ETH Ex1	0.0***	0.0***	0.0***	0.0***	0.0***	0.0**	0.1911***	0.0288***	-0.0003	0.0002	0.0002
L3.Vol ETH Ex2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0155	0.1049***	0.0008**	-0.0018	0.0006
L3.Vol ETH Ex5	-0.0**	-0.0**	-0.0***	-0.0**	-0.0***	-0.0**	-0.6763**	0.1512	0.0603***	-0.0218	0.0663***
L3.Vol ETH Ex8	-0.0**	-0.0**	-0.0*	-0.0*	-0.0*	-0.0*	0.0746	-0.0404	-0.0018	0.2707***	-0.0002
L3.Vol ETH Ex9	0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.075	0.4338**	0.0431***	0.0172	0.0741***

Table 13: VAR 5

Lag.variable	Ret.ETH.Ex1	Ret.ETH.Ex2	Ret.ETH.Ex5	Ret.ETH.Ex7	Ret.ETH.Ex8	Ret.ETH.Ex9	Net.ETH.Ex1	Net.ETH.Ex2	Net.ETH.Ex5	Net.ETH.Ex7	Net.ETH.Ex8	Net.ETH.Ex9
L1.Ret ETH Ex1	-0.2602***	0.1199***	0.1188***	0.1591***	0.2267***	0.2146***	14869276.7144***	-61581528.0907***	11512071.333***	-3336339.3294	3896671.6578***	1876967.0117
L1.Ret ETH Ex2	0.1455***	-0.2229***	0.1155**	0.1073**	0.1998***	0.2811***	-8672098.7057	99058820.7371***	1037745.9408	-2572545.6651	-925529.2533	-520935.3598
L1.Ret ETH Ex5	-0.0194	-0.0123	-0.2471***	-0.0057	0.0012	-0.0163	2637086.3329	-14072699.8679	3219654.1251*	-2895330.468	258632.1928	778476.2088
L1.Ret ETH Ex7	0.0455	0.0512	0.0416	-0.2782***	0.016	0.0615*	-6375474.6754*	-7072805.0258	-3952751.3218	6412068.0603**	-1243578.6059*	-8548227.6282***
L1.Ret ETH Ex8	-0.0094	-0.021	-0.042*	-0.0367	-0.5163***	-0.0013	2330395.1608	-40226283.6299***	-2447396.5752	6044981.445***	822070.0111*	4634747.5327***
L1.Ret ETH Ex9	0.0747*	0.0618	-0.0173	0.0361	0.0806*	-0.5635***	-1433242.0036	22432130.7699	-6851526.3735**	-6022759.2072	-2103742.4502**	2791922.2043
L1.Net ETH Ex1	-0.0**	-0.0**	-0.0**	-0.0**	-0.0*	-0.0*	0.1598***	0.0602*	0.0401***	-0.0096	0.0001	0.0024
L1.Net ETH Ex2	0.0	-0.0	-0.0	0.0	0.0	-0.0	-0.0032	0.1212***	0.0035***	0.0033*	0.0002	-0.0005
L1.Net ETH Ex5	-0.0***	-0.0***	-0.0***	-0.0**	-0.0***	-0.0***	0.0412***	-0.0495	0.0762***	0.022**	-0.0006	-0.0031
L1.Net ETH Ex7	-0.0	-0.0	0.0	-0.0*	0.0	-0.0	0.0008	0.0326	0.0112*	0.0536***	0.0028	0.0033
L1.Net ETH Ex8	-0.0	0.0	0.0	0.0	-0.0	0.0	-0.0657	-0.2277	-0.0478*	0.0881**	0.1598***	-0.1152***
L1.Net ETH Ex9	-0.0**	-0.0	-0.0*	-0.0*	-0.0***	-0.0*	0.0346***	0.0077	-0.0643***	0.0272**	0.0018	0.045***
L2.Ret ETH Ex1	-0.2931***	-0.0774*	-0.1119**	-0.061	0.0099	-0.0109	16406247.9747***	-559971.5767	12390209.2522***	-18861466.5847***	435066.3582	-5438996.9373*
L2.Ret ETH Ex2	0.1574***	-0.058	0.1549***	0.1295**	0.1288**	0.2406***	-24418864.5113***	-1080632.1366	-12266021.5521***	12592688.6388**	-172231.2025	9098233.8682***
L2.Ret ETH Ex5	-0.0044	-0.0017	-0.0627***	0.0048	0.0106	0.0029	519653.2557	-6250626.7052	3814555.2171**	-3178588.3472	-378834.4613	-1264350.2193
L2.Ret ETH Ex7	0.0125	0.0336	0.0326	-0.1227***	0.0513	0.0459	9721870.3783***	13161766.8586	1609874.0759	4902565.5381	2111120.0869***	-10383284.713***
L2.Ret ETH Ex8	0.0254	0.0168	-0.0029	-0.0019	-0.3051***	0.0256	-2417389.649	-29188409.2413***	571017.893	13396271.6755***	1344949.5188***	325694.7197
L2.Ret ETH Ex9	0.0435	0.0362	-0.066	0.0078	0.0523	-0.3609***	275984.1643	30378634.1543	-4488083.338	-10886063.2257**	-3502660.8096***	9179612.8957***
L2.Net ETH Ex1	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	0.0861***	-0.0864**	0.0239***	-0.0154**	-0.0082***	-0.0204***
L2.Net ETH Ex2	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0001	-0.0734***	0.0006	0.0007	0.0007*	0.0004
L2.Net ETH Ex5	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0023	-0.0213	0.0027	0.0094	-0.0027	0.0663***
L2.Net ETH Ex7	-0.0*	-0.0*	-0.0**	-0.0**	-0.0***	-0.0*	-0.0237**	0.0263	0.0074	0.0277***	0.0071***	0.0212***
L2.Net ETH Ex8	0.0***	0.0***	0.0**	0.0**	0.0	0.0***	0.0101	-0.2455	-0.0196	-0.2429***	0.0954***	0.0319
L2.Net ETH Ex9	-0.0	-0.0	0.0	0.0	0.0	-0.0	0.0161	0.1768***	-0.0007	0.0617***	0.007***	0.0336***
L3.Ret ETH Ex1	-0.1955***	-0.1181***	-0.0871**	-0.0912**	-0.1198***	-0.0646	14414826.6145***	-19976608.3079	19146142.3469***	-11481175.5533***	5467805.8499***	-10793736.9532***
L3.Ret ETH Ex2	0.0821	-0.0078	0.0922*	0.0847*	0.0821	0.1209**	-7274789.8139	1883238.1406	-8305131.3693**	15254859.3229***	-1111698.5603	9840261.4095***
L3.Ret ETH Ex5	0.0043	0.0127	-0.0269	0.0203	0.0013	0.0098	270030.5395	-6749457.7106	-336340.9516	-4200421.9975**	425052.1967	37868.3817
L3.Ret ETH Ex7	0.0451	0.0524	0.039	-0.0465	0.0607*	0.0558*	-1875973.1246	8438761.1428	-1904160.4135	2071546.9493	-3003418.9632***	-2404158.0466
L3.Ret ETH Ex8	-0.0013	0.0117	-0.024	-0.0037	-0.1241***	0.0083	-7299914.6851***	-10759477.456	-7415862.5543***	4650752.4144**	2224648.1055***	4591336.4413***
L3.Ret ETH Ex9	0.0621	0.0537	0.0058	0.0445	0.098**	-0.1262***	1491873.6751	25966387.7464	-248759.1778	-8235053.0676**	-4034095.7192***	440754.5922
L3.Net ETH Ex1	0.0	0.0	0.0	0.0	-0.0	0.0	0.0735***	0.0016	0.0057	0.0228***	0.0032**	0.0084*
L3.Net ETH Ex2	0.0	0.0	0.0	0.0	0.0*	0.0	-0.0018	0.0085	-0.0031**	0.0018	-0.0015***	-0.0001
L3.Net ETH Ex5	-0.0***	-0.0**	-0.0**	-0.0**	-0.0***	-0.0***	0.0587***	0.0073	0.0139*	0.0218**	0.0059***	-0.0177**
L3.Net ETH Ex7	-0.0	-0.0	-0.0*	-0.0	-0.0	-0.0	0.0165*	0.0081	-0.0077	0.0351***	-0.0004	0.0226***
L3.Net ETH Ex8	-0.0**	-0.0**	-0.0**	-0.0**	-0.0**	-0.0**	-0.0092	-0.1866	-0.0179	-0.085**	0.0262***	-0.0543**
L3.Net ETH Ex9	0.0	-0.0	0.0	0.0	-0.0	-0.0	-0.0247*	0.2503***	0.0191**	-0.0288**	-0.0106***	0.0775***

Table 14: VAR 6

Lag.variable	Vol.ETH.Ex1	Vol.ETH.Ex2	Vol.ETH.Ex5	Vol.ETH.Ex8	Vol.ETH.Ex9	Net.ETH.Ex1	Net.ETH.Ex2	Net.ETH.Ex5	Net.ETH.Ex7	Net.ETH.Ex8	Net.ETH.Ex9
L1.Vol ETH Ex1	0.3654***	0.056***	-0.0002	0.0006	0.0008*	-1.9638	-4.6076	-1.7657**	-0.6303	-0.074	1.2068
L1.Vol ETH Ex2	0.069***	0.248***	0.0023***	-0.0027**	0.0014***	1.8717	18.4019***	2.8897***	1.2099	-0.1698	0.3151
L1.Vol ETH Ex5	0.5928**	2.2194***	0.2071***	-0.0072	0.2034***	-27.1016	57.4973	58.6879**	0.2676	-7.5368	-110.1946***
L1.Vol ETH Ex8	-0.0388	-0.1229**	-0.002	0.4185***	-0.002	-11.442	-5.7303	0.3604	-1.3135	-0.163	4.5053
L1.Vol ETH Ex9	0.9447***	1.6872***	0.0919***	0.0258	0.2263***	149.8982***	-202.4581	6.209	-5.9398	18.6394***	-27.3366
L1.Net ETH Ex1	-0.0	0.0001	0.0*	0.0	0.0**	0.1519***	0.0535	0.0408***	-0.0083	-0.0006	0.0068
L1.Net ETH Ex2	0.0	0.0	-0.0	0.0	-0.0	-0.0035*	0.1205***	0.0031**	0.0033*	0.0002	-0.0002
L1.Net ETH Ex5	0.0001	0.0001	0.0	0.0	0.0**	0.039***	-0.0516	0.0739***	0.0172*	-0.0003	-0.0012
L1.Net ETH Ex7	0.0001	0.0002***	-0.0	0.0	-0.0	0.0017	0.0351	0.0076	0.0533***	0.0032*	0.0016
L1.Net ETH Ex8	-0.0002	-0.0001	-0.0	0.0	0.0	-0.0858**	-0.2257	-0.0445	0.0939***	0.1552***	-0.0964***
L1.Net ETH Ex9	0.0001	-0.0	-0.0	0.0	-0.0***	0.048***	0.0041	-0.0621***	0.0216*	0.0026	0.036***
L2.Vol ETH Ex1	0.1655***	0.0039	-0.0007**	0.0018	-0.001**	-1.3767	-0.2998	1.5431	1.8977*	-0.2642	2.2909***
L2.Vol ETH Ex2	-0.018*	0.1001***	0.0008**	-0.0009	0.0019***	-0.2606	-7.7321	2.2509**	2.5917**	-0.2571	1.7587**
L2.Vol ETH Ex5	-0.2077	0.1576	0.0671***	-0.0371	0.0587***	-37.8867	-182.2984	52.7874*	-29.3756	0.4252	-64.1688***
L2.Vol ETH Ex8	0.0163	-0.1545**	-0.0018	0.2402***	-0.0	-2.0181	-2.3006	2.132	3.2037	-0.402	-1.3375
L2.Vol ETH Ex9	-0.4674**	-0.3332	0.0409***	0.0104	0.0805***	84.5252***	387.3363***	-118.0572***	-58.7478**	14.0237**	-63.3283***
L2.Net ETH Ex1	0.0	0.0001	0.0	0.0	0.0	0.0789***	-0.0845**	0.0232***	-0.0126*	-0.0083***	-0.0161***
L2.Net ETH Ex2	0.0	0.0	-0.0	0.0	0.0	0.0	-0.075***	0.0006	0.0011	0.0007*	0.0002
L2.Net ETH Ex5	-0.0002**	-0.0	0.0	0.0	0.0	-0.0091	-0.0171	0.001	0.012	-0.0031	0.0658***
L2.Net ETH Ex7	0.0	0.0001	-0.0	0.0	-0.0	-0.0189**	0.0239	0.0053	0.0241***	0.0078***	0.0194***
L2.Net ETH Ex8	-0.0002	-0.0001	0.0	0.0	0.0	-0.0043	-0.2218	-0.0114	-0.2426***	0.0942***	0.0367
L2.Net ETH Ex9	0.0001	0.0	-0.0	0.0	-0.0***	0.0268**	0.1994***	-0.0029	0.055***	0.0081***	0.0215***
L3.Vol ETH Ex1	0.1893***	0.0278***	-0.0002	0.0003	0.0004	-2.1569*	0.7937	-0.3429	2.3057**	-0.2593	0.5323
L3.Vol ETH Ex2	-0.016	0.1031***	0.0008**	-0.0019	0.0006	1.2159	-2.4037	1.5359	0.728	0.108	0.4764
L3.Vol ETH Ex5	-0.6712**	0.1397	0.057***	-0.0219	0.058***	39.2915	199.4949	-55.5635**	43.1622	-21.456***	-23.7297
L3.Vol ETH Ex8	0.075	-0.0395	-0.0017	0.2707***	-0.0	12.5389	16.5189	1.9011	0.4277	0.0394	-1.3385
L3.Vol ETH Ex9	0.0023	0.4754**	0.0418***	0.0156	0.0711***	76.3191**	-92.1134	4.3502	-110.2147***	9.5294	-17.8986
L3.Net ETH Ex1	-0.0	0.0	-0.0	0.0	0.0***	0.0656***	-0.0024	0.0036	0.0258***	0.0021	0.012**
L3.Net ETH Ex2	0.0	0.0	0.0	-0.0	0.0	-0.0019	0.0078	-0.0033**	0.0015	-0.0014***	-0.0003
L3.Net ETH Ex5	-0.0001	-0.0	0.0	-0.0	-0.0	0.0503***	0.0067	0.0104	0.0256***	0.0055**	-0.0152**
L3.Net ETH Ex7	0.0001*	0.0	-0.0	0.0	0.0	0.0181*	0.0091	-0.009	0.0308***	-0.0006	0.0199***
L3.Net ETH Ex8	-0.0004	-0.0006**	0.0	0.0	0.0*	-0.0121	-0.1494	-0.0102	-0.0897**	0.0265***	-0.047*
L3.Net ETH Ex9	0.0	-0.0001	-0.0**	-0.0	-0.0***	-0.0121	0.253***	0.0151	-0.0344***	-0.0096***	0.0673***

Table 15: Granger Causality 2

X	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Net.BTC.Ex1	Net.BTC.Ex2	Net.BTC.Ex3	Net.BTC.Ex4	Net.BTC.Ex5	Net.BTC.Ex6	Net.BTC.Ex7	Net.BTC.Ex9
Ret BTC Ex1	-	7.921***	7.6375***	10.915***	0.576	10.0873***	13.5792***	10.3437***	2.9519*	7.5288***	0.3912	6.9938***	41.3174***	5.459***	0.0799	0.7577
Ret BTC Ex2	9.5755***	-	4.5763**	7.212***	4.5051**	4.3301**	4.9969***	12.0307***	0.7982	18.8414***	6.2282***	2.1064	6.6238***	1.7151	2.374*	1.3195
Ret BTC Ex4	2.6991*	1.4242	-	1.8737	0.588	3.8335**	0.424	1.2325	0.2082	0.4125	2.7679*	0.001	10.8913***	2.2507	0.6064	2.1126
Ret BTC Ex5	1.0469	1.8764	0.5261	-	2.7554*	0.9016	0.0421	2.0436	4.3096**	4.3491**	0.5404	0.0261	22.5809***	1.3897	1.3661	1.3443
Ret BTC Ex6	14.3485***	11.08***	12.0085***	18.8389***	-	17.1293***	36.4303***	12.8914***	15.3876***	11.5126***	1.3267	1.9219	36.3519***	6.6058***	1.8205	24.8896***
Ret BTC Ex7	2.7082*	0.757	3.7892**	0.6718	0.0574	-	0.1643	0.5505	9.0147***	5.665***	0.0676	0.2054	19.8871***	4.0804**	0.9589	5.6111***
Ret BTC Ex8	0.8351	0.9151	1.2596	3.7809**	0.5415	0.9371	-	0.4609	23.3016***	3.0833**	0.484	3.8066**	3.6887**	5.7676***	1.2933	1.6367
Ret BTC Ex9	3.6823**	4.0493**	3.3018**	1.6522	0.5033	2.1038	6.1899***	-	0.8235	0.6448	2.8778*	2.9149*	5.8274***	0.9717	0.3929	5.0363***
Net BTC Ex1	16.278***	6.951***	5.7099***	8.6486***	3.0659**	4.9814***	12.4758***	6.746***	-	2.354*	0.582	0.652	7.4344***	0.3	1.5129	1.8349
Net BTC Ex2	1.4863	3.1552**	2.2412	1.0653	0.813	2.7115*	0.7161	2.4527*	4.6895***	-	3.5278**	0.1059	9.1682***	5.2306***	6.6033***	3.5844**
Net BTC Ex3	1.8409	1.5822	1.2196	1.3673	1.4426	1.1479	1.9543	1.3123	0.1381	0.3881	-	0.9424	2.3695*	1.0283	3.3476**	0.3827
Net BTC Ex4	0.3151	0.1285	0.0549	0.5422	0.0922	0.198	0.283	0.363	1.4989	6.2594***	1.544	-	0.6704	2.1665	4.4864**	1.1877
Net BTC Ex5	11.1922***	3.0378**	2.1927	5.2622***	0.9736	2.9827*	3.2134**	3.1034**	0.8253	5.5338***	0.0412	1.086	-	0.1405	5.5695***	5.7383***
Net BTC Ex6	1.8374	1.4142	2.2997	2.7471*	2.5832*	2.4077*	0.5202	1.4671	0.6863	1.4922	1.5521	4.0945**	0.9146	-	6.7729***	1.6638
Net BTC Ex7	0.0699	0.1619	0.1151	0.3788	1.539	0.2613	0.6119	0.0675	1.335	0.0619	4.2667**	0.7952	0.188	0.7894	-	0.5493
Net BTC Ex9	0.6166	0.4694	0.4081	0.821	0.2101	0.3942	0.0518	0.3611	1.1971	2.5997*	0.3065	0.3911	9.4917***	4.6687***	0.7646	-

Table 16: Granger Causality 3

X	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9	Net.BTC.Ex1	Net.BTC.Ex2	Net.BTC.Ex3	Net.BTC.Ex4	Net.BTC.Ex5	Net.BTC.Ex6	Net.BTC.Ex7	Net.BTC.Ex9
Vol BTC Ex1	-	31.5324***	13.7692***	0.7638	5.0137***	1.9359	0.4077	7.1464***	7.5857***	0.0244	2.1064*	3.8744***	9.4581***	0.6663
Vol BTC Ex2	25.3993***	-	11.7187***	49.5377***	2.2734*	39.8468***	1.8169	0.8506	2.1378*	3.4552**	1.7392	0.4994	0.9903	1.2325
Vol BTC Ex3	45.8987***	14.3306***	-	107.6839***	0.4512	15.6926***	0.1182	4.2116***	1.489	0.5386	1.715	0.4303	4.7023***	0.6725
Vol BTC Ex5	1.6367	36.0471***	1.6945	-	0.2234	95.6234***	0.5485	2.3336*	2.2806*	1.9255	5.4246***	3.7816**	0.6231	6.255***
Vol BTC Ex8	19.4001***	18.5762***	0.3185	6.5962***	-	0.8077	0.5157	0.5625	0.4509	2.202*	0.5681	6.273***	1.6208	0.2968
Vol BTC Ex9	10.8364***	38.7103***	1.5495	114.7477***	0.6741	-	12.5488***	1.9591	0.2035	3.1772**	2.1087*	5.7893***	1.2954	1.8447
Net BTC Ex1	3.8859***	6.2003***	0.4038	1.0557	0.1995	1.1775	-	1.9238	1.0745	0.4024	7.7431***	1.6426	0.9601	1.0101
Net BTC Ex2	1.6589	0.7089	1.3727	5.4806***	0.1536	3.3928**	2.6033*	-	3.1745**	0.0615	7.9239***	3.5861**	3.7603**	3.1176**
Net BTC Ex3	2.3983*	4.8342***	2.6477**	9.3065***	0.0399	8.839***	0.1742	1.0927	-	0.9458	2.0066	0.7161	3.2828**	0.3631
Net BTC Ex4	1.0622	1.8795	0.3164	3.6342**	1.1101	8.0645***	2.0728	3.7258**	1.0428	-	3.774**	2.0489	5.1385***	1.0453
Net BTC Ex5	0.9143	0.6553	0.2485	1.8355	0.0084	1.8417	1.1009	2.3104*	1.3722	2.4001*	-	0.1714	3.2557**	4.5326***
Net BTC Ex6	3.3939**	0.0595	0.2287	0.7581	1.0817	5.6379***	0.4382	1.0025	5.8664***	4.0082***	3.326**	-	4.2383***	0.8614
Net BTC Ex7	3.1142**	0.7188	1.1212	3.1698**	1.6905	3.693**	0.8688	0.327	5.6503***	0.8959	3.4662**	1.6962	-	0.6124
Net BTC Ex9	0.3746	2.2959*	0.1519	2.5426*	0.3291	0.5444	1.2071	2.2354*	1.1273	0.9487	9.4351***	3.8882***	0.7239	-

Table 17: Granger Causality 4

X	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9
Ret BTC Ex1	-	5.6231***	5.6081***	7.7882***	0.3762	7.3899***	10.7017***	8.1656***	1.0329	4.2374***	0.3936	8.0572***	1.4341	5.742***
Ret BTC Ex2	6.9323***	-	4.0557***	5.3933***	3.2668**	4.1934***	4.4263***	9.6742***	0.845	0.7383	1.1354	6.4252***	0.2251	3.7335**
Ret BTC Ex4	2.0925*	1.7522	-	2.1027*	0.5032	3.3056**	1.0831	1.3716	0.8735	0.2164	3.3812**	4.637***	0.3483	0.8201
Ret BTC Ex5	0.8634	1.9069	1.0486	-	2.0259	1.4554	1.166	1.8212	1.6017	2.4105*	3.1453**	1.0782	0.1472	0.7552
Ret BTC Ex6	11.0305***	7.4362***	7.837***	13.4166***	-	11.7226***	27.9259***	9.2884***	1.8334	20.5945***	1.6839	7.2351***	0.464	6.0831***
Ret BTC Ex7	2.6339**	1.8603	4.1691***	1.0744	1.0467	-	1.3332	1.4207	0.6659	4.7874***	0.7096	2.201*	0.2881	0.325
Ret BTC Ex8	3.1507**	2.0116	2.2888*	5.2136***	0.7816	3.4546**	-	0.928	2.8927**	0.9969	0.4738	6.013***	0.2688	14.8485***
Ret BTC Ex9	3.0614**	2.7387**	2.1679*	1.1544	0.3636	1.5725	4.0429***	-	0.7307	0.7703	0.9369	7.0244***	1.1978	12.6141***
Vol BTC Ex1	4.1488***	4.1542***	4.095***	4.0704***	3.5107**	3.35**	5.8271***	3.5342**	-	31.8187***	12.9761***	0.9722	5.0365***	2.4335*
Vol BTC Ex2	1.6281	1.3055	1.1751	1.1589	0.72	1.8169	1.3603	1.2177	24.6623***	-	11.5951***	49.6486***	2.0215	39.2575***
Vol BTC Ex3	0.2454	0.3103	0.0716	0.0678	0.2472	0.1144	0.4538	0.0489	46.2742***	14.486***	-	109.9232***	0.4769	16.3385***
Vol BTC Ex5	1.0643	1.2997	0.7009	0.8396	1.6361	0.894	1.4804	1.0296	1.4495	34.424***	2.0086	-	0.3129	88.1272***
Vol BTC Ex8	1.1244	1.4	1.5032	1.7007	1.1829	1.3433	1.5641	1.8165	19.7827***	18.9439***	0.3139	6.7928***	-	0.5439
Vol BTC Ex9	0.8646	0.2846	0.6314	0.7029	0.9125	0.4703	1.2926	0.9319	10.6176***	42.3717***	1.601	117.4887***	0.7023	-

Table 18: Granger Causality 5

X	Ret.BTC.Ex1	Ret.BTC.Ex2	Ret.BTC.Ex4	Ret.BTC.Ex5	Ret.BTC.Ex6	Ret.BTC.Ex7	Ret.BTC.Ex8	Ret.BTC.Ex9	Vol.BTC.Ex1	Vol.BTC.Ex2	Vol.BTC.Ex3	Vol.BTC.Ex5	Vol.BTC.Ex8	Vol.BTC.Ex9
Ret BTC Ex1	-	5.6231***	5.6081***	7.7882***	0.3762	7.3899***	10.7017***	8.1656***	1.0329	4.2374***	0.3936	8.0572***	1.4341	5.742***
Ret BTC Ex2	6.9323***	-	4.0557***	5.3933***	3.2668**	4.1934***	4.4263***	9.6742***	0.845	0.7383	1.1354	6.4252***	0.2251	3.7335**
Ret BTC Ex4	2.0925*	1.7522	-	2.1027*	0.5032	3.3056**	1.0831	1.3716	0.8735	0.2164	3.3812**	4.637***	0.3483	0.8201
Ret BTC Ex5	0.8634	1.9069	1.0486	-	2.0259	1.4554	1.166	1.8212	1.6017	2.4105*	3.1453**	1.0782	0.1472	0.7552
Ret BTC Ex6	11.0305***	7.4362***	7.837***	13.4166***	-	11.7226***	27.9259***	9.2884***	1.8334	20.5945***	1.6839	7.2351***	0.464	6.0831***
Ret BTC Ex7	2.6339**	1.8603	4.1691***	1.0744	1.0467	-	1.3332	1.4207	0.6659	4.7874***	0.7096	2.201*	0.2881	0.325
Ret BTC Ex8	3.1507**	2.0116	2.2888*	5.2136***	0.7816	3.4546**	-	0.928	2.8927**	0.9969	0.4738	6.013***	0.2688	14.8485***
Ret BTC Ex9	3.0614**	2.7387**	2.1679*	1.1544	0.3636	1.5725	4.0429***	-	0.7307	0.7703	0.9369	7.0244***	1.1978	12.6141***
Vol BTC Ex1	4.1488***	4.1542***	4.095***	4.0704***	3.5107**	3.35**	5.8271***	3.5342**	-	31.8187***	12.9761***	0.9722	5.0365***	2.4335*
Vol BTC Ex2	1.6281	1.3055	1.1751	1.1589	0.72	1.8169	1.3603	1.2177	24.6623***	-	11.5951***	49.6486***	2.0215	39.2575***
Vol BTC Ex3	0.2454	0.3103	0.0716	0.0678	0.2472	0.1144	0.4538	0.0489	46.2742***	14.486***	-	109.9232***	0.4769	16.3385***
Vol BTC Ex5	1.0643	1.2997	0.7009	0.8396	1.6361	0.894	1.4804	1.0296	1.4495	34.424***	2.0086	-	0.3129	88.1272***
Vol BTC Ex8	1.1244	1.4	1.5032	1.7007	1.1829	1.3433	1.5641	1.8165	19.7827***	18.9439***	0.3139	6.7928***	-	0.5439
Vol BTC Ex9	0.8646	0.2846	0.6314	0.7029	0.9125	0.4703	1.2926	0.9319	10.6176***	42.3717***	1.601	117.4887***	0.7023	-

Table 19: Granger Causality 6

X	Vol.ETH.Ex1	Vol.ETH.Ex2	Vol.ETH.Ex5	Vol.ETH.Ex8	Vol.ETH.Ex9	Net.ETH.Ex1	Net.ETH.Ex2	Net.ETH.Ex5	Net.ETH.Ex7	Net.ETH.Ex8	Net.ETH.Ex9
Vol ETH Ex1	-	36.0295***	5.0954***	2.1579*	2.5141*	5.863***	0.3393	1.6811	4.4728***	1.8852	8.909***
Vol ETH Ex2	16.2152***	-	27.9296***	3.8031***	15.0***	0.9815	3.4183**	7.9988***	2.7729**	0.5009	1.9539
Vol ETH Ex5	3.4124**	24.4886***	-	0.6615	118.2831***	0.7397	0.8019	3.8424***	0.6822	3.0275**	11.3336***
Vol ETH Ex8	1.1803	32.3376***	7.9673***	-	0.693	0.8678	0.1073	0.5729	0.1418	0.1105	0.2926
Vol ETH Ex9	7.3378***	26.1143***	104.7374***	0.6632	-	17.3908***	3.5905**	10.3708***	9.4797***	8.1218***	6.263***
Net ETH Ex1	0.1949	1.1829	1.152	0.7265	6.3079***	-	2.5922*	27.3767***	5.4385***	9.4613***	5.043***
Net ETH Ex2	0.6239	1.6324	0.7701	0.0345	1.3629	1.3524	-	4.0028***	1.7822	5.1426***	0.0436
Net ETH Ex5	2.1317*	0.2729	0.1405	0.0141	1.9425	10.355***	0.4572	-	4.0495***	2.5018*	29.3815***
Net ETH Ex7	1.5127	4.443***	0.5155	0.3319	0.6749	2.47*	0.4438	1.2297	-	7.3007***	8.1817***
Net ETH Ex8	1.2923	1.7388	0.4317	0.0142	1.1805	1.6341	1.9002	1.0478	20.288***	-	6.5278***
Net ETH Ex9	0.5197	0.7281	2.6872**	0.0934	13.2385***	6.2804***	12.1491***	15.8246***	12.0537***	8.0638***	-

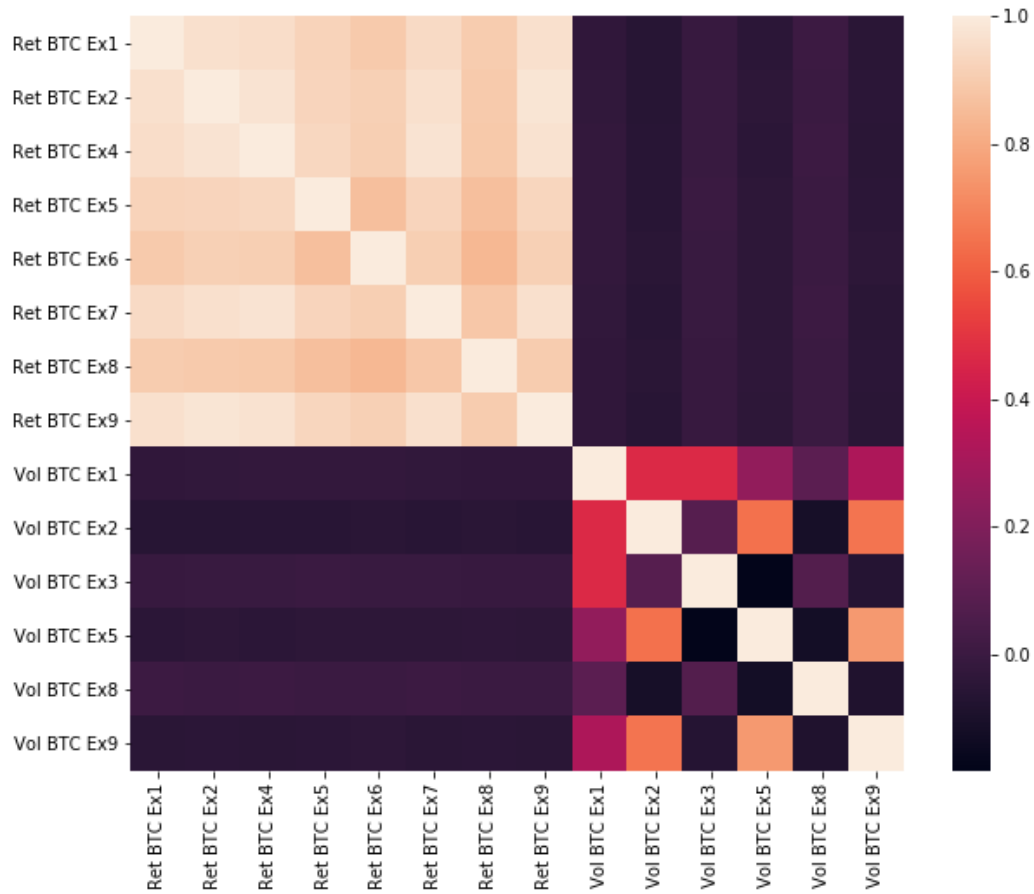


Figure 1: Heatmap 1

References

Bae, Kyoungun, Albert S Kyle, Eun Jung Lee, and Anna A Obizhaeva. 2014. “An Invariance Relationship in the Number of Buy-Sell Switching Points.” Working Paper, University of Maryland.

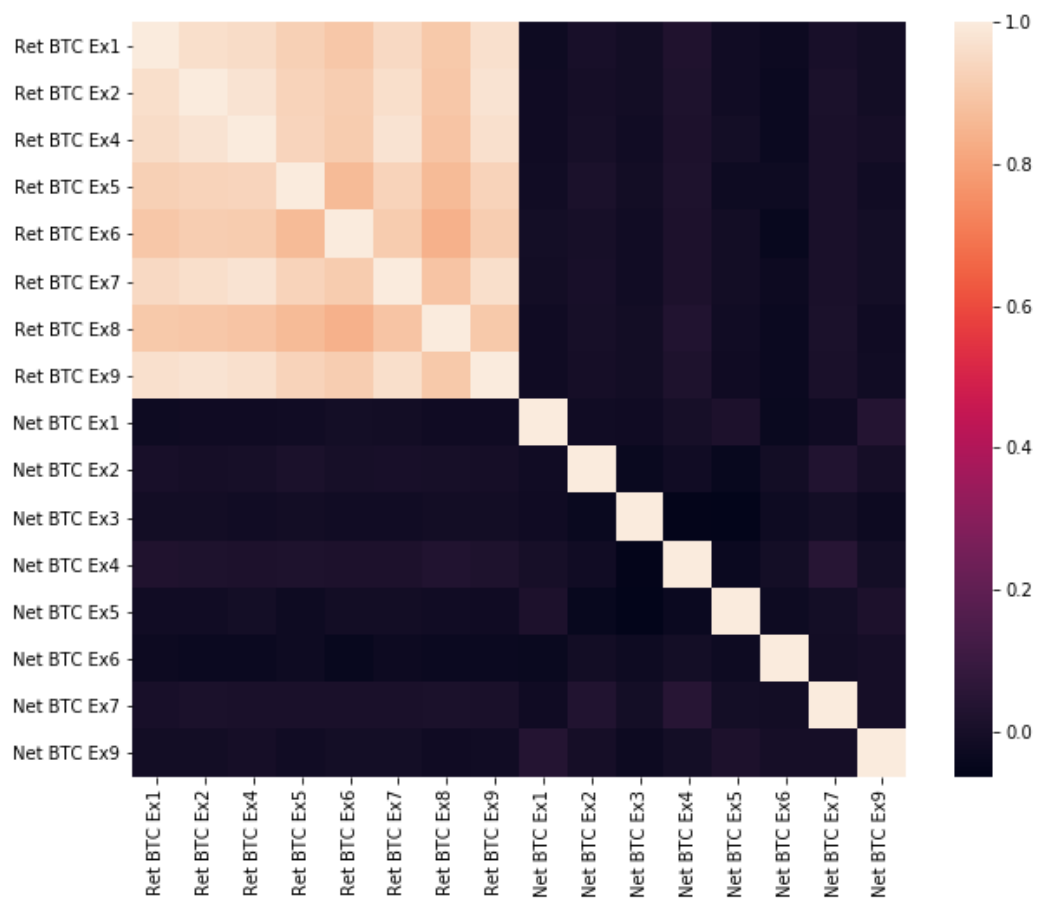


Figure 2: Heatmap 2

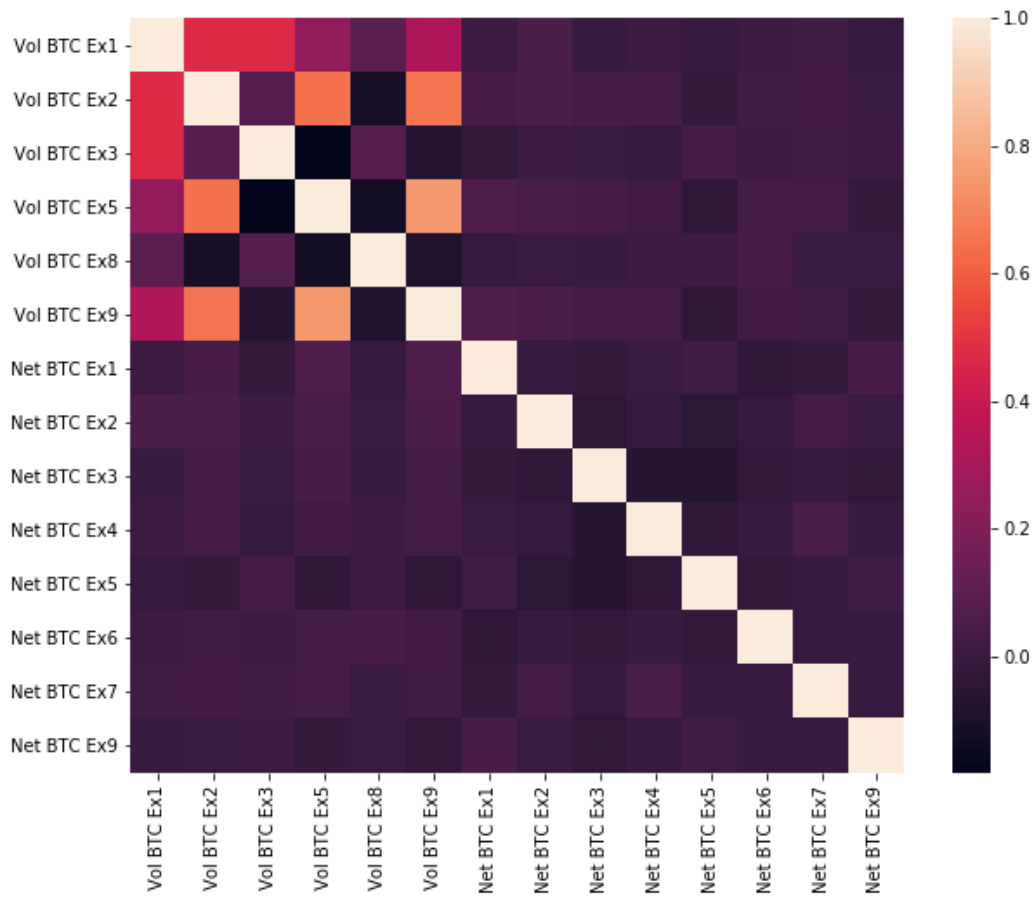


Figure 3: Heatmap 3

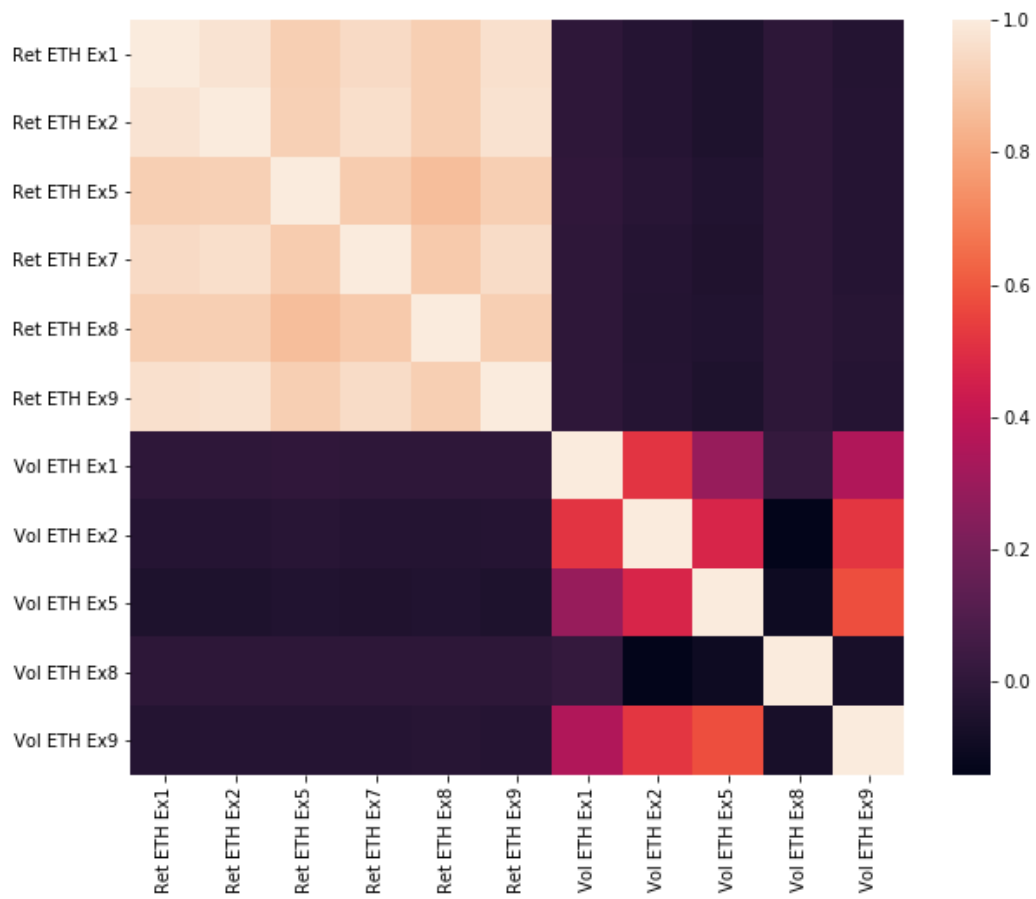


Figure 4: Heatmap 4

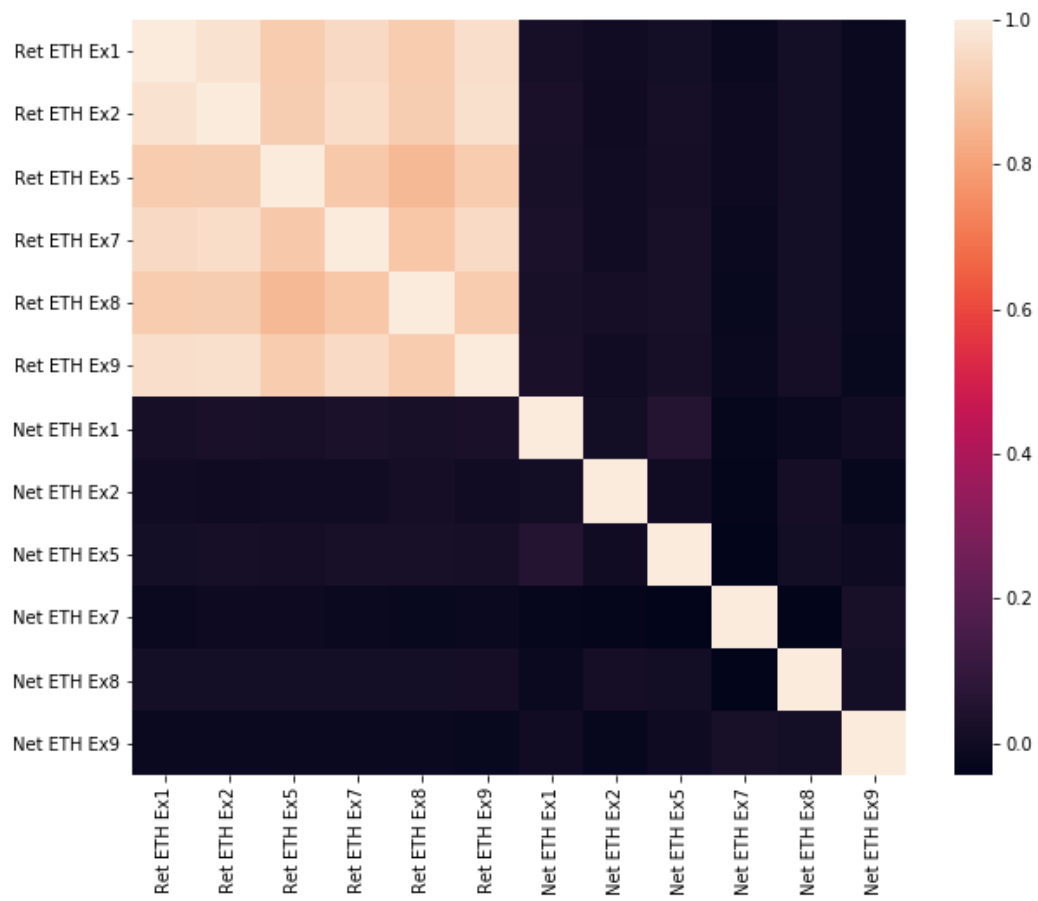


Figure 5: Heatmap 5

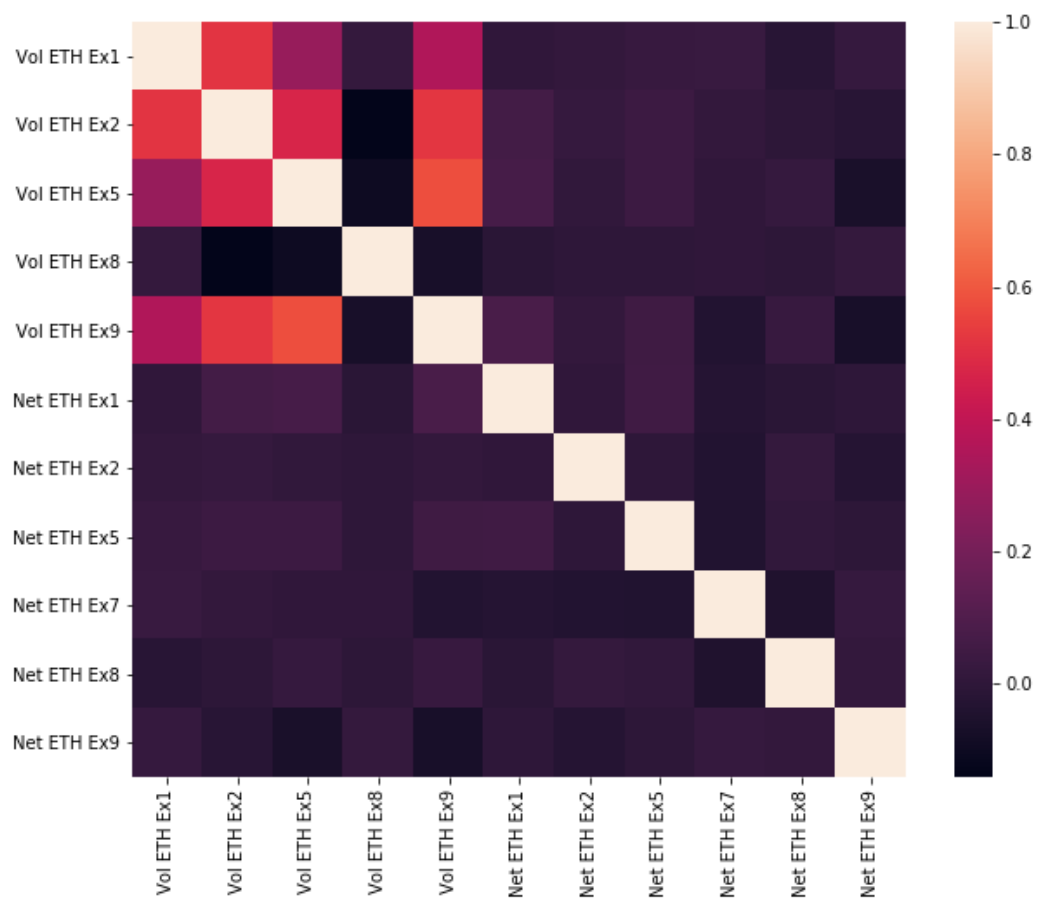


Figure 6: Heatmap 6