

---

## Table of Contents

Lab 3: Multi-factor CAPM modelling and analysis .....	1
(a) Plot of excess returns and summary stats .....	39
(b) Scatterplots and correlations between the industry excess returns and both SMB and HML .....	42
(c) Fit Multi-Factor Model .....	46
(e) Plots of regression lines and residuals to examine fit .....	47

## Lab 3: Multi-factor CAPM modelling and analysis

Data Entry - Same data as for Lab 2 You can use Home --> Import Data for this, or if you saved your data as suggested in the lab 2 code, use "load Lab2.mat" This time I just copied and pasted the monthly data from Lab 2 into Matlab again using the variable names 'FFmat' and 'indmat', i.e.

```
FFmat = [192607      2.62    -2.16    -2.92     0.22
192608      2.56    -1.49     4.88     0.25
192609      0.36    -1.38    -0.01     0.23
192610     -3.43     0.04     0.71     0.32
192611      2.44    -0.24    -0.31     0.31
192612      2.77    -0.01    -0.10     0.28
192701     -0.11    -0.30     4.79     0.25
192702      4.32    -0.24     3.35     0.26
192703      0.32    -1.87    -2.58     0.30
192704      0.41     0.29     0.95     0.25
192705      5.39     1.53     5.07     0.30
192706     -2.30     0.65    -2.04     0.26
192707      7.27    -3.54    -0.86     0.30
192708      2.42    -0.75    -4.14     0.28
192709      4.69    -3.44    -1.08     0.21
192710     -4.44     2.04    -4.45     0.25
192711      6.66     2.56    -0.02     0.21
192712      2.15     1.06    -0.73     0.22
192801     -0.60     4.40    -1.32     0.25
192802     -1.77    -1.96    -0.63     0.33
192803      8.80    -0.24    -1.41     0.29
192804      4.10     4.08     3.42     0.22
192805      1.52     3.06    -3.70     0.32
192806     -4.84    -3.59     0.07     0.31
192807      0.69    -1.63    -0.07     0.32
192808      6.64    -2.14    -2.12     0.32
192809      2.87     1.77     1.35     0.27
192810      1.47     2.71    -2.63     0.41
192811     11.75    -2.20     3.30     0.38
192812      0.47    -1.09    -0.02     0.06
192901      4.87    -2.80    -1.75     0.34
192902     -0.38     0.87     0.94     0.36
192903     -1.14    -4.36     1.00     0.34
192904      1.32    -0.82     0.46     0.36
192905     -6.35    -7.09     0.71     0.44
```

---

192906	9.45	-1.74	-2.48	0.52
192907	4.20	-4.38	1.99	0.33
192908	8.16	-8.79	-0.49	0.40
192909	-5.35	1.42	-1.12	0.35
192910	-20.01	-3.77	8.95	0.46
192911	-12.70	-2.20	4.70	0.37
192912	1.43	-4.63	0.25	0.37
193001	5.52	4.46	-2.29	0.14
193002	2.47	0.70	-0.55	0.30
193003	7.15	3.71	0.37	0.35
193004	-2.30	-0.67	-1.96	0.21
193005	-1.59	-1.78	-1.57	0.26
193006	-16.06	-3.33	2.11	0.27
193007	3.77	0.56	-2.54	0.20
193008	0.32	-2.13	-0.88	0.09
193009	-12.62	-2.17	-4.45	0.22
193010	-8.79	-1.02	-0.61	0.09
193011	-2.73	2.23	-2.90	0.13
193012	-7.98	-4.97	-5.01	0.14
193101	6.10	3.79	7.56	0.15
193102	10.90	2.71	2.22	0.04
193103	-6.53	2.80	-3.08	0.13
193104	-9.93	-4.87	-3.39	0.08
193105	-13.38	5.85	-6.31	0.09
193106	13.72	-5.66	10.58	0.08
193107	-6.56	1.82	-3.76	0.06
193108	0.20	-1.14	-2.47	0.03
193109	-29.04	0.09	-6.65	0.03
193110	7.82	-1.47	0.45	0.10
193111	-9.05	5.19	-6.05	0.17
193112	-13.46	-0.52	-8.96	0.12
193201	-1.31	3.77	10.69	0.23
193202	5.37	-1.33	-5.12	0.23
193203	-11.03	1.73	-1.00	0.16
193204	-18.03	1.73	-0.91	0.11
193205	-20.81	4.48	-4.03	0.06
193206	-0.53	-0.49	5.49	0.02
193207	33.72	-5.95	35.48	0.03
193208	36.57	19.24	27.74	0.03
193209	-3.12	-2.45	-6.41	0.03
193210	-13.14	-2.63	-9.98	0.02
193211	-5.59	1.40	-12.26	0.02
193212	4.57	-9.72	-6.92	0.01
193301	0.97	-1.02	8.25	0.01
193302	-15.00	-3.26	-2.90	-0.03
193303	3.36	4.90	6.98	0.04
193304	38.27	5.69	18.34	0.10
193305	21.15	39.04	15.19	0.04
193306	13.42	8.46	-2.72	0.02
193307	-9.63	-0.41	0.59	0.02
193308	12.10	-5.78	3.78	0.03
193309	-10.49	0.25	-13.45	0.02
193310	-8.33	0.40	-8.55	0.01
193311	9.97	-6.85	2.10	0.02

---

---

193312	1.98	0.67	-1.41	0.02
193401	12.93	11.17	16.42	0.05
193402	-2.35	5.09	2.51	0.02
193403	0.46	2.64	-3.63	0.02
193404	-1.80	3.36	-5.02	0.01
193405	-7.11	0.18	-7.12	0.01
193406	2.51	-2.38	-2.20	0.01
193407	-10.83	-6.42	-12.06	0.01
193408	5.95	4.59	1.86	0.01
193409	-0.31	-1.51	-0.32	0.01
193410	-1.94	1.26	-4.63	0.01
193411	8.40	7.56	-4.26	0.01
193412	0.38	2.94	-3.29	0.01
193501	-3.29	1.09	-2.22	0.01
193502	-1.88	0.50	-7.16	0.02
193503	-3.71	-3.77	-4.82	0.01
193504	8.91	-2.09	5.09	0.01
193505	3.47	-3.91	1.89	0.01
193506	5.52	-5.54	4.27	0.01
193507	7.35	2.97	4.99	0.01
193508	2.60	7.52	5.14	0.01
193509	2.58	0.59	-4.83	0.01
193510	7.12	2.30	-0.43	0.01
193511	5.17	5.66	10.53	0.02
193512	4.60	0.96	0.27	0.01
193601	6.60	6.43	10.09	0.01
193602	2.56	0.77	3.98	0.01
193603	0.92	1.10	-2.23	0.02
193604	-8.07	-6.81	-2.18	0.02
193605	5.01	0.81	2.69	0.02
193606	2.57	-3.20	-0.97	0.03
193607	6.45	1.12	1.35	0.01
193608	1.06	-0.09	3.84	0.02
193609	1.42	3.12	-0.32	0.01
193610	6.89	-2.19	1.61	0.02
193611	3.32	8.34	-1.01	0.01
193612	0.21	3.67	4.96	0.00
193701	3.24	4.21	3.22	0.01
193702	1.28	0.63	5.94	0.02
193703	-0.36	-2.15	7.05	0.01
193704	-7.45	-3.40	-4.91	0.03
193705	-0.92	-0.74	-3.17	0.06
193706	-4.19	-3.05	-3.56	0.03
193707	8.86	1.17	0.15	0.03
193708	-4.88	0.51	-1.99	0.02
193709	-13.58	-6.76	-4.54	0.04
193710	-9.49	0.51	-1.53	0.02
193711	-8.39	-3.24	0.22	0.02
193712	-4.01	-7.80	-0.85	0.00
193801	0.76	5.19	-2.22	0.00
193802	5.79	0.60	-1.96	0.00
193803	-23.70	-3.56	-4.41	-0.01
193804	14.55	6.58	-0.35	0.01
193805	-3.92	-2.38	-0.42	0.00

---

---

193806	23.61	3.53	2.11	0.00
193807	7.20	6.72	0.78	-0.01
193808	-2.72	-2.46	-4.26	0.00
193809	0.84	-2.53	-1.26	0.02
193810	7.77	6.62	3.98	0.01
193811	-1.77	-2.42	-0.76	-0.06
193812	4.10	-1.85	0.77	0.00
193901	-5.95	-1.43	-3.52	-0.01
193902	3.48	0.31	3.23	0.01
193903	-11.91	-5.41	-8.31	-0.01
193904	-0.23	1.97	0.29	0.00
193905	6.86	3.87	-0.08	0.01
193906	-5.29	-1.68	-5.54	0.01
193907	10.18	4.62	0.55	0.00
193908	-6.60	-4.50	-2.99	-0.01
193909	15.95	18.77	23.27	0.01
193910	-0.38	0.26	-4.66	0.00
193911	-3.68	-4.43	-6.54	0.00
193912	3.03	0.67	-3.84	0.00
194001	-2.40	0.21	-0.75	0.00
194002	1.37	2.32	-0.44	0.00
194003	1.89	1.63	-1.12	0.00
194004	0.12	3.57	-0.28	0.00
194005	-22.01	-6.21	-4.04	-0.02
194006	6.67	-2.34	4.80	0.00
194007	3.21	0.87	-0.57	0.01
194008	2.41	0.19	0.47	-0.01
194009	2.30	3.39	-1.70	0.00
194010	2.97	-0.17	5.43	0.00
194011	-1.63	2.06	0.49	0.00
194012	0.68	-2.41	-1.31	0.00
194101	-4.04	0.85	3.22	-0.01
194102	-1.47	-1.21	1.05	-0.01
194103	0.95	0.12	2.95	0.01
194104	-5.30	-1.69	3.43	-0.01
194105	1.39	-0.83	0.52	0.00
194106	5.87	1.47	0.66	0.00
194107	5.92	5.74	7.25	0.03
194108	-0.06	-0.16	-1.20	0.01
194109	-0.76	-1.43	0.28	0.01
194110	-5.18	-2.10	1.31	0.00
194111	-1.94	-1.05	-0.64	0.00
194112	-4.68	-3.33	-5.04	0.01
194201	0.70	7.51	9.93	0.02
194202	-2.42	1.69	-1.06	0.01
194203	-6.58	2.29	-1.22	0.01
194204	-4.32	-1.03	1.87	0.01
194205	6.07	-3.03	-2.97	0.03
194206	2.53	-0.90	0.25	0.02
194207	3.46	-0.33	2.56	0.03
194208	1.84	-0.39	1.94	0.03
194209	2.60	0.14	3.40	0.03
194210	6.74	1.39	6.68	0.03
194211	0.22	-0.77	-5.35	0.03

---

---

194212	5.01	-2.09	0.78	0.03
194301	7.30	8.34	7.66	0.03
194302	5.96	4.47	6.41	0.03
194303	6.18	4.66	5.52	0.03
194304	0.66	1.92	6.36	0.03
194305	5.69	4.20	3.13	0.03
194306	1.66	-0.63	-0.95	0.03
194307	-4.65	-2.68	-2.47	0.03
194308	1.27	-0.80	-0.88	0.03
194309	2.42	1.31	1.35	0.03
194310	-1.25	0.90	1.33	0.03
194311	-5.88	-1.58	-4.87	0.03
194312	6.33	3.29	3.13	0.03
194401	1.78	2.51	2.75	0.03
194402	0.34	-0.28	0.74	0.03
194403	2.42	1.86	3.05	0.02
194404	-1.66	-1.41	-0.97	0.03
194405	5.07	1.49	1.31	0.03
194406	5.59	4.12	2.54	0.03
194407	-1.55	0.73	-0.62	0.03
194408	1.56	2.11	-1.30	0.03
194409	0.00	0.58	-0.97	0.02
194410	0.22	-0.24	-0.24	0.03
194411	1.62	0.46	1.74	0.03
194412	4.10	1.61	6.63	0.02
194501	1.89	2.85	0.62	0.03
194502	6.41	1.54	4.33	0.02
194503	-3.89	-1.80	-1.58	0.02
194504	7.72	0.22	3.98	0.03
194505	1.83	1.31	1.16	0.03
194506	0.32	2.95	4.42	0.02
194507	-2.24	-1.68	-2.52	0.03
194508	6.08	1.49	-4.32	0.03
194509	4.78	1.94	0.26	0.03
194510	3.87	2.46	1.68	0.03
194511	5.43	3.82	4.43	0.02
194512	1.15	2.66	-2.09	0.03
194601	6.30	4.02	1.89	0.03
194602	-5.82	-0.77	-1.37	0.03
194603	5.84	0.30	-0.80	0.03
194604	4.26	2.21	-0.22	0.03
194605	3.96	1.47	1.74	0.03
194606	-3.94	-1.53	0.01	0.03
194607	-2.58	-2.11	0.03	0.03
194608	-6.42	-1.83	0.17	0.03
194609	-10.05	-4.20	-2.28	0.03
194610	-1.45	-0.26	3.50	0.03
194611	0.09	-0.46	1.24	0.03
194612	5.06	0.05	-1.15	0.03
194701	1.48	1.69	-0.66	0.03
194702	-1.19	0.68	-0.25	0.03
194703	-1.74	-1.68	0.47	0.03
194704	-4.82	-4.09	0.75	0.03
194705	-1.03	-3.30	0.15	0.03

---

---

194706	5.34	-0.30	-0.37	0.03
194707	4.09	1.51	2.92	0.03
194708	-1.78	0.39	0.13	0.03
194709	-0.50	1.56	1.47	0.06
194710	2.40	0.57	0.08	0.06
194711	-1.89	-1.77	0.99	0.06
194712	2.94	-2.38	3.91	0.08
194801	-3.80	2.40	1.15	0.07
194802	-4.41	-1.73	0.01	0.07
194803	8.19	0.15	4.54	0.09
194804	3.70	-1.66	4.07	0.08
194805	7.38	0.99	-1.16	0.08
194806	-0.11	-1.77	2.64	0.09
194807	-5.12	-0.34	0.11	0.08
194808	0.30	-1.10	0.24	0.09
194809	-2.99	-1.28	-1.80	0.04
194810	5.97	-1.50	0.63	0.04
194811	-9.10	-0.62	-4.50	0.04
194812	3.18	-2.78	-1.80	0.04
194901	0.20	1.64	1.35	0.10
194902	-3.04	-1.81	-0.82	0.09
194903	4.05	2.32	1.52	0.10
194904	-1.88	-0.97	-1.06	0.09
194905	-2.84	-0.84	-2.55	0.10
194906	0.21	-0.91	-1.78	0.10
194907	5.49	0.60	0.43	0.09
194908	2.57	0.20	-0.41	0.09
194909	3.09	1.00	0.18	0.09
194910	3.03	1.05	-0.41	0.09
194911	1.80	-0.96	-0.88	0.08
194912	5.12	2.09	1.66	0.09
195001	1.64	3.36	0.19	0.09
195002	1.37	0.11	-0.72	0.09
195003	1.12	-1.37	-2.75	0.10
195004	3.94	1.90	1.38	0.09
195005	4.27	-2.06	0.44	0.10
195006	-5.89	-2.38	-0.75	0.10
195007	1.51	0.55	13.47	0.10
195008	4.97	0.80	-1.45	0.10
195009	4.78	0.52	-0.93	0.10
195010	-0.23	-0.52	1.42	0.12
195011	2.74	-0.85	3.26	0.11
195012	5.66	1.50	7.22	0.11
195101	5.69	1.76	3.79	0.13
195102	1.34	0.14	-2.92	0.10
195103	-2.20	-0.67	-4.17	0.11
195104	4.83	-1.46	3.29	0.13
195105	-2.38	0.05	-1.38	0.12
195106	-2.65	-1.97	-3.99	0.12
195107	6.99	-1.87	1.95	0.13
195108	4.38	0.84	0.21	0.13
195109	0.80	2.00	0.72	0.12
195110	-2.40	-0.41	0.11	0.16
195111	0.48	-0.31	0.38	0.11

---

---

195112	3.37	-2.05	-1.91	0.12
195201	1.54	-0.74	1.87	0.15
195202	-2.62	0.67	-0.26	0.12
195203	4.45	-2.98	2.26	0.11
195204	-5.01	0.39	0.26	0.12
195205	3.16	-1.05	0.15	0.13
195206	3.78	-1.60	1.19	0.15
195207	1.00	-0.32	-0.35	0.15
195208	-0.81	1.16	-0.12	0.15
195209	-2.06	1.23	-1.64	0.16
195210	-0.69	-1.10	-0.30	0.14
195211	5.78	-0.63	1.08	0.10
195212	2.96	-1.41	0.18	0.16
195301	-0.29	3.50	1.25	0.16
195302	-0.31	2.20	-0.10	0.14
195303	-1.52	-0.01	-1.01	0.18
195304	-2.91	0.31	1.48	0.16
195305	0.54	-0.08	0.14	0.17
195306	-1.85	-1.75	-0.49	0.18
195307	2.38	-1.00	-0.37	0.15
195308	-4.58	0.42	-3.62	0.17
195309	0.15	-0.77	-2.59	0.16
195310	4.58	-1.37	0.08	0.13
195311	2.75	-1.22	-0.35	0.08
195312	-0.05	-0.75	-2.96	0.13
195401	5.14	0.47	3.48	0.11
195402	1.68	-0.19	-0.24	0.07
195403	3.65	-0.50	-1.53	0.08
195404	4.20	-3.45	-0.50	0.09
195405	3.11	0.38	2.54	0.05
195406	1.09	0.40	0.01	0.06
195407	4.99	0.93	4.29	0.05
195408	-2.30	2.73	-1.68	0.05
195409	6.34	-2.44	0.58	0.09
195410	-1.69	0.51	0.72	0.07
195411	9.47	-2.46	4.01	0.06
195412	5.45	2.12	5.68	0.08
195501	0.62	0.32	2.04	0.08
195502	3.04	1.45	0.76	0.09
195503	-0.21	-0.67	1.97	0.10
195504	3.13	-1.75	0.87	0.10
195505	1.05	-0.24	-0.79	0.14
195506	6.48	-4.54	1.72	0.10
195507	1.93	-1.12	0.33	0.10
195508	0.27	-0.44	0.71	0.16
195509	-0.36	0.30	-1.01	0.16
195510	-2.75	1.50	-0.11	0.18
195511	6.99	-2.15	0.29	0.17
195512	1.46	2.15	-2.36	0.18
195601	-3.02	0.35	0.96	0.22
195602	3.76	-0.95	-0.40	0.19
195603	6.67	-1.96	-0.79	0.15
195604	0.32	-0.01	-0.17	0.19
195605	-5.15	1.38	-1.20	0.23

---

---

195606	3.52	-1.44	-1.13	0.20
195607	4.86	-1.82	0.20	0.22
195608	-3.20	2.25	-1.18	0.17
195609	-5.15	1.66	1.77	0.18
195610	0.47	-0.16	-0.06	0.25
195611	0.26	-0.20	1.79	0.20
195612	3.25	-0.16	-1.95	0.24
195701	-3.48	3.78	2.22	0.27
195702	-2.11	-0.73	-0.66	0.24
195703	2.18	0.24	-0.36	0.23
195704	4.26	-1.86	-1.21	0.25
195705	3.40	-1.06	-2.20	0.26
195706	-0.75	0.63	-0.21	0.24
195707	0.59	-0.53	0.00	0.30
195708	-5.25	-0.01	-0.33	0.25
195709	-6.02	0.07	0.90	0.26
195710	-4.40	-2.56	-1.80	0.29
195711	2.27	0.34	-2.79	0.28
195712	-3.98	-0.92	-1.70	0.24
195801	4.71	4.34	4.21	0.28
195802	-1.53	0.72	0.23	0.12
195803	3.29	0.79	-1.22	0.09
195804	3.00	-0.66	1.63	0.08
195805	2.35	2.14	-0.20	0.11
195806	2.92	-0.24	0.50	0.03
195807	4.42	0.43	3.16	0.07
195808	1.87	1.19	0.32	0.04
195809	4.67	0.09	3.03	0.19
195810	2.57	1.17	-1.29	0.18
195811	2.94	2.05	-1.32	0.11
195812	5.07	-2.09	0.02	0.22
195901	0.71	3.01	2.94	0.21
195902	0.94	1.52	1.05	0.19
195903	0.23	1.46	-0.26	0.22
195904	3.59	-0.58	-1.25	0.20
195905	1.73	-2.18	1.87	0.22
195906	-0.19	0.66	1.40	0.25
195907	3.17	-0.30	0.20	0.25
195908	-1.43	-0.78	0.39	0.19
195909	-4.80	-0.10	0.50	0.31
195910	1.27	1.43	-2.06	0.30
195911	1.59	1.30	-3.29	0.26
195912	2.46	-0.56	-0.10	0.34
196001	-6.97	2.04	2.69	0.33
196002	1.13	0.56	-1.98	0.29
196003	-1.63	-0.43	-2.91	0.35
196004	-1.72	0.43	-2.39	0.19
196005	3.13	1.34	-3.79	0.27
196006	2.06	-0.16	-0.33	0.24
196007	-2.40	-0.50	2.14	0.13
196008	3.06	0.90	-0.39	0.17
196009	-6.02	-1.12	1.48	0.16
196010	-0.70	-3.92	2.59	0.22
196011	4.72	0.38	-2.49	0.13

---



---

196012	4.69	-1.51	-0.66	0.16
196101	6.20	0.84	3.75	0.19
196102	3.56	3.98	-0.86	0.14
196103	2.86	3.24	-0.70	0.20
196104	0.40	0.13	1.89	0.17
196105	2.40	1.97	0.52	0.18
196106	-3.05	-2.47	-0.29	0.20
196107	2.81	-1.90	-0.15	0.18
196108	2.55	-1.84	-0.24	0.14
196109	-2.17	-1.12	-0.49	0.17
196110	2.55	-2.02	0.46	0.19
196111	4.39	1.07	-0.92	0.15
196112	-0.12	-1.13	2.21	0.19
196201	-3.86	1.88	5.03	0.24
196202	1.75	-1.18	0.88	0.20
196203	-0.67	0.23	-0.98	0.20
196204	-6.57	-0.97	0.41	0.22
196205	-8.71	-3.00	2.30	0.24
196206	-8.46	-0.74	2.88	0.20
196207	6.28	1.58	-3.64	0.27
196208	2.11	1.29	-1.19	0.23
196209	-5.23	-2.56	1.46	0.21
196210	-0.04	-3.99	1.23	0.26
196211	10.81	2.66	0.99	0.20
196212	0.96	-3.80	0.31	0.23
196301	4.93	3.11	2.29	0.25
196302	-2.42	0.38	2.26	0.23
196303	3.06	-2.55	2.14	0.23
196304	4.49	-1.33	1.10	0.25
196305	1.77	1.09	2.77	0.24
196306	-2.03	-0.26	0.79	0.23
196307	-0.44	-0.50	-0.95	0.27
196308	5.02	-1.03	1.78	0.25
196309	-1.46	-0.34	0.21	0.27
196310	2.48	-0.55	-0.03	0.29
196311	-0.82	-1.11	1.65	0.27
196312	1.88	-1.99	0.01	0.29
196401	2.28	-0.17	1.54	0.30
196402	1.46	0.08	2.84	0.26
196403	1.45	0.95	3.43	0.31
196404	0.17	-1.37	-0.52	0.29
196405	1.48	-0.89	1.91	0.26
196406	1.21	-0.30	0.75	0.30
196407	1.71	0.23	0.69	0.30
196408	-1.41	0.09	0.12	0.28
196409	2.77	-0.51	1.65	0.28
196410	0.60	0.45	1.12	0.29
196411	0.02	0.61	-1.96	0.29
196412	0.06	-0.24	-2.59	0.31
196501	3.58	2.67	0.18	0.28
196502	0.39	3.48	0.21	0.30
196503	-1.33	1.77	1.08	0.36
196504	3.06	1.19	0.70	0.31
196505	-0.75	0.03	-1.62	0.31

---

---

196506	-5.54	-4.35	0.57	0.35
196507	1.37	0.84	2.24	0.31
196508	2.76	2.85	-1.06	0.33
196509	2.89	0.60	-0.09	0.31
196510	2.62	2.43	1.58	0.31
196511	-0.04	4.66	0.31	0.35
196512	1.02	2.08	1.98	0.33
196601	0.83	3.86	3.53	0.38
196602	-1.21	4.44	0.43	0.35
196603	-2.47	0.97	-2.06	0.38
196604	2.14	3.44	-0.42	0.34
196605	-5.66	-4.66	-1.63	0.41
196606	-1.41	1.05	0.59	0.38
196607	-1.64	-0.33	0.84	0.35
196608	-7.95	-3.31	0.56	0.41
196609	-1.10	-1.10	0.53	0.40
196610	3.78	-6.62	2.91	0.45
196611	1.35	4.37	-4.65	0.40
196612	0.22	1.87	-1.33	0.40
196701	8.12	8.47	1.89	0.43
196702	0.73	3.38	-2.27	0.36
196703	3.95	1.76	0.15	0.39
196704	3.84	0.60	-2.61	0.32
196705	-4.26	2.00	0.81	0.33
196706	2.42	6.01	0.88	0.27
196707	4.60	3.09	2.69	0.32
196708	-0.94	0.48	1.48	0.31
196709	3.11	3.08	-2.46	0.32
196710	-3.13	1.44	-3.39	0.39
196711	0.43	0.19	-1.72	0.36
196712	3.04	5.73	-0.44	0.33
196801	-4.03	3.90	4.79	0.40
196802	-3.75	-2.93	1.21	0.39
196803	0.13	-1.27	-0.52	0.38
196804	8.98	5.72	-1.06	0.43
196805	2.25	6.42	0.85	0.45
196806	0.72	-0.17	0.73	0.43
196807	-2.68	-1.32	5.45	0.48
196808	1.38	2.35	0.97	0.42
196809	4.02	2.81	0.24	0.43
196810	0.46	-0.48	2.96	0.44
196811	5.43	2.38	-0.91	0.42
196812	-3.82	3.44	0.06	0.43
196901	-1.20	-0.79	1.57	0.53
196902	-5.82	-3.90	0.93	0.46
196903	2.59	-0.26	-0.45	0.46
196904	1.52	-0.84	0.04	0.53
196905	0.02	-0.28	0.72	0.48
196906	-7.25	-5.36	-1.13	0.51
196907	-7.05	-3.21	1.38	0.53
196908	4.65	0.90	-3.80	0.50
196909	-2.88	1.18	-3.20	0.62
196910	4.96	3.76	-3.11	0.60
196911	-3.74	-2.54	-1.11	0.52

---

---

196912	-2.61	-3.67	-3.05	0.64
197001	-7.93	2.90	3.01	0.60
197002	5.05	-2.37	4.03	0.62
197003	-1.04	-2.35	4.27	0.57
197004	-11.03	-6.11	6.34	0.50
197005	-6.96	-4.46	3.57	0.53
197006	-5.69	-2.16	0.79	0.58
197007	6.90	-0.56	1.01	0.52
197008	4.47	1.52	1.04	0.53
197009	4.21	8.61	-5.54	0.54
197010	-2.28	-4.20	0.30	0.46
197011	4.58	-4.09	1.68	0.46
197012	5.65	2.97	1.00	0.42
197101	4.82	7.44	1.34	0.38
197102	1.36	1.90	-1.34	0.33
197103	4.18	2.58	-3.99	0.30
197104	3.05	-0.52	0.75	0.28
197105	-3.93	-1.12	-1.38	0.29
197106	-0.06	-1.42	-1.99	0.37
197107	-4.43	-1.50	0.17	0.40
197108	3.78	-0.21	2.69	0.47
197109	-0.87	0.41	-2.96	0.37
197110	-4.44	-1.77	-0.44	0.37
197111	-0.50	-2.83	-1.72	0.37
197112	8.76	3.32	-0.29	0.37
197201	2.55	6.13	2.02	0.29
197202	2.88	1.37	-2.78	0.25
197203	0.60	-0.26	-1.71	0.27
197204	0.26	0.02	0.22	0.29
197205	1.34	-2.77	-2.68	0.30
197206	-2.38	0.33	-2.53	0.29
197207	-0.74	-2.90	0.83	0.31
197208	3.31	-4.00	4.60	0.29
197209	-1.11	-2.65	0.43	0.34
197210	0.47	-2.66	1.26	0.40
197211	4.61	-1.12	4.87	0.37
197212	0.75	-1.83	-2.32	0.37
197301	-3.19	-3.45	2.69	0.44
197302	-4.85	-3.99	1.74	0.41
197303	-1.25	-2.84	2.73	0.46
197304	-5.70	-3.97	5.61	0.52
197305	-2.96	-6.02	0.20	0.51
197306	-1.37	-2.93	1.39	0.51
197307	5.06	7.91	-5.22	0.64
197308	-3.66	-2.01	1.23	0.70
197309	4.71	2.91	2.08	0.68
197310	-0.69	-0.13	1.78	0.65
197311	-12.63	-7.72	4.00	0.56
197312	0.50	-5.27	4.29	0.64
197401	-0.19	9.83	5.79	0.63
197402	-0.34	0.01	2.55	0.58
197403	-2.90	2.45	-0.06	0.56
197404	-5.35	-0.69	1.05	0.75
197405	-4.95	-3.03	-2.07	0.75

---

---

197406	-2.89	-0.16	0.82	0.60
197407	-7.79	0.87	5.23	0.70
197408	-9.38	-0.68	2.55	0.60
197409	-11.78	0.31	5.45	0.81
197410	16.05	-3.48	-9.81	0.51
197411	-4.64	-1.11	-0.18	0.54
197412	-3.40	-4.85	0.10	0.70
197501	13.58	10.83	8.35	0.58
197502	5.41	0.18	-4.54	0.43
197503	2.61	3.73	2.49	0.41
197504	4.21	-0.48	-1.20	0.44
197505	5.07	3.86	-4.06	0.44
197506	4.74	0.77	1.26	0.41
197507	-6.52	2.64	1.68	0.48
197508	-2.84	-3.18	-0.87	0.48
197509	-4.33	-0.11	0.38	0.53
197510	5.03	-4.05	0.33	0.56
197511	2.71	-1.21	2.02	0.41
197512	-1.58	-0.77	1.77	0.48
197601	12.13	4.79	8.59	0.47
197602	0.39	6.98	5.87	0.34
197603	2.28	-1.14	-0.09	0.40
197604	-1.46	-0.07	0.01	0.42
197605	-1.31	-1.23	-1.31	0.37
197606	4.02	-1.38	0.72	0.43
197607	-1.09	0.32	1.71	0.47
197608	-0.56	-2.01	0.78	0.42
197609	2.01	0.06	-0.34	0.44
197610	-2.45	0.22	-0.14	0.41
197611	0.14	2.31	1.53	0.40
197612	5.76	2.98	2.17	0.40
197701	-3.99	4.77	4.25	0.36
197702	-1.93	1.07	0.49	0.35
197703	-1.30	0.98	1.03	0.38
197704	0.12	-0.10	3.39	0.38
197705	-1.45	1.21	0.82	0.37
197706	4.74	2.16	-0.62	0.40
197707	-1.70	2.12	-0.60	0.42
197708	-1.78	1.50	-2.80	0.44
197709	-0.27	1.44	-0.50	0.43
197710	-4.42	1.25	1.71	0.49
197711	4.04	3.72	0.38	0.50
197712	0.33	1.35	-0.34	0.49
197801	-6.01	2.21	3.28	0.49
197802	-1.39	3.55	0.82	0.46
197803	2.87	3.42	1.28	0.53
197804	7.74	0.40	-3.46	0.54
197805	1.81	4.60	-0.61	0.51
197806	-1.62	1.73	0.59	0.54
197807	5.11	0.28	-1.08	0.56
197808	3.69	5.08	-0.50	0.55
197809	-1.31	-0.40	1.90	0.62
197810	-11.78	-9.91	1.41	0.68
197811	2.68	3.05	-2.25	0.70

---

---

197812	0.99	1.27	-2.24	0.78
197901	4.18	3.69	2.28	0.77
197902	-3.41	0.47	1.17	0.73
197903	5.75	3.19	-0.67	0.81
197904	0.05	2.18	1.06	0.80
197905	-2.18	0.34	1.62	0.82
197906	3.88	1.17	1.42	0.81
197907	0.73	1.31	1.75	0.77
197908	5.70	2.07	-1.53	0.77
197909	-0.69	-0.29	-0.91	0.83
197910	-8.14	-3.33	-1.87	0.87
197911	5.37	2.75	-3.34	0.99
197912	1.87	4.24	-2.04	0.95
198001	5.76	1.68	1.78	0.80
198002	-0.79	-1.79	0.58	0.89
198003	-13.23	-6.64	-1.02	1.21
198004	3.97	0.99	1.09	1.26
198005	5.20	2.13	0.38	0.81
198006	3.16	1.69	-0.91	0.61
198007	6.41	4.21	-6.27	0.53
198008	1.72	3.91	-2.69	0.64
198009	2.20	0.87	-4.71	0.75
198010	1.06	2.45	-2.75	0.95
198011	9.54	-3.46	-8.52	0.96
198012	-4.75	-0.23	2.67	1.31
198101	-5.05	3.02	6.88	1.04
198102	0.48	-0.29	1.00	1.07
198103	3.41	3.61	0.74	1.21
198104	-2.21	4.40	2.28	1.08
198105	0.21	2.05	-0.45	1.15
198106	-2.37	-0.86	5.13	1.35
198107	-1.55	-2.26	-0.53	1.24
198108	-6.91	-1.93	4.78	1.28
198109	-7.62	-2.64	5.19	1.24
198110	4.81	2.24	-4.36	1.21
198111	3.51	-0.93	1.86	1.07
198112	-3.68	1.20	0.72	0.87
198201	-3.42	-1.24	3.07	0.80
198202	-6.03	0.50	6.03	0.92
198203	-1.99	-0.22	3.86	0.98
198204	3.20	1.46	-2.72	1.13
198205	-3.88	0.50	1.80	1.06
198206	-3.35	-0.39	1.57	0.96
198207	-3.10	0.89	0.23	1.05
198208	11.14	-4.13	1.17	0.76
198209	1.17	2.94	0.34	0.51
198210	11.27	2.34	-3.72	0.59
198211	4.56	4.77	-1.93	0.63
198212	0.78	-0.17	0.04	0.67
198301	3.50	2.66	-0.87	0.69
198302	2.40	3.26	0.70	0.62
198303	2.84	1.76	2.08	0.63
198304	6.71	0.53	0.58	0.71
198305	0.63	6.12	-1.40	0.69

---

---

198306	3.11	0.92	-3.85	0.67
198307	-3.90	1.51	5.65	0.74
198308	-0.41	-4.30	5.46	0.76
198309	0.85	0.55	1.05	0.76
198310	-3.56	-3.61	4.94	0.76
198311	2.26	2.03	-0.63	0.70
198312	-1.78	-0.29	1.64	0.73
198401	-2.06	-0.40	7.56	0.76
198402	-4.62	-1.72	3.39	0.71
198403	0.61	0.14	0.52	0.73
198404	-0.56	-1.20	1.28	0.81
198405	-6.01	0.08	0.20	0.78
198406	1.59	-0.27	-2.59	0.75
198407	-2.88	-2.28	0.28	0.82
198408	10.44	-0.22	-1.75	0.83
198409	-0.82	0.24	5.33	0.86
198410	-1.01	-1.17	0.46	1.00
198411	-1.80	-0.63	4.01	0.73
198412	1.73	-0.57	-0.11	0.64
198501	7.92	3.27	-5.35	0.65
198502	1.11	0.79	-0.23	0.58
198503	-0.79	-1.12	3.98	0.62
198504	-0.94	0.18	3.72	0.72
198505	4.92	-2.28	-0.91	0.66
198506	1.16	0.49	0.42	0.55
198507	-0.65	2.85	-1.63	0.62
198508	-1.03	-0.37	2.20	0.55
198509	-4.58	-1.61	1.25	0.60
198510	3.79	-1.58	0.72	0.65
198511	6.31	0.24	-2.87	0.61
198512	3.66	-0.46	-1.52	0.65
198601	0.42	1.21	0.53	0.56
198602	6.72	-0.59	-0.84	0.53
198603	4.79	-0.48	-0.44	0.60
198604	-1.31	2.82	-2.91	0.52
198605	4.59	-1.30	-0.11	0.49
198606	0.90	-0.89	1.38	0.52
198607	-6.49	-3.43	4.71	0.52
198608	6.16	-4.17	3.53	0.46
198609	-8.35	2.30	3.22	0.45
198610	4.47	-2.59	-1.48	0.46
198611	1.12	-1.96	-0.16	0.39
198612	-3.13	0.07	0.36	0.49
198701	12.43	-1.73	-3.15	0.42
198702	4.36	3.45	-5.95	0.43
198703	1.90	0.44	1.65	0.47
198704	-2.14	-1.69	-0.29	0.44
198705	0.13	-0.56	0.17	0.38
198706	3.89	-2.10	1.13	0.48
198707	3.96	-0.68	0.67	0.46
198708	3.24	-0.77	-0.94	0.47
198709	-2.53	0.62	0.28	0.45
198710	-23.14	-8.41	4.17	0.60
198711	-7.58	2.61	3.18	0.35

---

---

198712	6.64	0.18	-4.48	0.39
198801	4.20	-0.66	5.22	0.29
198802	4.71	3.34	-1.66	0.46
198803	-2.10	6.15	0.77	0.44
198804	0.64	0.96	1.73	0.46
198805	-0.47	-2.62	2.31	0.51
198806	4.66	2.12	-1.14	0.49
198807	-1.24	-0.19	2.28	0.51
198808	-3.39	0.08	2.09	0.59
198809	3.10	-1.30	-0.74	0.62
198810	1.15	-2.94	1.66	0.61
198811	-2.21	-1.74	1.26	0.57
198812	1.48	1.93	-1.55	0.63
198901	6.06	-2.15	0.52	0.55
198902	-2.25	2.74	0.87	0.61
198903	1.48	0.70	0.47	0.67
198904	4.15	-0.53	-1.38	0.67
198905	3.14	-0.03	-0.84	0.79
198906	-1.20	-1.01	2.18	0.71
198907	7.01	-3.98	-2.80	0.70
198908	1.47	0.50	0.67	0.74
198909	-0.80	0.34	-1.30	0.65
198910	-3.61	-3.23	-0.98	0.68
198911	1.09	-1.26	-1.12	0.69
198912	1.22	-2.35	0.29	0.61
199001	-7.58	-1.25	0.87	0.57
199002	0.92	1.15	0.66	0.57
199003	1.77	1.50	-2.86	0.64
199004	-3.52	-0.44	-2.48	0.69
199005	8.21	-2.48	-3.63	0.68
199006	-1.05	1.37	-2.11	0.63
199007	-1.62	-3.18	-0.05	0.68
199008	-9.85	-3.57	1.49	0.66
199009	-5.98	-3.63	0.67	0.60
199010	-1.93	-5.56	0.26	0.68
199011	6.00	0.32	-2.96	0.57
199012	2.35	0.78	-1.49	0.60
199101	4.39	3.85	-1.73	0.52
199102	7.10	3.90	-0.58	0.48
199103	2.45	3.92	-1.19	0.44
199104	-0.20	0.53	1.43	0.53
199105	3.60	-0.31	-0.56	0.47
199106	-4.82	0.06	1.23	0.42
199107	4.19	-0.97	-1.29	0.49
199108	2.22	1.59	-0.80	0.46
199109	-1.56	1.68	-1.06	0.46
199110	1.36	0.85	-0.39	0.42
199111	-4.12	-0.55	-1.77	0.39
199112	10.30	-2.26	-4.02	0.38
199201	-0.46	8.43	4.63	0.34
199202	1.06	0.87	6.37	0.28
199203	-2.71	-1.08	3.72	0.34
199204	1.02	-6.08	4.33	0.32
199205	0.36	0.42	1.17	0.28

---

---

199206	-2.25	-3.07	3.32	0.32
199207	3.68	-0.39	-0.48	0.31
199208	-2.34	-0.11	-1.09	0.26
199209	0.98	0.58	-0.20	0.26
199210	0.87	2.07	-2.05	0.23
199211	3.79	3.63	-1.53	0.23
199212	1.50	1.63	2.53	0.28
199301	1.03	2.03	5.83	0.23
199302	0.32	-3.36	6.50	0.22
199303	2.26	0.23	1.23	0.25
199304	-2.78	-0.64	2.65	0.24
199305	2.74	1.97	-3.45	0.22
199306	0.29	-0.31	2.61	0.25
199307	-0.32	0.95	3.24	0.24
199308	3.70	0.22	-0.40	0.25
199309	-0.20	3.08	-0.45	0.26
199310	1.59	1.45	-1.59	0.22
199311	-2.01	-1.41	-0.31	0.25
199312	1.72	1.24	0.60	0.23
199401	2.90	0.11	2.15	0.25
199402	-2.63	2.72	-1.37	0.21
199403	-4.85	-0.90	1.29	0.27
199404	0.68	-0.88	1.66	0.27
199405	0.62	-2.05	0.12	0.32
199406	-3.10	-0.49	1.71	0.31
199407	2.78	-1.78	0.98	0.28
199408	3.89	1.45	-3.47	0.37
199409	-2.21	2.70	-1.83	0.37
199410	1.07	-2.21	-2.35	0.38
199411	-4.09	-0.16	-0.07	0.37
199412	0.82	0.04	0.22	0.44
199501	1.62	-2.95	1.67	0.42
199502	3.56	-0.33	0.37	0.40
199503	2.24	-0.35	-2.04	0.46
199504	2.06	-0.41	1.73	0.44
199505	2.86	-2.24	1.97	0.54
199506	2.65	3.07	-2.99	0.47
199507	3.63	2.22	-2.15	0.45
199508	0.46	1.84	1.89	0.47
199509	3.21	-2.02	-0.92	0.43
199510	-1.60	-3.99	-0.08	0.47
199511	3.85	-0.81	0.34	0.42
199512	1.03	0.42	1.41	0.49
199601	2.38	-2.44	0.36	0.43
199602	1.24	2.06	-2.32	0.39
199603	0.70	1.31	1.23	0.39
199604	2.09	4.89	-3.98	0.46
199605	2.26	3.22	-1.38	0.42
199606	-1.23	-3.68	1.93	0.40
199607	-5.83	-3.57	4.39	0.45
199608	2.84	2.31	-0.59	0.41
199609	4.86	-0.82	-3.83	0.44
199610	0.94	-4.11	4.81	0.42
199611	6.14	-3.60	0.21	0.41

---



---

199612	-1.60	3.15	0.94	0.46
199701	4.89	-1.51	-2.30	0.45
199702	-0.50	-2.57	4.72	0.39
199703	-4.91	-0.30	3.88	0.43
199704	3.80	-5.14	-1.00	0.43
199705	6.67	4.79	-4.35	0.49
199706	4.04	1.52	0.70	0.37
199707	7.22	-2.42	-0.38	0.43
199708	-4.04	7.48	1.03	0.41
199709	5.40	2.68	-0.28	0.44
199710	-3.87	-0.81	2.31	0.42
199711	2.66	-5.05	1.03	0.39
199712	1.30	-2.34	3.82	0.48
199801	0.02	-1.01	-1.82	0.43
199802	6.93	0.21	-0.72	0.39
199803	4.74	-1.18	1.67	0.39
199804	0.66	0.46	0.31	0.43
199805	-2.98	-3.58	4.27	0.40
199806	2.79	-3.28	-1.84	0.41
199807	-2.73	-4.88	-1.08	0.40
199808	-16.20	-5.70	5.14	0.43
199809	5.92	-0.16	-3.96	0.46
199810	7.12	-3.19	-2.71	0.32
199811	5.89	1.12	-3.29	0.31
199812	5.93	-0.27	-4.80	0.38
199901	3.48	0.67	-5.61	0.35
199902	-4.16	-5.68	1.71	0.35
199903	3.36	-3.89	-2.88	0.43
199904	4.53	3.37	2.45	0.37
199905	-2.41	3.69	2.69	0.34
199906	4.70	3.37	-4.30	0.40
199907	-3.44	2.23	0.54	0.38
199908	-1.39	-1.24	-0.99	0.39
199909	-2.68	3.25	-3.08	0.39
199910	5.81	-6.78	-3.26	0.39
199911	3.32	7.66	-7.99	0.36
199912	7.93	6.82	-9.19	0.44
200001	-4.37	4.39	0.23	0.41
200002	2.75	22.06	-12.87	0.43
200003	4.88	-16.62	7.91	0.47
200004	-6.41	-7.64	9.26	0.46
200005	-4.40	-4.66	3.80	0.50
200006	4.76	13.74	-9.92	0.40
200007	-2.19	-2.79	8.45	0.48
200008	7.08	-0.90	-1.29	0.50
200009	-5.62	-1.84	6.87	0.51
200010	-3.02	-3.63	4.80	0.56
200011	-10.76	-3.07	12.39	0.51
200012	1.53	1.59	6.13	0.50
200101	3.41	6.98	-5.67	0.54
200102	-10.32	-1.14	13.88	0.39
200103	-7.47	0.53	6.37	0.44
200104	8.00	0.28	-4.39	0.39
200105	0.74	3.01	2.82	0.32

---

---

200106	-2.03	6.39	-2.11	0.28
200107	-2.13	-4.18	5.61	0.30
200108	-6.22	2.18	3.32	0.31
200109	-9.43	-6.53	1.63	0.28
200110	2.58	6.83	-6.99	0.22
200111	7.70	0.39	0.82	0.17
200112	1.63	5.12	0.39	0.15
200201	-1.74	1.15	3.46	0.14
200202	-2.30	-1.67	3.92	0.13
200203	4.34	4.34	1.14	0.13
200204	-5.12	5.84	4.21	0.15
200205	-1.19	-3.68	2.46	0.14
200206	-7.16	3.55	1.47	0.13
200207	-8.26	-5.16	-3.65	0.15
200208	0.66	-2.19	2.17	0.14
200209	-10.14	2.69	1.16	0.14
200210	7.35	-3.01	-6.51	0.14
200211	6.01	3.18	-1.54	0.12
200212	-5.44	-0.52	3.86	0.11
200301	-2.44	1.40	-0.90	0.10
200302	-1.63	-0.27	-1.46	0.09
200303	0.93	0.83	-1.73	0.10
200304	8.18	1.11	-0.02	0.10
200305	6.26	4.69	0.16	0.09
200306	1.53	1.48	0.66	0.10
200307	2.24	5.62	-2.08	0.07
200308	2.43	2.65	1.79	0.07
200309	-0.99	0.57	0.92	0.08
200310	5.96	2.87	1.84	0.07
200311	1.59	2.20	1.46	0.07
200312	4.47	-2.78	2.64	0.08
200401	2.23	2.61	1.66	0.07
200402	1.49	-1.15	0.34	0.06
200403	-1.16	1.87	-0.01	0.09
200404	-2.50	-2.56	-1.70	0.08
200405	1.35	-0.15	-0.26	0.06
200406	2.08	2.28	1.68	0.08
200407	-3.87	-3.82	4.39	0.10
200408	0.16	-1.54	1.12	0.11
200409	1.94	2.85	0.34	0.11
200410	1.67	0.42	-0.89	0.11
200411	4.67	4.11	1.91	0.15
200412	3.36	0.19	-0.36	0.16
200501	-2.82	-1.62	2.49	0.16
200502	2.11	-0.75	2.78	0.16
200503	-1.90	-1.30	1.66	0.21
200504	-2.73	-3.96	-0.48	0.21
200505	3.56	2.95	-1.16	0.24
200506	0.92	2.57	2.75	0.23
200507	4.09	2.76	-0.46	0.24
200508	-0.89	-0.89	1.42	0.30
200509	0.77	-0.63	1.17	0.29
200510	-2.35	-1.04	-0.70	0.27
200511	3.73	1.00	-1.81	0.31

---

---

200512	0.03	-0.48	0.48	0.32
200601	3.65	5.39	1.14	0.35
200602	-0.50	-0.36	-0.83	0.34
200603	1.54	3.54	-0.07	0.37
200604	0.94	-1.23	3.08	0.36
200605	-3.53	-2.99	2.78	0.43
200606	-0.44	-0.49	1.50	0.40
200607	-0.59	-3.94	3.30	0.40
200608	2.09	0.81	-1.73	0.42
200609	1.53	-1.21	-0.43	0.41
200610	3.30	1.65	0.48	0.41
200611	1.95	0.73	0.51	0.42
200612	0.68	-0.89	2.54	0.40
200701	1.50	0.06	-0.10	0.44
200702	-1.78	1.43	0.24	0.38
200703	0.87	-0.23	0.43	0.43
200704	3.55	-2.09	-0.96	0.44
200705	3.48	-0.06	-0.09	0.41
200706	-1.87	0.67	-1.03	0.40
200707	-3.57	-2.70	-2.93	0.40
200708	0.75	-0.14	-2.37	0.42
200709	3.77	-2.47	-2.13	0.32
200710	2.26	0.09	-1.92	0.32
200711	-5.27	-2.73	-1.02	0.34
200712	-0.70	0.07	-0.05	0.27
200801	-6.44	-0.76	3.01	0.21
200802	-2.33	-0.55	0.05	0.13
200803	-1.21	0.86	0.17	0.17
200804	4.94	-1.55	0.07	0.17
200805	2.22	2.84	-0.26	0.17
200806	-8.03	1.05	-1.06	0.17
200807	-1.47	3.74	3.59	0.15
200808	0.99	3.79	1.48	0.12
200809	-9.96	-0.23	4.42	0.15
200810	-18.54	-2.17	-3.07	0.08
200811	-8.55	-3.57	-4.99	0.02
200812	2.06	3.99	-1.18	0.09
200901	-7.75	-0.90	-9.93	0.00
200902	-10.12	-0.41	-6.75	0.01
200903	8.76	0.75	2.57	0.01
200904	11.04	5.16	5.68	0.01
200905	6.73	-2.64	0.45	0.00
200906	-0.28	2.65	-2.45	0.00
200907	8.24	2.47	4.82	0.01
200908	3.19	-0.56	7.68	0.01
200909	4.52	2.33	1.47	0.00
200910	-2.84	-4.28	-4.37	0.00
200911	5.74	-2.84	0.13	0.00
200912	2.92	5.89	0.72	0.00
201001	-3.71	0.43	0.57	0.00
201002	3.54	1.39	2.75	0.00
201003	6.44	1.57	2.01	0.00
201004	2.02	5.01	3.14	0.00
201005	-8.00	-0.01	-2.36	0.01

---

---

```

201006    -5.21    -2.08    -4.31     0.01
201007     7.24    -0.06     0.23     0.01
201008    -4.40    -2.92    -1.71     0.01
201009     9.24     3.95    -3.05     0.01
201010     3.89     0.95    -2.21     0.01
201011     0.56     3.78    -0.66     0.01
201012     6.78     0.77     3.53     0.01
201101     2.02    -2.46     0.96     0.00
201102     3.86     1.79     1.38     0.01
201103     0.29     2.73    -1.31     0.00
201104     2.82    -0.22    -2.31     0.00
201105    -1.47    -0.43    -2.22     0.00
201106    -1.85     0.05    -0.50     0.00
201107    -2.35    -1.43    -1.12     0.00
201108    -5.85    -3.24    -1.49     0.00
201109    -8.43    -3.58    -0.99     0.00
201110    11.53     3.53    -0.90     0.00
201111    -0.61    -0.22    -0.02     0.00
201112     0.49    -0.43     1.54     0.00
];
indmat=[192607     4.10     2.73     1.83     1.64     2.12
192608     2.58     2.26     2.41     4.51     4.36
192609     2.06    -0.39     1.06     0.61     0.29
192610    -4.65    -2.42    -2.26    -0.73    -2.85
192611     3.19     2.54     3.07     5.53     2.13
192612     4.10     2.76     1.03     0.15     3.39
192701    -1.42     0.13     0.46     4.91     1.52
192702     5.42     4.00     4.19     1.65     5.04
192703     2.40    -1.35     3.65     0.88     1.26
192704     2.97    -1.09     1.35     3.25     0.90
192705     5.43     5.68     5.28     4.01     6.40
192706    -1.63    -3.06     0.51     0.45    -2.10
192707     8.67     7.55     7.51     9.84     6.18
192708     6.78     1.99     3.01     0.28    -1.21
192709     5.40     4.90     4.00     5.65     4.75
192710    -3.41    -4.71    -4.56     5.13    -3.80
192711     7.73     7.71     6.48     3.68     4.53
192712     3.52     2.19     1.26    -0.46     1.99
192801    -1.10     0.20    -0.04     2.69    -1.17
192802    -1.57    -1.12    -0.37    -1.38    -1.94
192803    13.72     6.98    10.33    10.54     6.05
192804     0.54     7.66     2.70     2.35     4.09
192805     3.57     0.12     4.47     9.27     0.09
192806    -4.16    -4.33    -5.17    -3.15    -4.23
192807     2.24     1.05    -0.31     2.68    -0.32
192808     8.68     6.23     7.36    15.11     4.77
192809     3.84     4.31     0.45    -1.50     1.94
192810     1.41     2.42     2.36    -0.08    -0.32
192811     7.84    16.04    13.47     5.05    10.06
192812    -1.05     0.48     3.76    -0.28     0.47
192901     0.34     5.96    11.70     3.25     5.67
192902    -1.59     1.34    -0.91    -0.16    -0.05
192903    -3.81     1.14     4.47    -1.93    -2.21
192904     1.02     2.51     2.42     1.55     0.57

```

---

---

192905	-9.25	-5.63	-3.64	-7.67	0.09
192906	6.68	12.27	15.64	4.13	5.81
192907	0.12	4.63	10.95	2.87	6.64
192908	4.88	9.87	11.80	4.04	7.89
192909	-5.49	-3.93	-5.02	-6.98	-6.47
192910	-20.47	-20.23	-22.61	-18.02	-11.84
192911	-12.08	-12.25	-14.76	-8.53	-9.62
192912	0.77	2.42	6.15	1.40	-0.40
193001	5.07	4.93	6.16	2.24	4.56
193002	0.10	2.19	7.38	2.88	3.38
193003	3.83	9.99	8.52	5.90	4.92
193004	-1.90	-1.09	-0.81	0.05	-6.56
193005	1.80	-2.10	-2.35	-1.22	-0.94
193006	-15.39	-16.88	-14.73	-13.21	-11.87
193007	5.47	4.05	2.77	6.12	3.56
193008	1.53	-0.39	2.00	8.08	-0.30
193009	-11.24	-13.66	-12.28	-8.71	-10.37
193010	-7.53	-9.21	-10.80	-4.66	-8.40
193011	2.12	-3.36	-3.28	-3.08	-5.26
193012	-5.98	-7.93	-7.02	-7.30	-8.87
193101	6.22	4.58	4.95	7.96	11.87
193102	11.92	11.99	13.38	8.59	5.43
193103	-3.01	-7.31	-5.54	1.81	-9.55
193104	-5.70	-12.71	-8.40	-3.69	-9.74
193105	-10.58	-13.83	-10.73	-9.97	-17.58
193106	10.76	15.70	13.90	9.58	16.37
193107	-2.53	-7.09	-7.17	3.18	-9.89
193108	-0.43	1.28	2.05	0.03	-4.11
193109	-28.17	-29.81	-26.74	-29.95	-26.25
193110	9.75	9.29	7.04	11.06	1.26
193111	-5.01	-7.70	-9.73	-2.45	-18.61
193112	-10.54	-15.33	-9.97	-4.11	-16.43
193201	-0.57	-2.13	-6.78	-3.00	6.80
193202	4.05	6.80	9.77	2.80	-0.32
193203	-10.08	-9.31	-11.39	-6.87	-15.90
193204	-15.66	-17.70	-16.19	-19.91	-22.28
193205	-23.26	-17.78	-16.06	-34.74	-29.99
193206	-1.12	1.10	-5.40	10.43	-2.08
193207	28.21	35.33	24.49	29.95	55.52
193208	29.44	35.87	33.83	37.46	58.74
193209	1.47	-5.53	-1.84	-12.86	-4.05
193210	-14.18	-11.11	-11.89	-19.42	-17.90
193211	-5.75	-6.10	-3.39	6.32	-6.96
193212	4.52	4.15	4.88	8.11	4.91
193301	2.05	-0.81	0.67	-1.30	8.79
193302	-13.68	-16.92	-11.61	-10.12	-16.35
193303	9.55	1.99	-2.45	-3.94	4.00
193304	42.69	41.63	25.66	38.66	30.17
193305	16.40	22.02	18.19	24.87	31.35
193306	14.38	13.15	10.59	10.85	14.35
193307	-8.40	-11.88	-6.91	-19.43	-6.59
193308	12.00	13.03	7.57	-0.29	14.59
193309	-9.87	-9.61	-8.86	-1.32	-16.47
193310	-9.02	-6.96	-8.07	-5.91	-10.84

---

---

193311	12.00	10.71	8.08	9.40	5.36
193312	2.59	2.33	-1.85	-11.19	4.90
193401	13.79	11.81	9.73	16.23	18.58
193402	-2.08	-2.85	-1.31	-3.41	-1.88
193403	1.20	-1.43	2.02	-0.75	0.76
193404	-0.75	-2.74	-1.65	8.35	-1.55
193405	-6.74	-7.85	-5.18	-0.29	-7.27
193406	1.72	3.33	1.81	2.07	3.15
193407	-7.81	-11.93	-7.27	-1.85	-17.18
193408	6.37	6.55	4.03	-3.03	4.33
193409	0.52	-1.05	1.06	0.64	-0.35
193410	0.13	-2.93	-1.36	-0.94	-2.11
193411	11.12	9.32	4.06	3.83	5.71
193412	0.13	0.46	1.19	0.63	-0.11
193501	-4.13	-3.01	0.26	-0.92	-6.67
193502	-0.33	-3.20	0.66	4.40	-4.53
193503	-4.99	-2.80	-2.18	-3.24	-5.43
193504	5.82	10.92	9.59	3.57	8.78
193505	2.16	3.75	5.98	-4.31	3.75
193506	6.04	5.21	6.32	4.06	6.27
193507	7.88	7.26	7.37	3.90	7.31
193508	2.58	2.09	3.70	0.12	3.29
193509	3.76	1.28	5.74	1.33	0.57
193510	7.28	8.99	5.58	6.11	2.36
193511	2.29	3.41	7.95	1.69	13.23
193512	2.49	6.94	1.41	2.53	4.26
193601	1.68	8.71	5.21	3.66	12.00
193602	1.65	2.68	3.67	3.19	2.93
193603	3.14	2.02	-1.87	3.78	-2.95
193604	-6.50	-8.91	-7.04	-9.08	-7.27
193605	4.30	4.61	5.96	4.87	7.53
193606	4.96	1.65	1.98	1.36	1.78
193607	4.03	7.35	6.78	4.92	9.55
193608	0.75	0.63	2.12	-1.47	1.80
193609	2.29	1.31	-0.42	0.73	0.92
193610	5.44	8.74	5.37	3.75	8.13
193611	3.98	3.31	4.62	3.36	0.46
193612	-5.18	3.40	1.02	-2.02	-1.21
193701	3.54	3.71	3.73	3.31	1.05
193702	0.87	1.56	-2.22	-3.90	4.69
193703	-2.67	1.18	-3.31	-5.02	2.62
193704	-6.84	-7.82	-6.41	-3.34	-6.71
193705	-2.49	0.05	1.09	1.70	-3.37
193706	-5.36	-3.50	0.03	-4.04	-8.94
193707	8.80	9.79	6.29	4.13	8.67
193708	-3.08	-5.57	-3.66	1.12	-8.41
193709	-11.30	-15.63	-7.94	-10.77	-15.86
193710	-8.64	-10.92	-6.22	-3.58	-10.16
193711	-11.01	-8.70	-3.94	-5.14	-6.78
193712	-7.25	-2.87	-1.82	-2.07	-6.57
193801	5.99	-1.23	-2.49	3.52	0.49
193802	4.81	8.23	0.61	8.69	4.87
193803	-20.15	-24.72	-22.21	-14.37	-29.74
193804	13.88	14.07	14.90	11.73	14.46

---

---

193805	-2.91	-5.56	-0.86	1.71	-3.92
193806	20.96	27.61	18.86	9.97	24.88
193807	10.86	6.21	3.34	5.73	9.92
193808	-0.77	-4.30	-0.37	0.37	-3.82
193809	0.29	1.40	1.25	-0.03	-1.28
193810	6.21	8.18	6.63	5.52	11.28
193811	-1.62	-1.76	-1.86	1.46	-2.00
193812	1.90	5.19	2.83	0.86	6.40
193901	-4.14	-7.34	-2.66	-0.93	-8.74
193902	4.68	2.57	3.20	3.73	4.74
193903	-10.27	-13.35	-8.03	-4.36	-15.15
193904	0.40	-0.77	0.46	0.97	-1.85
193905	7.60	6.08	6.67	5.48	8.07
193906	-3.56	-5.88	-5.54	1.19	-7.70
193907	10.08	10.32	9.60	3.05	11.55
193908	-7.00	-5.91	-5.80	-5.38	-9.93
193909	8.97	23.56	6.49	7.03	25.76
193910	2.46	-2.42	1.29	0.19	-1.63
193911	-1.81	-5.50	-0.55	1.22	-4.99
193912	3.63	2.87	3.23	3.80	2.33
194001	-0.76	-3.46	-1.87	-1.82	-2.66
194002	1.32	1.78	0.35	1.50	0.85
194003	2.78	1.57	1.96	1.89	2.64
194004	0.70	0.35	-0.38	-0.31	-0.81
194005	-23.12	-22.35	-16.83	-21.25	-23.87
194006	7.03	6.17	6.50	4.94	8.55
194007	2.97	3.45	3.11	-0.53	3.42
194008	3.48	1.75	1.04	-2.29	2.88
194009	2.86	1.93	2.64	4.65	2.49
194010	0.72	4.46	1.93	-3.05	5.25
194011	-1.04	-2.45	-0.74	-1.83	-0.14
194012	-0.71	1.54	1.22	-0.22	0.26
194101	-4.04	-5.34	-2.29	-2.21	-1.58
194102	-1.75	-1.63	-1.52	-4.72	-0.32
194103	0.09	0.94	1.21	1.76	1.90
194104	-6.16	-4.38	-7.33	-5.27	-4.40
194105	0.29	3.30	0.08	-1.48	-0.92
194106	5.29	5.95	7.20	6.76	4.51
194107	4.92	7.98	0.44	8.01	7.37
194108	1.80	-1.50	0.95	0.07	0.12
194109	2.07	-2.35	-0.16	-0.21	-2.58
194110	-6.73	-4.26	-5.71	-3.70	-4.11
194111	-3.29	-0.54	-3.30	-2.94	-1.64
194112	-7.52	-3.38	-5.08	-1.49	-5.50
194201	2.49	-1.57	-0.44	-3.13	9.43
194202	-1.64	-3.37	-1.37	-5.41	-1.92
194203	-5.40	-6.80	-6.69	-5.65	-9.01
194204	-4.47	-4.14	-5.80	-4.47	-2.00
194205	9.96	3.63	7.78	14.80	3.45
194206	2.68	3.61	0.57	2.85	1.93
194207	2.75	3.36	3.33	1.51	6.58
194208	1.74	1.85	1.65	2.22	2.41
194209	0.73	3.23	3.38	0.25	3.31
194210	3.87	8.14	6.17	4.05	8.63

---

---

194211	2.76	-1.24	2.41	1.57	-1.96
194212	5.14	5.84	2.78	8.80	4.30
194301	7.37	7.37	6.46	2.25	7.21
194302	4.71	6.19	6.31	3.79	9.52
194303	5.68	6.24	3.64	4.40	9.93
194304	1.01	-0.32	2.78	1.25	2.22
194305	6.73	5.43	5.30	5.02	5.52
194306	3.58	1.26	2.43	0.48	-0.80
194307	-4.50	-4.94	-3.44	-3.08	-5.09
194308	2.33	0.90	0.64	0.29	1.37
194309	2.21	2.38	3.15	3.94	2.22
194310	-1.34	-1.07	-1.14	0.50	-1.10
194311	-4.62	-6.65	-3.83	-3.98	-7.85
194312	6.57	6.51	5.27	3.76	7.17
194401	2.37	1.27	0.72	0.33	4.46
194402	1.29	-0.04	-0.45	-2.60	2.08
194403	3.26	2.06	2.03	2.48	2.66
194404	-1.51	-1.69	-1.18	-2.33	-2.38
194405	6.19	5.06	3.16	5.65	4.29
194406	6.87	4.80	5.10	3.89	5.86
194407	-1.88	-1.49	-1.04	-1.32	-0.82
194408	3.30	1.05	1.21	0.84	0.40
194409	0.47	-0.27	-0.15	0.36	0.13
194410	-0.76	0.51	0.82	1.19	0.69
194411	1.90	1.25	1.08	0.39	4.32
194412	2.92	4.34	2.52	1.65	8.41
194501	1.18	3.75	-0.82	0.39	0.60
194502	5.36	6.91	4.66	4.39	7.86
194503	-3.56	-4.71	-1.91	-1.85	-3.60
194504	8.27	8.09	5.15	6.41	8.87
194505	2.91	0.41	2.79	4.13	2.99
194506	-1.23	0.26	0.42	-4.68	4.35
194507	-1.10	-2.74	0.36	-1.62	-5.40
194508	8.40	5.90	5.35	9.30	2.47
194509	4.96	4.99	2.64	6.57	6.06
194510	4.44	3.87	1.57	6.39	5.72
194511	4.08	5.87	3.02	8.62	9.00
194512	1.86	0.73	1.48	1.27	0.11
194601	7.01	5.97	4.15	7.61	7.55
194602	-5.84	-5.62	-5.11	-4.14	-6.22
194603	6.39	7.28	1.61	14.71	4.63
194604	4.37	5.55	1.52	14.91	1.56
194605	3.47	4.28	3.90	5.58	3.57
194606	-5.64	-3.34	-2.38	-5.50	-3.30
194607	-2.37	-2.35	-1.66	-3.14	-4.99
194608	-6.49	-6.18	-6.87	-3.22	-6.64
194609	-10.28	-9.45	-7.14	-7.02	-14.32
194610	-1.48	-1.07	-4.09	-0.28	-0.20
194611	-2.26	1.30	-0.06	1.64	0.37
194612	4.76	5.89	4.23	7.40	2.78
194701	3.83	0.28	2.97	-5.35	0.50
194702	-0.03	-1.25	-2.06	-4.21	-1.49
194703	-2.31	-0.61	-2.28	-1.28	-3.43
194704	-6.20	-3.89	-2.50	-8.46	-6.32

---



---

194705	-1.06	-0.71	-0.76	-2.62	-1.79
194706	7.30	6.16	-0.03	4.23	3.28
194707	4.72	3.70	3.47	2.60	5.96
194708	-1.88	-1.24	-1.90	-3.83	-3.17
194709	-0.46	-0.59	0.99	-2.62	-0.97
194710	2.19	3.42	0.95	1.22	1.00
194711	-2.01	-1.74	-1.59	-3.04	-1.97
194712	0.93	4.47	1.44	3.10	3.67
194801	-3.38	-4.69	-2.69	-8.23	-0.87
194802	-5.26	-4.37	-2.46	-3.53	-4.09
194803	6.43	9.35	6.31	6.33	9.88
194804	2.22	5.14	1.03	2.14	3.24
194805	8.75	7.02	7.53	6.78	6.77
194806	-1.04	0.90	-0.51	-2.19	-0.80
194807	-4.25	-5.66	-4.11	-4.25	-4.97
194808	1.01	-0.44	1.51	-1.90	1.53
194809	-3.01	-3.04	-1.67	-3.08	-3.42
194810	5.02	7.22	3.89	5.19	4.96
194811	-7.31	-10.68	-5.64	-5.74	-10.58
194812	1.67	4.08	3.58	4.54	2.87
194901	2.49	-0.51	-1.30	4.57	0.31
194902	-2.79	-3.18	-2.22	-0.93	-3.17
194903	3.59	4.38	3.50	5.50	4.89
194904	-2.35	-1.34	-2.66	0.24	-1.54
194905	-0.59	-3.69	-3.70	-1.88	-2.67
194906	1.91	-0.39	0.64	2.16	-1.37
194907	6.02	5.84	4.48	6.00	4.19
194908	2.66	3.44	0.87	0.19	1.45
194909	2.56	3.66	2.36	1.86	3.40
194910	2.71	3.68	2.77	3.38	2.44
194911	2.83	1.32	2.74	4.81	1.21
194912	5.85	4.34	5.27	8.70	7.17
195001	1.09	1.47	3.21	1.06	3.19
195002	1.67	1.29	2.06	1.92	1.02
195003	0.11	1.92	3.46	-2.90	-0.68
195004	3.10	5.21	3.58	5.52	1.50
195005	3.62	6.19	1.07	3.96	1.36
195006	-4.81	-6.11	-6.17	-4.19	-6.79
195007	-0.94	2.81	-2.09	-6.94	7.49
195008	5.72	5.26	3.84	3.68	2.30
195009	6.99	4.19	2.17	6.16	6.52
195010	0.32	0.22	-0.63	-1.76	-1.52
195011	-0.70	4.65	1.18	4.68	3.94
195012	2.41	6.83	2.88	6.06	11.04
195101	5.63	6.03	4.82	3.10	6.40
195102	2.32	1.41	2.46	1.46	-0.41
195103	-1.20	-2.59	-1.00	1.70	-2.84
195104	1.56	7.12	2.03	10.41	3.74
195105	-2.78	-2.13	-1.63	1.57	-3.26
195106	-4.31	-1.77	-0.90	0.83	-5.11
195107	2.97	8.92	4.20	14.46	7.39
195108	4.46	4.76	4.26	-1.43	3.46
195109	1.66	0.05	1.66	-1.82	3.58
195110	-2.70	-1.67	-3.78	-5.97	-3.62

---

---

195111	1.01	0.20	1.51	-0.48	2.11
195112	1.42	4.42	2.90	5.14	2.13
195201	-0.33	2.56	-0.76	0.65	3.32
195202	-1.59	-3.00	-1.99	-4.25	-1.58
195203	4.10	4.89	3.24	0.45	5.85
195204	-2.75	-6.27	-2.09	-5.50	-3.39
195205	2.98	3.80	1.99	2.52	2.94
195206	3.68	4.22	4.00	-0.96	4.02
195207	1.70	1.03	0.82	-4.38	1.14
195208	1.06	-1.46	0.34	-0.57	-0.14
195209	-1.45	-2.46	0.34	-4.09	-1.37
195210	-0.23	-0.57	-0.07	-1.49	-1.57
195211	5.59	5.80	6.58	7.22	7.27
195212	3.59	3.18	1.98	-1.95	3.73
195301	0.93	-0.53	-0.68	-5.11	1.08
195302	0.16	-0.29	0.05	2.06	-0.22
195303	-2.68	-0.97	-0.59	-0.17	-1.44
195304	-0.93	-3.55	-0.70	-5.34	-3.21
195305	0.58	0.69	0.76	-0.04	1.44
195306	-2.25	-1.69	-0.78	-3.31	-2.05
195307	1.91	3.19	1.58	3.66	1.43
195308	-4.25	-4.53	-2.52	0.05	-6.77
195309	-0.11	0.25	2.50	0.42	-0.99
195310	3.06	5.59	4.12	2.66	3.69
195311	1.13	3.24	3.59	7.98	2.77
195312	-0.26	0.58	0.60	-1.34	-2.30
195401	4.23	5.58	4.30	5.65	6.64
195402	0.64	1.67	3.79	-0.19	1.54
195403	1.88	4.31	5.31	0.28	1.80
195404	2.21	5.03	5.69	1.20	2.87
195405	3.23	3.65	0.35	1.61	4.39
195406	1.26	0.09	5.45	-2.43	1.50
195407	6.92	4.95	1.72	8.21	6.83
195408	-2.19	-2.09	-3.15	-2.56	-2.26
195409	8.02	6.76	4.55	2.82	4.32
195410	-1.70	-1.88	-1.45	-1.62	0.59
195411	6.04	10.47	8.62	12.56	11.15
195412	4.88	6.00	2.40	6.12	9.36
195501	0.86	0.30	2.30	-2.88	0.89
195502	0.43	3.54	4.23	2.85	3.77
195503	-0.69	-0.01	-0.70	6.09	0.93
195504	4.10	2.88	3.89	0.02	3.43
195505	0.12	1.39	0.59	3.15	1.63
195506	5.96	8.76	1.85	0.17	2.37
195507	9.49	0.76	-0.27	0.13	-1.42
195508	-1.76	1.31	-0.71	0.15	0.57
195509	4.46	-0.94	-1.75	-3.17	-2.70
195510	-3.19	-2.12	-3.25	0.82	-2.60
195511	6.65	7.46	5.97	6.29	8.30
195512	-1.78	2.70	2.97	6.23	-0.65
195601	-4.55	-2.37	-1.96	-6.50	-2.76
195602	3.54	4.26	3.36	8.27	3.37
195603	2.28	8.35	6.29	7.26	5.70
195604	-2.55	1.44	-0.33	2.76	0.89

---

---

195605	-4.05	-5.52	-3.44	-1.23	-5.40
195606	3.87	3.69	4.50	3.60	1.55
195607	3.70	5.92	4.11	3.09	2.42
195608	-0.99	-3.66	-2.60	-3.07	-3.55
195609	-2.58	-5.67	-5.06	-3.68	-4.40
195610	-0.13	0.91	1.14	0.58	1.11
195611	-2.31	1.33	1.06	-1.30	0.22
195612	0.79	4.19	3.60	6.06	2.00
195701	-2.82	-4.10	-1.89	-2.27	-0.55
195702	-1.51	-2.22	-0.20	-0.35	-2.55
195703	1.19	2.35	3.26	8.22	2.30
195704	4.13	4.69	4.78	5.43	3.15
195705	1.45	4.54	3.72	4.79	1.36
195706	-0.61	-1.18	2.14	6.46	-1.10
195707	2.61	0.59	0.52	2.60	1.12
195708	-2.67	-5.55	-4.14	-2.98	-5.45
195709	-3.73	-6.51	-4.55	-3.04	-6.66
195710	-3.30	-4.47	-1.92	-0.68	-6.87
195711	-1.09	3.19	4.25	8.58	0.33
195712	-3.84	-4.25	-1.29	-0.48	-4.40
195801	6.58	4.31	4.13	-0.41	11.01
195802	0.47	-2.26	-0.62	4.95	-1.77
195803	3.68	3.61	1.97	8.17	2.51
195804	3.95	3.28	1.13	6.55	4.52
195805	3.77	2.06	1.77	1.44	3.75
195806	2.53	3.17	2.74	3.55	2.87
195807	5.20	4.64	2.48	5.97	5.27
195808	2.25	1.67	2.22	1.98	3.00
195809	6.60	3.96	5.69	11.72	4.42
195810	2.29	2.72	3.18	1.05	3.77
195811	3.43	2.62	3.40	8.03	4.63
195812	3.33	4.13	13.18	4.61	3.08
195901	1.67	0.79	0.36	-0.62	2.10
195902	0.88	-0.03	5.03	3.86	1.74
195903	-0.88	0.74	1.12	4.25	-0.71
195904	5.23	2.54	6.80	11.92	1.96
195905	3.22	1.79	2.37	-1.07	0.63
195906	1.08	-0.38	-1.01	6.59	1.41
195907	5.11	4.06	0.51	4.73	0.27
195908	1.07	-1.67	-1.20	-3.57	-2.22
195909	-3.41	-5.35	-2.81	-4.96	-4.11
195910	0.88	1.26	3.38	2.34	0.30
195911	0.92	1.22	4.76	5.62	-0.51
195912	3.18	2.67	3.78	-1.67	2.11
196001	-7.24	-7.09	-5.48	-6.38	-4.50
196002	1.10	-0.08	6.64	0.31	-0.02
196003	-2.15	-1.90	0.98	1.61	-2.26
196004	-0.16	-2.76	-0.16	1.65	-1.11
196005	2.86	1.61	6.88	13.72	0.25
196006	3.06	2.92	0.71	-0.16	2.84
196007	-1.41	-2.41	-2.45	-3.86	-1.46
196008	3.79	2.83	3.65	2.46	3.11
196009	-5.54	-5.06	-7.50	-8.71	-5.70
196010	0.18	0.01	-1.76	-3.49	-0.80

---

---

196011	4.94	4.24	5.75	4.04	6.68
196012	2.28	4.79	7.19	6.22	4.20
196101	5.63	7.06	5.19	6.05	7.78
196102	5.29	3.63	1.78	5.20	5.68
196103	4.63	1.65	4.96	3.80	3.54
196104	-0.92	0.86	0.63	-0.30	0.57
196105	3.00	2.95	0.99	2.28	4.18
196106	-0.92	-3.00	-3.65	-3.38	-3.75
196107	3.73	2.52	3.99	3.50	1.26
196108	3.46	2.19	2.41	3.86	5.22
196109	1.53	-3.62	-1.18	-1.23	-1.86
196110	4.04	2.68	1.89	3.66	2.32
196111	6.61	3.69	5.49	3.14	3.85
196112	-0.50	0.01	1.20	-1.99	-1.83
196201	-4.92	-2.40	-5.50	-4.78	-1.47
196202	0.05	2.72	1.95	3.75	1.72
196203	-0.04	-0.22	-1.33	0.41	-1.78
196204	-5.60	-5.59	-8.00	-11.33	-7.08
196205	-8.40	-7.89	-9.17	-10.78	-7.86
196206	-8.25	-7.20	-10.02	-12.89	-9.16
196207	6.00	5.69	9.20	7.78	5.75
196208	2.83	2.41	2.47	-7.92	3.81
196209	-4.66	-3.93	-7.45	-4.05	-5.74
196210	-0.65	0.33	1.34	2.47	0.56
196211	9.81	11.10	10.74	17.59	14.77
196212	1.81	1.65	0.45	0.88	1.37
196301	6.08	4.75	4.88	5.66	5.24
196302	-2.33	-1.93	-3.08	-2.58	-0.44
196303	4.09	3.78	2.34	1.18	2.95
196304	4.43	4.53	5.06	7.62	5.92
196305	4.47	1.18	1.78	-0.25	3.56
196306	-2.14	-1.10	-3.47	-1.09	-1.39
196307	-0.42	0.24	-0.42	0.57	-1.58
196308	6.00	5.03	4.61	9.56	5.36
196309	-0.41	-2.05	1.49	-4.07	-3.17
196310	5.97	0.96	5.31	3.38	1.37
196311	-3.15	-0.43	2.38	-1.65	0.10
196312	1.20	2.83	1.12	1.53	2.65
196401	1.38	3.07	3.17	3.70	1.16
196402	1.70	1.82	0.60	1.65	5.35
196403	1.99	2.05	0.81	-1.94	2.32
196404	1.35	0.62	-1.00	-1.42	0.32
196405	2.07	1.72	0.86	0.52	2.38
196406	1.72	1.10	2.99	0.58	1.31
196407	3.42	2.72	-1.93	4.76	1.23
196408	0.66	-1.17	-2.03	-4.22	-3.07
196409	3.50	3.60	-0.17	2.74	4.03
196410	0.52	1.30	-0.93	2.86	1.76
196411	0.45	0.85	-1.43	2.17	-1.63
196412	0.99	-0.37	1.86	4.38	-1.73
196501	4.27	3.57	3.11	7.66	4.75
196502	0.55	0.24	1.38	2.42	2.56
196503	0.16	-1.57	-1.18	-0.92	-0.38
196504	6.04	2.34	3.51	2.97	2.32

---

---

196505	-1.74	-0.21	1.79	-1.25	-1.53
196506	-6.17	-4.42	-4.82	-5.31	-6.96
196507	1.17	1.75	1.28	3.95	3.33
196508	3.33	2.41	3.26	6.29	5.08
196509	3.28	3.50	2.92	2.24	1.80
196510	3.78	2.96	1.07	3.23	4.12
196511	-1.26	0.70	-1.03	3.79	4.06
196512	1.38	1.62	-1.17	3.84	3.28
196601	-0.12	1.18	-0.02	2.74	5.22
196602	-1.26	-2.16	2.70	-1.55	2.03
196603	-2.69	-1.57	-2.87	-1.60	-2.58
196604	0.85	2.58	4.52	-0.01	3.02
196605	-6.12	-4.53	-4.61	-5.27	-7.77
196606	-2.01	-1.51	0.16	0.99	0.64
196607	-2.01	-0.72	-1.45	-1.71	-1.92
196608	-7.18	-7.62	-5.29	-8.09	-11.81
196609	-1.35	0.07	-1.27	-1.15	-1.90
196610	1.26	5.76	4.54	4.87	3.03
196611	-0.65	0.69	4.01	6.90	7.93
196612	-1.99	0.90	1.62	-0.18	2.13
196701	11.00	7.24	8.34	6.45	11.98
196702	0.92	0.27	4.29	1.40	-0.33
196703	3.71	4.34	4.35	7.86	4.40
196704	8.43	2.79	4.43	4.46	2.16
196705	-5.16	-3.36	-4.94	-5.28	-2.06
196706	2.45	1.52	4.84	5.41	3.48
196707	8.21	5.10	-0.38	3.79	7.90
196708	-0.08	-0.80	-1.10	0.65	-0.21
196709	3.74	2.86	5.62	2.90	1.32
196710	-2.93	-3.60	1.79	-5.02	-5.06
196711	-0.03	1.10	0.96	1.33	-0.40
196712	2.27	4.25	1.44	1.62	5.59
196801	-2.18	-3.71	-4.85	-6.58	-1.90
196802	-2.07	-3.31	-3.79	-4.24	-3.45
196803	1.23	-0.06	2.25	0.11	-0.30
196804	11.64	7.75	8.77	11.89	11.95
196805	2.43	2.18	2.29	3.35	6.21
196806	-0.04	1.71	0.00	2.23	3.03
196807	-3.85	-0.69	-3.79	-4.12	-2.80
196808	2.02	1.96	0.80	0.68	2.84
196809	6.34	3.52	2.95	0.84	9.27
196810	2.34	1.35	-2.13	-0.04	1.11
196811	2.81	6.21	7.44	8.11	7.72
196812	-3.20	-3.09	-5.81	-1.02	-3.66
196901	-1.37	-0.19	-2.63	-0.23	0.71
196902	-4.72	-5.32	-3.51	-5.16	-8.31
196903	3.61	3.32	3.31	3.34	0.74
196904	1.85	0.80	5.27	4.98	1.79
196905	0.59	0.75	-0.70	1.68	-1.22
196906	-6.29	-7.61	-1.56	-5.04	-10.66
196907	-7.35	-6.44	-5.08	-2.73	-9.10
196908	4.97	3.97	5.13	9.30	9.02
196909	-0.08	-4.79	-1.22	2.09	-0.70
196910	6.13	4.59	5.04	8.98	7.98

---

---

196911	-3.67	-4.12	-0.82	0.32	-5.53
196912	-2.79	-1.66	-2.31	4.30	-3.75
197001	-6.17	-7.90	-6.99	-7.12	-8.82
197002	5.19	5.56	4.61	5.60	9.42
197003	1.01	0.12	-0.91	-5.08	-1.91
197004	-9.93	-8.89	-12.38	-10.11	-13.67
197005	-7.66	-4.57	-7.41	-7.78	-8.23
197006	-3.16	-4.08	-10.51	-0.51	-6.83
197007	9.20	7.89	5.37	2.16	8.00
197008	5.02	5.17	5.80	1.80	5.13
197009	5.10	2.94	5.89	8.03	7.61
197010	-0.97	-0.86	-3.59	0.26	-5.90
197011	6.20	5.21	4.79	2.96	3.86
197012	6.35	6.03	5.28	5.37	8.36
197101	5.45	3.70	7.00	4.94	7.82
197102	3.17	1.58	-0.25	1.39	2.35
197103	4.74	3.47	5.45	3.68	5.96
197104	5.31	3.01	1.81	4.23	4.35
197105	-3.15	-3.22	-5.83	-2.10	-4.43
197106	-0.15	1.24	-1.10	2.02	-1.21
197107	-3.78	-3.66	-6.93	-2.25	-3.85
197108	6.65	2.63	3.61	3.27	7.01
197109	0.15	-0.86	-0.96	0.66	-0.43
197110	-4.36	-4.21	-3.49	-2.50	-4.20
197111	0.07	-0.69	1.30	0.58	-0.23
197112	8.86	9.35	9.95	7.90	8.21
197201	2.02	1.80	5.96	2.60	3.35
197202	3.59	3.00	1.34	7.13	2.25
197203	2.13	-0.17	0.66	0.46	2.34
197204	0.27	0.44	0.20	1.08	1.82
197205	0.26	2.17	2.96	3.52	-0.62
197206	-2.63	-1.76	-2.59	2.51	-4.53
197207	-2.04	-0.01	0.91	3.13	-2.93
197208	1.09	5.49	3.52	1.05	3.62
197209	-1.37	-0.70	0.47	-0.44	-1.72
197210	-0.54	2.52	-1.58	1.51	1.13
197211	6.93	5.13	3.98	-0.56	5.15
197212	1.33	0.52	1.82	3.74	-0.71
197301	-5.26	-1.21	0.62	-1.19	-7.42
197302	-5.51	-3.73	-3.53	-0.71	-6.07
197303	-3.14	0.35	-0.66	0.78	-0.25
197304	-6.52	-2.87	-4.28	-5.49	-7.72
197305	-2.82	-1.71	-1.99	1.07	-4.99
197306	-3.84	-0.12	-0.16	0.00	-0.22
197307	8.51	3.27	3.15	6.87	9.53
197308	-3.82	-2.36	-3.77	-6.89	-2.27
197309	7.01	6.41	0.66	0.78	7.17
197310	-3.36	1.12	0.53	1.83	-1.03
197311	-16.26	-11.54	-8.25	-7.75	-13.36
197312	-1.89	3.82	-1.33	-4.47	2.41
197401	4.94	-1.66	1.51	-2.56	1.16
197402	-0.02	-0.48	1.32	-1.23	1.01
197403	-1.81	-2.03	-3.42	1.22	-3.65
197404	-3.28	-5.06	-4.26	-1.48	-6.39

---

---

197405	-0.52	-4.11	-3.24	-0.11	-8.41
197406	-1.92	-1.10	-1.77	-1.61	-5.54
197407	-11.57	-4.21	-8.01	-14.15	-6.62
197408	-9.96	-9.47	-3.07	-8.04	-10.61
197409	-12.37	-9.57	-11.85	-15.56	-9.60
197410	10.39	17.18	13.09	29.58	20.16
197411	-4.68	-4.67	-4.19	-1.22	-2.77
197412	-2.49	-2.15	-2.41	-3.32	-4.36
197501	21.73	12.50	13.48	-0.74	17.88
197502	4.60	5.06	9.79	16.04	2.86
197503	8.06	1.78	0.24	1.29	4.16
197504	3.19	7.15	2.98	0.65	3.28
197505	4.13	6.32	4.99	6.52	5.71
197506	7.43	5.44	2.94	0.95	5.95
197507	-5.10	-5.18	-7.46	-12.03	-6.13
197508	-2.32	-0.94	-3.20	-3.32	-5.14
197509	-2.79	-3.48	-1.00	-6.53	-6.30
197510	9.83	3.51	7.78	10.68	3.92
197511	3.99	1.68	4.74	5.13	3.59
197512	-1.69	-0.50	-0.83	-6.36	-0.27
197601	11.70	12.83	14.93	7.73	12.97
197602	2.21	-0.44	2.04	-6.53	3.13
197603	2.48	2.70	2.06	6.53	1.99
197604	-1.52	-0.03	-1.57	-4.30	-1.54
197605	-3.57	0.77	-0.79	-2.81	-1.72
197606	3.14	4.36	6.52	3.67	5.39
197607	-0.45	-0.74	-0.98	-0.38	-0.06
197608	0.30	-0.61	1.19	2.17	-1.14
197609	2.12	3.00	2.38	3.62	0.91
197610	-1.25	-2.71	-2.33	-3.74	-0.43
197611	1.90	0.53	2.23	-9.71	2.07
197612	5.73	6.23	3.69	6.26	8.40
197701	-5.00	-2.68	-2.32	-8.84	-4.16
197702	-2.21	-1.97	0.00	-0.21	-1.72
197703	-2.42	-0.72	-0.44	-1.79	-0.09
197704	0.21	1.46	-1.81	-5.21	2.15
197705	-1.31	-1.16	-0.29	-1.88	-0.85
197706	4.87	4.70	5.34	9.03	5.33
197707	-0.41	-2.10	-0.45	-2.24	-0.40
197708	1.06	-3.09	-0.63	3.83	-1.21
197709	0.41	0.17	0.32	-0.89	-0.07
197710	-3.64	-3.85	-3.98	-1.75	-4.44
197711	3.98	3.97	4.00	6.08	6.49
197712	-0.63	0.94	2.29	0.62	0.61
197801	-6.26	-5.97	-4.52	-1.92	-5.33
197802	0.04	-1.58	-0.44	-3.00	-0.15
197803	4.36	2.97	0.73	4.17	5.46
197804	8.92	7.56	8.93	9.25	9.36
197805	2.07	2.49	0.85	5.17	2.62
197806	-1.54	-1.78	-0.82	1.14	-0.34
197807	4.33	5.37	5.73	8.86	6.63
197808	4.22	3.58	5.08	0.99	6.34
197809	-1.09	0.35	-2.15	-2.75	-1.25
197810	-12.17	-10.34	-8.37	-12.84	-14.10

---

---

197811	1.82	4.03	4.25	5.19	2.53
197812	0.31	1.41	3.90	3.41	1.29
197901	4.88	5.24	4.06	1.42	6.07
197902	-3.78	-2.29	-2.29	-4.52	-3.27
197903	5.40	7.03	4.73	5.04	8.19
197904	1.22	0.81	-0.59	0.43	1.55
197905	-1.67	-1.68	-1.21	-2.64	-0.15
197906	3.08	5.76	1.03	4.83	6.99
197907	1.79	1.90	-1.00	0.15	3.32
197908	7.02	6.63	4.28	8.56	5.82
197909	-0.85	1.42	-1.98	-0.55	-0.72
197910	-8.54	-5.94	-6.74	-4.34	-10.17
197911	2.52	6.99	6.64	8.77	7.05
197912	3.26	2.70	0.60	2.08	4.15
198001	4.20	8.98	4.04	-1.29	5.53
198002	-5.30	3.74	-2.86	-4.63	-3.36
198003	-8.40	-13.79	-9.31	-2.82	-12.27
198004	3.11	6.17	3.08	4.29	6.04
198005	7.71	5.00	4.89	6.96	8.10
198006	2.77	4.24	1.68	0.22	5.14
198007	9.70	5.04	10.17	8.88	6.91
198008	1.61	2.08	4.55	0.27	2.75
198009	0.72	4.09	0.77	3.62	3.83
198010	-0.84	3.89	0.23	-1.24	1.69
198011	2.60	15.67	6.70	8.86	7.66
198012	-0.32	-6.32	-0.62	4.59	0.03
198101	0.33	-5.98	-4.26	-1.61	-3.23
198102	3.72	1.35	0.99	1.85	1.72
198103	8.61	1.82	3.81	5.90	8.41
198104	1.93	-3.98	2.00	3.03	0.87
198105	2.73	-1.47	5.14	3.44	2.83
198106	-1.78	1.81	-5.19	-5.58	-1.37
198107	-2.13	2.60	-2.45	-3.90	-2.70
198108	-6.00	-5.65	-5.15	-7.73	-5.52
198109	-2.84	-9.07	-1.58	-1.28	-5.42
198110	4.04	6.51	5.50	7.95	7.17
198111	2.67	5.69	1.94	3.92	5.07
198112	-1.27	-3.81	-0.55	-0.73	-3.79
198201	-0.08	-4.95	1.99	1.44	-3.18
198202	-1.80	-6.90	-5.43	-1.79	-3.91
198203	3.29	-1.79	-1.60	-2.56	-1.26
198204	5.70	3.74	4.67	7.41	3.72
198205	-2.79	-1.22	-3.95	-3.04	-5.44
198206	2.32	-3.91	-2.41	-0.75	-2.40
198207	-0.24	-4.41	1.42	0.79	-3.00
198208	11.46	11.97	12.13	12.37	11.34
198209	3.42	0.39	1.11	1.36	4.19
198210	14.15	8.58	14.02	8.20	15.86
198211	7.88	1.07	9.20	5.20	7.79
198212	0.58	3.05	1.47	0.58	-1.51
198301	1.50	4.32	9.60	1.42	2.82
198302	5.16	2.03	2.37	2.84	4.57
198303	5.41	2.95	0.68	4.52	5.00
198304	8.25	6.99	6.82	5.05	8.28

---



---

198305	-0.74	1.98	1.59	-2.73	2.41
198306	6.07	2.79	4.45	6.92	1.70
198307	-3.27	-1.73	-5.28	-5.63	-3.61
198308	-2.24	2.86	-0.21	-1.04	-0.87
198309	3.75	0.45	2.17	1.29	1.56
198310	-0.56	-1.08	-6.48	-2.18	-4.13
198311	3.56	2.40	2.57	-3.06	4.74
198312	-1.55	-0.60	-0.18	-3.57	-0.94
198401	-3.81	1.89	-3.43	-0.59	-1.70
198402	-5.46	-2.40	-5.26	-2.01	-4.85
198403	1.10	1.43	0.00	-0.68	2.47
198404	0.66	1.32	0.30	2.31	-2.02
198405	-4.34	-4.54	-4.98	-6.49	-6.82
198406	5.48	0.77	4.81	3.84	2.31
198407	0.12	-3.18	-1.21	-3.79	-1.79
198408	9.47	11.71	12.18	10.43	11.19
198409	0.42	0.53	-2.38	-4.43	2.22
198410	0.86	-0.48	-0.57	1.64	0.72
198411	-1.73	-0.29	-2.94	-0.08	-0.34
198412	2.63	1.45	3.19	2.73	3.56
198501	9.15	6.46	10.84	8.34	9.86
198502	2.08	2.13	-0.33	3.58	2.11
198503	-0.04	0.53	-3.09	3.06	-0.14
198504	-1.78	0.87	-2.38	-1.80	1.48
198505	7.98	4.24	3.92	9.49	6.41
198506	2.01	1.38	0.71	2.30	2.95
198507	-1.80	0.28	1.67	-0.43	-0.24
198508	-0.62	0.32	-1.66	-0.82	-0.53
198509	-2.64	-3.58	-4.58	-3.92	-4.98
198510	4.02	4.72	3.33	3.21	6.40
198511	8.67	4.87	8.30	9.74	7.44
198512	5.68	2.71	7.67	3.52	4.43
198601	1.78	0.07	-1.29	1.08	3.54
198602	9.70	7.12	5.61	6.08	8.38
198603	8.20	4.36	0.97	12.08	5.80
198604	-0.68	-1.76	3.52	0.71	-2.60
198605	7.74	4.85	2.02	7.27	4.75
198606	3.50	0.79	-1.33	5.64	1.53
198607	-8.00	-3.74	-6.74	-5.38	-6.47
198608	3.41	8.98	6.94	4.00	6.84
198609	-9.25	-6.01	-7.84	-12.61	-8.91
198610	7.75	5.07	1.83	7.97	4.23
198611	2.14	2.10	3.69	1.33	-0.65
198612	-4.04	-1.97	-3.69	-1.24	-2.57
198701	14.52	12.86	12.94	13.16	11.22
198702	6.48	1.38	6.64	11.31	4.71
198703	2.36	4.07	2.29	0.13	-0.38
198704	-1.31	-1.82	2.52	-2.45	-4.12
198705	0.53	0.69	1.09	1.24	-0.04
198706	5.61	4.91	1.85	4.77	4.63
198707	6.13	4.18	2.51	5.77	3.62
198708	4.02	2.71	6.71	2.20	4.36
198709	-4.33	-1.24	-0.79	-2.56	-1.85
198710	-25.04	-20.79	-21.47	-20.47	-23.68

---

---

198711	-8.29	-5.91	-9.49	-9.31	-6.62
198712	8.07	7.18	8.98	5.35	5.49
198801	4.26	4.63	1.88	6.38	6.31
198802	7.53	4.32	5.11	4.20	4.37
198803	-2.06	-0.73	-4.42	-2.56	-1.34
198804	1.18	1.95	1.93	-1.99	-0.34
198805	-0.24	0.47	-0.01	-0.26	0.92
198806	5.72	3.98	7.03	2.68	6.07
198807	0.29	-0.52	-2.95	0.56	-0.56
198808	-2.25	-2.76	-5.96	-1.12	-0.87
198809	6.62	1.82	4.69	3.80	4.16
198810	5.00	1.40	1.31	1.20	0.00
198811	-1.67	-1.33	-1.70	-2.15	-2.22
198812	2.23	2.32	3.21	1.82	0.87
198901	6.30	6.14	7.68	6.80	6.79
198902	-1.85	-1.85	-2.67	-1.16	-0.46
198903	3.33	1.69	-0.55	4.95	3.52
198904	4.63	4.35	7.37	5.41	4.65
198905	4.72	3.82	4.16	3.42	4.32
198906	0.20	-0.94	-1.53	-2.77	0.81
198907	9.71	6.28	6.24	13.91	8.14
198908	0.95	2.98	1.58	0.39	3.26
198909	-1.90	-0.98	0.96	2.42	1.48
198910	-3.61	-2.03	-3.03	0.38	-4.87
198911	1.09	3.31	0.42	4.56	-0.07
198912	0.87	4.12	2.90	1.04	-1.64
199001	-7.41	-5.53	-8.25	-7.32	-8.96
199002	1.22	2.14	1.66	-2.07	2.53
199003	4.62	1.70	4.35	3.85	-0.44
199004	-1.44	-3.58	-2.71	0.30	-3.42
199005	9.85	6.97	10.74	12.79	9.13
199006	1.29	-0.69	-3.09	4.43	-1.65
199007	-2.45	2.42	-5.85	2.58	-3.57
199008	-10.13	-7.91	-11.18	-6.80	-11.34
199009	-6.57	-4.30	-2.20	-4.36	-10.05
199010	-0.28	-0.45	0.08	1.42	-6.42
199011	7.67	4.47	6.17	9.45	10.65
199012	3.46	1.89	2.74	2.76	5.50
199101	6.95	2.26	7.05	4.55	7.48
199102	9.45	6.35	4.93	9.87	9.76
199103	5.84	1.41	1.72	5.45	3.03
199104	0.02	0.87	-0.94	-1.13	1.36
199105	6.33	3.46	1.07	4.67	5.01
199106	-4.58	-3.68	-5.29	-4.19	-5.23
199107	4.91	3.81	3.90	8.50	4.73
199108	3.94	2.20	1.78	2.92	3.19
199109	-3.15	-0.56	-0.50	-0.37	-0.63
199110	-1.27	1.58	1.96	6.54	2.28
199111	-1.45	-4.33	-4.56	-2.48	-5.40
199112	13.41	7.56	9.54	16.54	12.74
199201	-0.57	-0.91	2.00	-5.45	2.03
199202	2.79	0.71	1.39	-2.67	3.10
199203	-1.18	-1.41	-3.21	-5.52	-2.15
199204	-0.17	4.37	2.71	-2.29	0.57

---

---

199205	0.50	1.02	-1.17	1.06	1.49
199206	-1.87	-2.49	-1.56	-4.75	-0.06
199207	3.79	4.40	4.17	5.74	3.13
199208	-0.92	-1.42	-2.77	-3.31	-3.46
199209	2.14	1.15	2.65	-4.97	3.42
199210	1.33	-0.47	0.79	3.33	2.95
199211	5.58	1.42	5.15	4.83	6.12
199212	0.65	1.86	2.76	-1.38	3.80
199301	0.69	1.16	3.11	-6.83	3.37
199302	-1.65	3.77	2.62	-8.95	0.36
199303	1.79	2.55	2.75	0.72	3.76
199304	-7.35	0.21	-3.30	1.27	-3.29
199305	3.80	1.63	6.45	3.59	1.63
199306	-1.06	0.42	2.09	-2.99	2.30
199307	-0.52	0.59	-0.88	-6.08	2.06
199308	3.56	3.71	5.81	3.01	3.47
199309	-0.81	-0.82	0.39	0.88	1.78
199310	5.70	0.67	2.01	5.96	-2.36
199311	0.65	-2.12	-3.03	0.97	-2.85
199312	0.41	2.54	1.25	2.33	2.53
199401	1.25	3.42	3.48	1.78	4.38
199402	-0.49	-2.11	-1.75	-5.61	-3.89
199403	-4.67	-4.12	-3.77	-6.75	-4.25
199404	0.54	1.43	-0.17	2.26	1.35
199405	-1.79	0.18	1.84	4.30	3.03
199406	-2.41	-2.72	-2.52	-3.43	-2.56
199407	2.16	4.42	3.47	1.05	2.67
199408	4.42	2.85	5.43	10.83	3.47
199409	-1.86	-1.97	-0.79	1.72	-4.29
199410	1.23	2.28	3.99	0.90	0.15
199411	-2.87	-4.24	-3.53	0.48	-5.19
199412	-0.03	2.14	1.77	0.54	1.44
199501	0.63	1.05	1.26	6.16	4.76
199502	3.11	4.35	4.52	2.24	4.84
199503	2.91	2.88	2.77	2.79	1.94
199504	0.35	2.73	5.55	3.02	1.71
199505	3.94	3.91	2.20	1.66	4.48
199506	2.88	0.45	7.58	4.51	2.17
199507	2.41	2.56	6.85	5.50	4.78
199508	-0.74	-0.28	1.54	1.03	3.79
199509	3.88	2.74	2.98	7.39	4.54
199510	-2.80	-1.35	0.94	1.07	-2.03
199511	5.32	5.16	0.54	4.98	6.16
199512	0.84	3.06	-1.15	5.98	1.11
199601	1.62	2.23	2.02	5.96	3.51
199602	3.44	0.26	3.00	-1.05	2.22
199603	2.69	3.00	-2.91	0.30	1.75
199604	2.37	1.31	7.43	-0.60	0.19
199605	4.93	1.71	2.55	3.93	1.57
199606	-0.17	0.84	-3.04	-0.22	-0.21
199607	-5.47	-4.47	-7.91	-6.27	-4.29
199608	2.50	3.11	2.48	4.30	3.91
199609	3.48	4.69	7.74	7.39	5.15
199610	-0.19	2.91	-1.00	-0.85	3.95

---

---

199611	4.53	5.39	10.03	6.59	7.49
199612	-1.70	-0.04	-0.98	-2.58	-1.87
199701	3.16	3.71	7.31	9.57	6.05
199702	3.07	-1.03	-4.66	0.88	2.59
199703	-3.57	-1.49	-6.26	-7.54	-5.83
199704	3.65	3.01	6.52	6.08	5.09
199705	6.06	7.10	9.15	7.04	6.18
199706	4.19	3.97	1.90	8.88	5.25
199707	5.69	6.65	12.10	2.11	9.21
199708	-3.78	-3.55	-1.68	-6.11	-4.83
199709	5.38	4.26	5.03	6.64	8.03
199710	-2.75	-3.98	-5.28	0.20	-2.71
199711	4.91	2.62	4.02	2.83	2.96
199712	2.11	0.73	-1.66	3.55	5.22
199801	-0.80	-1.62	5.24	5.68	-1.96
199802	8.21	6.38	7.79	5.49	8.31
199803	6.21	5.11	3.99	3.58	5.95
199804	-1.50	1.25	2.49	1.92	1.97
199805	2.43	-2.64	-5.48	-2.52	-2.99
199806	4.13	-0.30	7.02	6.18	3.28
199807	-3.19	-5.96	1.54	-0.25	-1.81
199808	-14.37	-10.87	-15.80	-12.36	-21.32
199809	1.32	4.77	13.57	12.03	2.76
199810	10.86	6.39	6.42	3.88	9.07
199811	7.74	2.45	9.19	6.20	6.11
199812	4.90	1.60	14.97	5.00	3.60
199901	0.26	-1.88	13.29	0.25	0.96
199902	-2.76	-2.51	-9.05	0.16	-0.01
199903	0.57	5.75	5.63	2.51	2.35
199904	2.68	10.45	3.77	-5.53	6.78
199905	-1.56	-1.72	-0.22	-2.03	-3.68
199906	4.24	1.76	9.99	4.51	3.08
199907	-4.18	-0.32	-1.71	-4.40	-5.96
199908	-4.74	0.29	1.73	3.72	-5.00
199909	-2.91	-3.33	0.87	-7.09	-4.49
199910	4.62	2.72	4.44	10.76	11.62
199911	1.52	-0.87	10.60	1.55	-2.41
199912	2.96	6.38	16.20	-5.58	1.39
200001	-7.87	-4.57	-4.80	7.64	-4.71
200002	-5.29	-4.76	13.24	-2.42	-7.23
200003	11.02	8.72	4.86	-0.12	14.41
200004	-2.25	1.22	-9.91	5.15	-3.12
200005	-0.56	1.28	-10.76	3.98	3.35
200006	-1.29	-2.42	11.07	11.58	-2.92
200007	0.03	-0.42	-5.60	-6.22	5.33
200008	-1.52	8.44	10.14	3.77	9.26
200009	2.29	-0.76	-13.03	3.72	0.30
200010	1.90	0.95	-6.18	2.47	-1.33
200011	-0.73	-2.21	-21.73	0.49	-6.03
200012	5.09	7.00	-7.31	3.53	7.13
200101	3.83	-2.78	15.76	-8.88	0.03
200102	-3.05	-1.58	-22.79	-0.58	-4.32
200103	-3.56	-3.89	-11.91	-8.61	-4.48
200104	4.25	8.52	14.08	4.18	6.06

---

---

200105	1.89	1.45	-2.83	3.06	3.63
200106	-1.61	-5.76	0.37	-2.72	-0.04
200107	2.80	-1.20	-5.81	2.27	-2.25
200108	-4.14	-2.05	-11.78	-3.10	-5.29
200109	-7.74	-9.58	-14.33	-0.63	-8.08
200110	1.42	3.74	7.76	1.26	-0.73
200111	7.47	2.80	13.30	5.06	7.68
200112	3.16	3.73	0.14	-2.78	3.54
200201	2.26	-0.80	-2.16	-2.46	-3.00
200202	1.64	3.74	-10.61	-0.48	-0.61
200203	3.11	6.71	4.83	0.56	5.29
200204	0.26	-2.16	-12.12	-7.63	-3.54
200205	-0.26	-1.68	-2.04	-2.31	-0.34
200206	-5.63	-2.85	-12.67	-9.68	-5.61
200207	-9.61	-10.23	-10.29	-2.67	-6.34
200208	1.91	0.03	-0.66	0.68	1.36
200209	-8.85	-8.72	-14.80	-5.89	-10.54
200210	4.82	2.92	20.25	5.75	6.35
200211	1.42	4.66	15.04	3.78	4.32
200212	-4.35	-1.33	-12.03	-4.15	-4.78
200301	-4.34	-3.48	-2.18	-0.57	-2.44
200302	-2.16	-1.27	-0.98	-1.85	-2.76
200303	1.22	1.72	-0.89	3.81	0.90
200304	7.61	4.47	9.81	4.34	11.76
200305	5.67	6.79	8.93	4.08	5.30
200306	2.69	0.09	0.75	4.11	0.95
200307	1.64	0.92	3.54	0.41	3.52
200308	4.47	4.38	4.80	-2.77	0.73
200309	-2.51	-2.13	-2.08	0.24	0.25
200310	7.77	5.54	7.92	0.73	6.31
200311	1.83	1.48	1.25	1.76	1.26
200312	0.95	8.45	3.40	5.66	4.38
200401	0.21	0.05	3.78	3.10	2.88
200402	4.91	2.74	-2.35	0.89	2.17
200403	0.03	0.02	-2.44	-3.95	-0.63
200404	-0.78	0.03	-3.84	3.54	-3.75
200405	-0.68	1.21	2.89	-0.43	1.86
200406	1.06	4.86	2.20	-0.50	1.40
200407	-4.81	-1.10	-6.75	-5.97	-2.32
200408	-0.58	0.89	-3.03	1.63	1.89
200409	0.89	3.93	2.83	-1.36	1.12
200410	2.47	0.14	4.64	-2.41	1.12
200411	4.30	6.65	5.30	0.65	4.73
200412	4.08	1.07	3.43	5.67	4.44
200501	-1.08	0.27	-5.69	-4.09	-2.19
200502	0.70	8.55	-0.21	2.43	0.14
200503	-0.90	-1.75	-1.88	-0.49	-2.38
200504	-4.11	-3.95	-3.95	3.93	-1.61
200505	5.03	2.45	6.20	1.50	3.28
200506	0.86	2.29	-1.17	-0.58	1.40
200507	4.63	5.45	5.38	3.74	2.39
200508	-3.37	1.53	-0.71	-0.26	-1.65
200509	-1.23	3.66	0.18	-1.87	1.20
200510	-0.01	-6.08	-2.10	-3.27	1.27

---

---

200511	2.74	2.91	5.69	1.60	4.90
200512	-0.41	1.16	-1.82	2.39	0.18
200601	1.58	7.44	3.76	2.18	1.58
200602	1.19	-2.53	-0.15	1.09	0.99
200603	2.04	2.29	2.68	-0.98	1.86
200604	-0.50	3.92	-0.58	-1.94	2.16
200605	-0.63	-2.61	-5.41	-2.20	-3.07
200606	0.40	1.02	-0.44	-0.13	-0.35
200607	-1.40	0.67	-2.38	4.10	-0.89
200608	2.45	0.03	6.09	2.25	1.71
200609	3.21	-0.77	3.66	1.51	3.22
200610	3.58	4.75	4.36	1.71	3.01
200611	-0.08	5.22	2.45	0.08	1.67
200612	1.47	-0.34	0.34	0.17	3.16
200701	2.72	1.12	2.34	3.50	1.06
200702	-0.94	0.37	-2.43	-2.83	-2.34
200703	1.29	3.56	1.26	-0.25	-0.18
200704	3.08	4.65	4.16	6.81	3.31
200705	2.70	5.07	4.62	1.14	3.22
200706	-1.30	-0.73	-0.02	-3.39	-2.70
200707	-4.96	-1.02	-1.78	-4.05	-5.27
200708	1.37	0.73	1.72	2.27	1.14
200709	1.29	6.00	3.57	3.53	2.68
200710	1.55	2.49	4.28	1.54	0.26
200711	-2.33	-2.78	-7.24	-0.02	-6.00
200712	-1.94	3.38	1.02	-3.99	-3.40
200801	-2.81	-8.11	-11.07	-4.60	-2.17
200802	-2.91	2.64	-3.58	-0.93	-7.82
200803	1.19	-1.00	0.63	-1.80	-1.96
200804	2.61	7.46	6.05	0.45	3.53
200805	2.07	3.78	5.32	1.63	-2.31
200806	-8.57	-2.96	-9.40	-3.03	-14.60
200807	1.54	-8.09	-1.15	6.75	4.12
200808	3.62	0.48	2.75	1.78	0.25
200809	-4.83	-12.94	-12.50	-5.95	-6.06
200810	-15.32	-17.90	-17.75	-11.03	-19.61
200811	-6.95	-3.39	-8.65	-7.35	-12.38
200812	3.10	-1.09	2.51	6.77	0.87
200901	-6.89	-5.26	-5.11	-2.18	-17.76
200902	-5.39	-12.71	-5.50	-9.95	-14.39
200903	8.67	5.12	10.46	7.08	12.88
200904	9.12	9.69	11.71	-0.95	16.05
200905	1.99	7.46	2.66	6.21	7.27
200906	0.30	-2.00	3.82	3.61	-1.93
200907	7.66	7.80	7.65	5.45	9.08
200908	2.44	1.67	1.99	2.17	7.69
200909	3.14	5.31	5.46	2.41	3.17
200910	-0.27	-0.90	-1.96	-3.74	-5.37
200911	4.90	5.35	5.20	8.21	5.65
200912	2.45	2.06	6.05	2.46	0.72
201001	-1.94	-4.04	-7.56	0.00	-0.59
201002	3.91	3.24	4.35	0.38	3.63
201003	6.34	4.73	6.89	3.64	8.08
201004	1.51	3.29	2.48	-2.17	1.82

---

```

201005  -5.75  -8.91  -7.36  -8.07  -8.72
201006  -6.58  -5.23  -5.63  -1.58  -6.46
201007   6.38   8.53   8.49   2.11   6.79
201008  -3.27  -3.83  -5.46  -1.62  -7.06
201009   9.79   8.85  11.37   9.04   8.49
201010   3.58   4.39   5.98   1.93   2.03
201011   2.79   2.50  -0.99  -3.33   0.53
201012   4.10   7.29   6.18   5.43   9.18
201101  -1.33   4.36   3.15  -0.59   2.09
201102   2.86   4.86   3.42   3.37   2.95
201103   1.80   1.74  -0.74   2.40  -1.06
201104   4.36   2.44   3.14   6.32   1.08
201105   0.91  -2.60  -1.18   2.00  -2.64
201106  -0.94  -1.32  -2.17  -1.86  -2.13
201107  -1.32  -2.07  -1.59  -3.57  -3.69
201108  -2.87  -6.76  -6.40  -3.31  -8.16
201109  -5.08  -9.99  -4.97  -4.07 -11.07
201110   9.37  13.66  10.79   5.54  13.61
201111   0.42   1.43  -1.44   1.47  -2.00
201112   1.12  -0.05  -0.45   3.43   1.38
];

% You could now save the matlab data object 'lab3.mat' using
% File --> Save Workspace as -->
% Or use the command:
% save lab3.mat
% If you want to clear the workspace of all variables use the command:
% clear
% You can load it again with:
% load lab3.mat;

rf=FFmat(:,5); % risk-free rate
ex_mark_ret=FFmat(:,2); % excess market return
cnsmr_ret=indmat(:,2); % return on consumer portfolio
cnsmr_ex_ret=cnsmr_ret-rf; % excess return
manuf_ret=indmat(:,3);manuf_ex_ret=manuf_ret-rf;
hitech_ret=indmat(:,4);hitech_ex_ret=hitech_ret-rf;
health_ret=indmat(:,5);health_ex_ret=health_ret-rf;
other_ret=indmat(:,6);other_ex_ret=other_ret-rf;
hml=FFmat(:,4);smb=FFmat(:,3);

```

high minus low (溢价)

SMB用于解释投资组合回报。这个因素也被称为“小企业效应”，或规模效应，其中规模基于公司的市值。

## (a) Plot of excess returns and summary stats

Plot all excess returns on the one plot with HML and SMB

```

figure;plot(ex_mark_ret);hold on;plot(cnsmr_ex_ret,'r');
plot(manuf_ex_ret,'m');plot(hitech_ex_ret,'g');
plot(health_ex_ret,'k');plot(other_ex_ret,'c');
plot(hml,'y');plot(smb,'b');
title('Market & Sector Excess returns - with HML & SMB');
legend('Mkt ex rtns','Cnsmr ex rtns','Manuf ex rtns','Hitech ex
rtns','Health ex rtns','Other ex rtns','HML','SMB');
xlim([1 length(ex_mark_ret)]);

```

---

```
% Note: If you select a plot you can openView-->Property Editor
% You can change the colours, line widths and other properties for
plot.
```

```
% Descriptive stats for each return series
```

```
[mean(ex_mark_ret) median(ex_mark_ret) std(ex_mark_ret)
 min(ex_mark_ret) max(ex_mark_ret) skewness(ex_mark_ret)
 kurtosis(ex_mark_ret);
mean(cnsmr_ex_ret) median(cnsmr_ex_ret) std(cnsmr_ex_ret)
 min(cnsmr_ex_ret) max(cnsmr_ex_ret) skewness(cnsmr_ex_ret)
 kurtosis(cnsmr_ex_ret);
mean(manuf_ex_ret) median(manuf_ex_ret) std(manuf_ex_ret)
 min(manuf_ex_ret) max(manuf_ex_ret) skewness(manuf_ex_ret)
 kurtosis(manuf_ex_ret);
mean(hitech_ex_ret) median(hitech_ex_ret) std(hitech_ex_ret)
 min(hitech_ex_ret) max(hitech_ex_ret) skewness(hitech_ex_ret)
 kurtosis(hitech_ex_ret);
mean(health_ex_ret) median(health_ex_ret) std(health_ex_ret)
 min(health_ex_ret) max(health_ex_ret) skewness(health_ex_ret)
 kurtosis(health_ex_ret);
mean(other_ex_ret) median(other_ex_ret) std(other_ex_ret)
 min(other_ex_ret) max(other_ex_ret) skewness(other_ex_ret)
 kurtosis(other_ex_ret);
mean(hml) median(hml) std(hml) min(hml) max(hml) skewness(hml)
 kurtosis(hml);
mean(smb) median(smb) std(smb) min(smb) max(smb) skewness(smb)
 kurtosis(smb)]
```

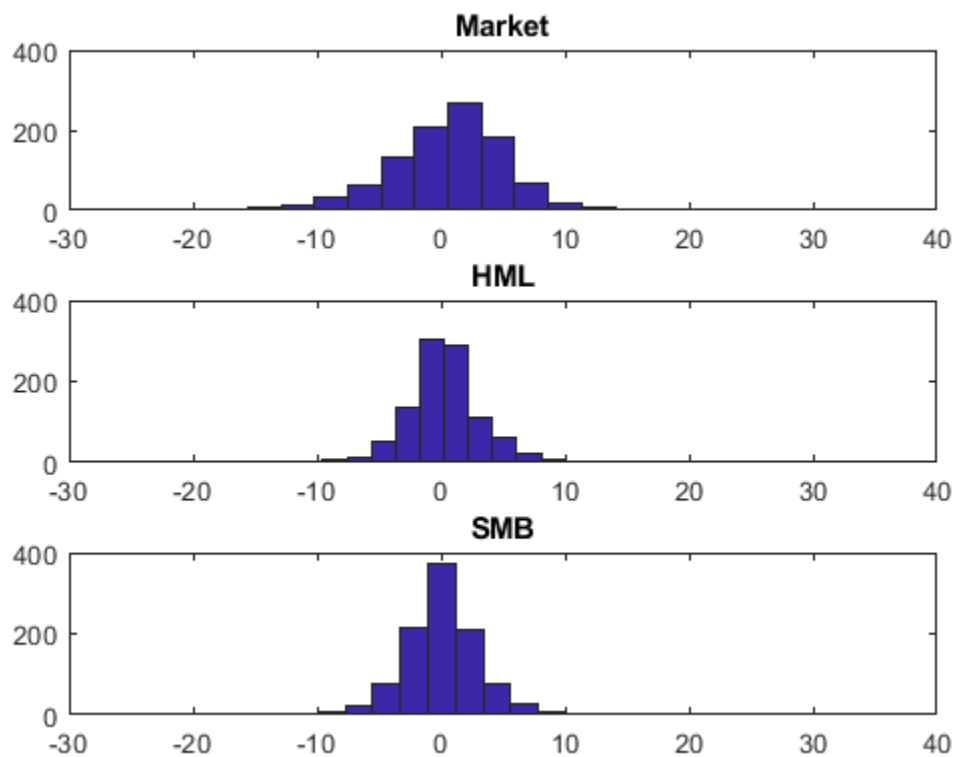
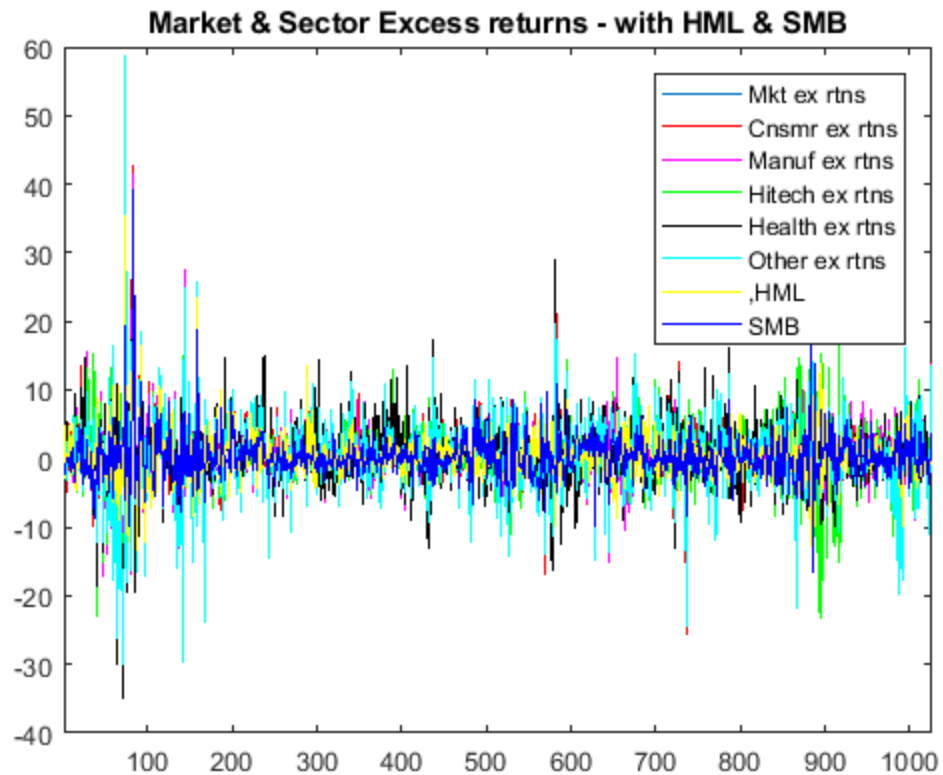
```
% you could also use histograms or boxplots here; e.g.:
```

```
figure;subplot(3,1,1);hist(ex_mark_ret,25);title('Market');xlim([-30
 40]);
subplot(3,1,2);hist(hml,25);title('HML');xlim([-30 40]);
subplot(3,1,3);hist(smb,25);title('SMB');xlim([-30 40]);
```

```
ans =
```

0.6175	0.9550	5.4572	-29.0400	38.2700	0.1685	10.3983
0.6940	0.9100	5.3856	-28.2000	42.5900	0.1153	10.1566
0.6820	0.9100	5.5966	-29.8400	41.5300	0.3579	11.0530
0.6257	0.8900	5.6908	-26.7700	33.8000	-0.1695	6.5058
0.7735	0.7350	5.7350	-34.8000	38.5600	0.1798	10.1047
0.5860	0.9350	6.5587	-30.0500	58.7100	0.8929	15.8557
0.3822	0.2250	3.5674	-13.4500	35.4800	1.8328	18.5977
0.2415	0.0600	3.3151	-16.6200	39.0400	2.1781	25.1477





---

## (b) Scatterplots and correlations between the industry excess returns and both SMB and HML

Scatterplots of industry excess returns against HML and SMB

```
% Consumer vs HML and Consumer vs SMB
figure;subplot(1,2,1);plot(hml,cnsmr_ex_ret,'+');
xlabel('HML'); % Add title for X-axis
ylabel('Consumer excess return'); % Add title for Y-axis
subplot(1,2,2);plot(smb,cnsmr_ex_ret,'+');
xlabel('SMB'); % Add title for X-axis
ylabel('Consumer excess return'); % Add title for Y-axis
% Manufacturing
figure;subplot(1,2,1);plot(hml,manuf_ex_ret,'+');
xlabel('HML');ylabel('Manufacturing excess return');
subplot(1,2,2);plot(smb,manuf_ex_ret,'+');
xlabel('SMB');ylabel('Manufacturing excess return');
% Hitech
figure;subplot(1,2,1);plot(hml,hitech_ex_ret,'+');
xlabel('HML');ylabel('Hitech excess return');
subplot(1,2,2);plot(smb,hitech_ex_ret,'+')
xlabel('SMB');ylabel('Hitech excess return');
% Health
figure;subplot(1,2,1);plot(hml,health_ex_ret,'+');
xlabel('HML');ylabel('Health excess return');
subplot(1,2,2);plot(smb,health_ex_ret,'+')
xlabel('SMB');ylabel('Health excess return');
% Other
figure;subplot(1,2,1);plot(hml,other_ex_ret,'+');
xlabel('HML');ylabel('Other excess return');
subplot(1,2,2);plot(smb,other_ex_ret,'+')
xlabel('SMB');ylabel('Other excess return');
% Calculate correlations between industry excess returns and HML
% The function corrcoef() calculates correlation coefficient, r, and
% reports the p-value for the test H0:r=0
[rch,pch]=corrcoef(hml,cnsmr_ex_ret);
[rmh,pmh]=corrcoef(hml,manuf_ex_ret);
[rhih,phi h]=corrcoef(hml,hitech_ex_ret);
[rheh,peh]=corrcoef(hml,health_ex_ret);
[roh,poh]=corrcoef(hml,other_ex_ret);

% Display correlations
[rch(2,1) rmh(2,1) rhih(2,1) rheh(2,1) roh(2,1); pch(2,1) pmh(2,1)
pheh(2,1) phi h(2,1) poh(2,1)]
% r and p here are given as 2 by 2 symmetric matrices. The (2,1) and
% (1,2) elements
% are the same and are the values we want.

% Again calculate correlations - now for smb
```

---

```

[rsc,pcs]=corrcoef(smb,cnsmr_ex_ret); % calculates correlation
    coefficient and reports p-value from test that rho=0
[rms,pms]=corrcoef(smb,manuf_ex_ret);
[rhis,phis]=corrcoef(smb,hitech_ex_ret);
[rhes,phes]=corrcoef(smb,health_ex_ret);
[ros,pos]=corrcoef(smb,other_ex_ret);

[rsc(2,1) rms(2,1) rhis(2,1) rhes(2,1) ros(2,1); pcs(2,1) pms(2,1)
    phes(2,1) phis(2,1) pos(2,1)]
% r and p here are given as 2 by 2 matrices. The (2,1) and (1,2)
    elements
% are the same and are the values we want.

```

```
ans =
```

```

    0.2088    0.3130    0.0125    0.0697    0.4041
    0.0000    0.0000    0.0257    0.6889    0.0000

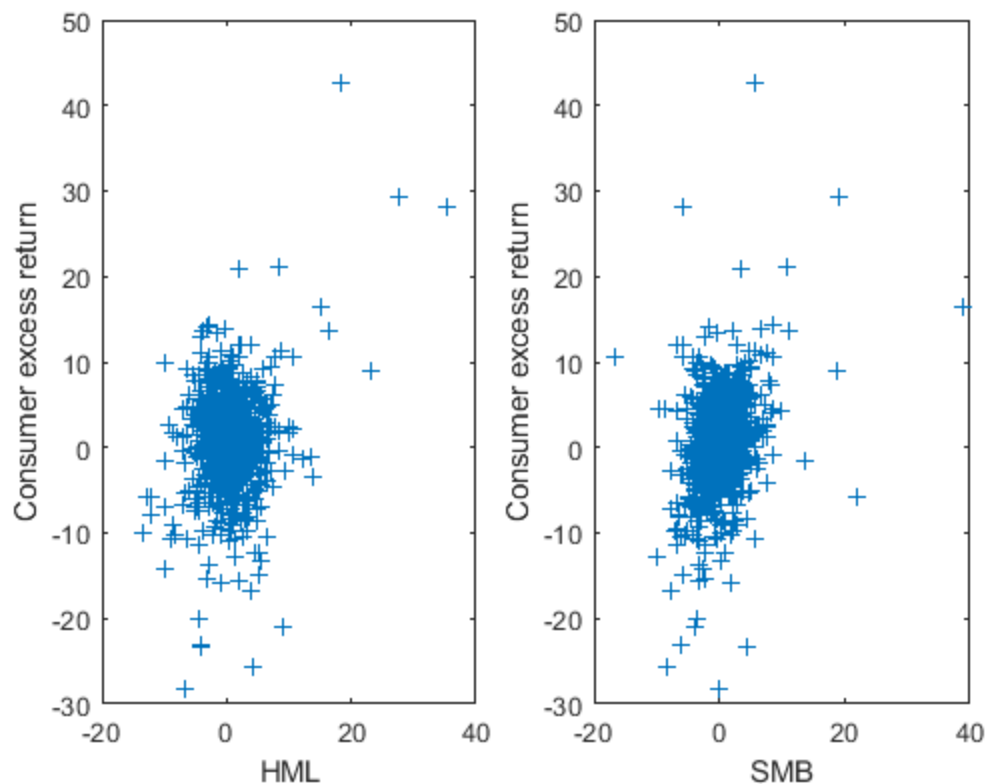
```

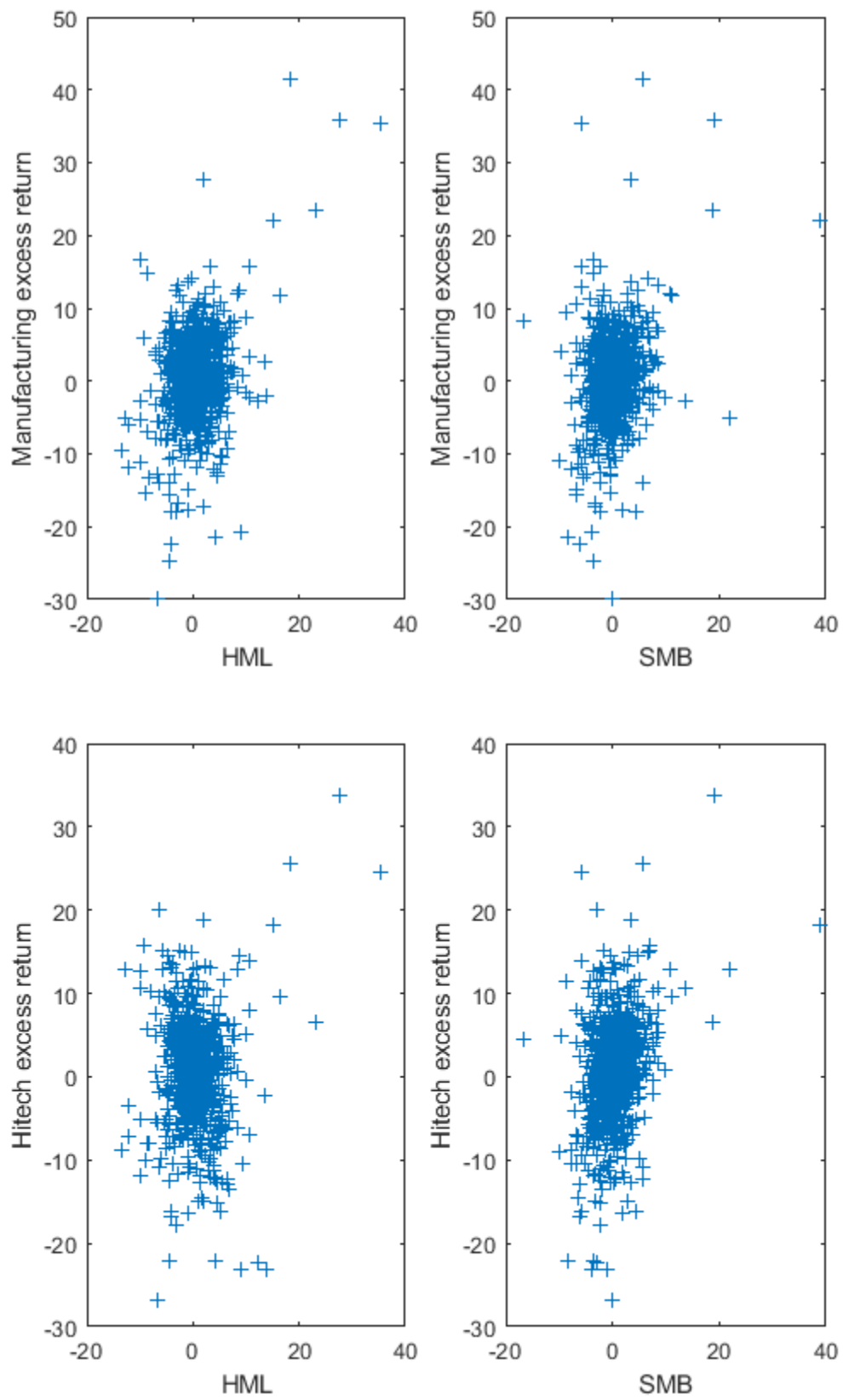
```
ans =
```

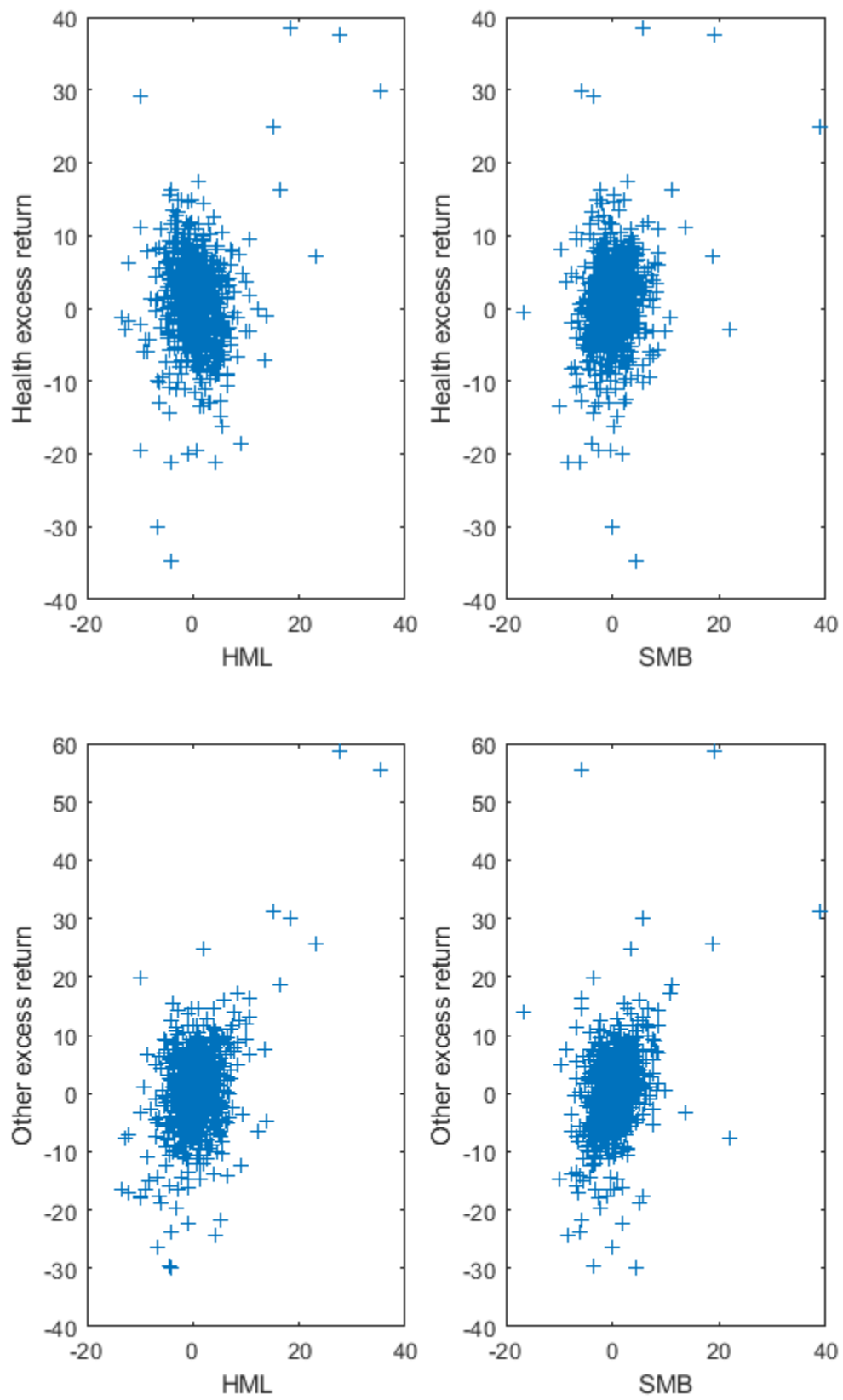
```

    0.3160    0.2697    0.3142    0.2139    0.3438
    0.0000    0.0000    0.0000    0.0000    0.0000

```







---

## (c) Fit Multi-Factor Model

```
xmat=[ones(length(ex_mark_ret),1) ex_mark_ret hml smb]; % creates X
matrix for regression with three factors
% the first column of X is a column of ones for the intercept, the
% remaining 3 columns are the excess market return, HML and SMB
[Bc,BINTc,Rc,RINTc,STATSc] = regress(cnsmr_ex_ret,xmat); % runs OLS
regression
% Bc contains slope coefficients, BINTc has 95% confidence intervals
Rc has the residuals,
% RINTc contains 95% confidence intervals for the standardised
residuals if these intervals do not contain zero then data point
might be an outlier
% STATSc contains in order the following stats: R^2 statistic, the F
statistic and its p value, and an estimate of the error variance

cnsmr_est=xmat*Bc; % estimates of average return from regression
[Bm,BINTm,Rm,RINTm,STATSm] = regress(manuf_ex_ret,xmat); % runs OLS
regression
manuf_est=xmat*Bm;
[Bhi,BINThi,Rhi,RINThi,STATShi] = regress(hitech_ex_ret,xmat); %
runs OLS regression
hitech_est=xmat*Bhi;
[Bhe,BINThe,Rhe,RINThe,STATShe] = regress(health_ex_ret,xmat); %
runs OLS regression
health_est=xmat*Bhe;
[Bo,BINTo,Ro,RINTo,STATSo] = regress(other_ex_ret,xmat); % runs OLS
regression
other_est=xmat*Bo;

% Print Coefficients and std errors
[Bc(1) BINTc(1,:) Bc(2) BINTc(2,:) Bc(3) BINTc(3,:) Bc(4) BINTc(4,:);
Bm(1) BINTm(1,:) Bm(2) BINTm(2,:) Bm(1) BINTm(1,:) Bm(2) BINTm(2,:);
Bhi(1) BINThi(1,:) Bhi(2) BINThi(2,:) Bhi(3) BINThi(3,:) Bhi(4)
BINThi(4,:);
Bhe(1) BINThe(1,:) Bhe(2) BINThe(2,:) Bhe(3) BINThe(3,:) Bhe(4)
BINThe(4,:);
Bo(1) BINTo(1,:) Bo(2) BINTo(2,:) Bo(3) BINTo(3,:) Bo(4) BINTo(4,:)]

ans =

Columns 1 through 7

    0.1244    0.0061    0.2426    0.9213    0.8980    0.9445   -0.0058
    0.0383   -0.0492    0.1259    0.9815    0.9643    0.9987    0.0383
    0.1321    0.0013    0.2629    0.9868    0.9611    1.0125   -0.3260
    0.3181    0.1113    0.5248    0.8917    0.8511    0.9323   -0.1888
   -0.2231   -0.3428   -0.1034    1.0549    1.0314    1.0785    0.3706

Columns 8 through 12

   -0.0395    0.0279    0.0124   -0.0251    0.0498
```

---

---

-0.0492	0.1259	0.9815	0.9643	0.9987
-0.3633	-0.2887	0.0367	-0.0047	0.0781
-0.2478	-0.1299	-0.0954	-0.1608	-0.0299
0.3364	0.4047	0.0663	0.0284	0.1042

## (e) Plots of regression lines and residuals to examine fit

```
% Consumer
% Plot of Consumer excess return vs Market excess return with
  regression
% line and predicted values
figure;subplot(1,2,1);plot(ex_mark_ret,cnsmr_ex_ret,'+');lsline;
hold on;plot(ex_mark_ret,cnsmr_est,'mo');
xlabel('Market excess return');ylabel('Consumer excess return');
% Plot of residuals for consumer model against excess market return
subplot(1,2,2);plot(ex_mark_ret,cnsmr_ex_ret-cnsmr_est,'+');
xlabel('Market excess return');ylabel('Consumer residual');

% Manufacturing
figure;subplot(1,2,1);plot(ex_mark_ret,manuf_ex_ret,'+');lsline;
hold on;plot(ex_mark_ret,manuf_est,'mo');
xlabel('Market excess return');ylabel('Manufacturing excess return');
subplot(1,2,2);plot(ex_mark_ret,manuf_ex_ret-manuf_est,'+');
xlabel('Market excess return');ylabel('Manufacturing residual');

% Hitech
figure;subplot(1,2,1);plot(ex_mark_ret,hitech_ex_ret,'+');lsline;
hold on;plot(ex_mark_ret,hitech_est,'mo');
xlabel('Market excess return');ylabel('Hitech excess return');
subplot(1,2,2);plot(ex_mark_ret,hitech_ex_ret-hitech_est,'+');
xlabel('Market excess return');ylabel('Hitech residual');

% Health
figure;subplot(1,2,1);plot(ex_mark_ret,health_ex_ret,'+');lsline;
hold on;plot(ex_mark_ret,health_est,'mo');
xlabel('Market excess return');ylabel('Health excess return');
subplot(1,2,2);plot(ex_mark_ret,health_ex_ret-health_est,'+');
xlabel('Market excess return');ylabel('Health residual');

% Other
figure;subplot(1,2,1);plot(ex_mark_ret,other_ex_ret,'+');lsline;
hold on;plot(ex_mark_ret,other_est,'mo');
xlabel('Market excess return');ylabel('Other excess return');
subplot(1,2,2);plot(ex_mark_ret,other_ex_ret-other_est,'+');
xlabel('Market excess return');ylabel('Other residual');

% Regression model stats for strength of fit: R-Squared, Adjusted R-
squared and standard error of regression
```

---

```

[STATSc(1) 1-STATSc(4)/var(cnsmr_ex_ret) sqrt(STATSc(4));STATSm(1) 1-
STATSm(4)/var(manuf_ex_ret) sqrt(STATSm(4));STATShi(1) 1-STATShi(4)/
var(hitech_ex_ret) sqrt(STATShi(4));
  STATShe(1) 1-STATShe(4)/var(health_ex_ret)
sqrt(STATShe(4));STATSo(1) 1-STATSo(4)/var(other_ex_ret)
sqrt(STATSo(4))] % shows R^2 and SER

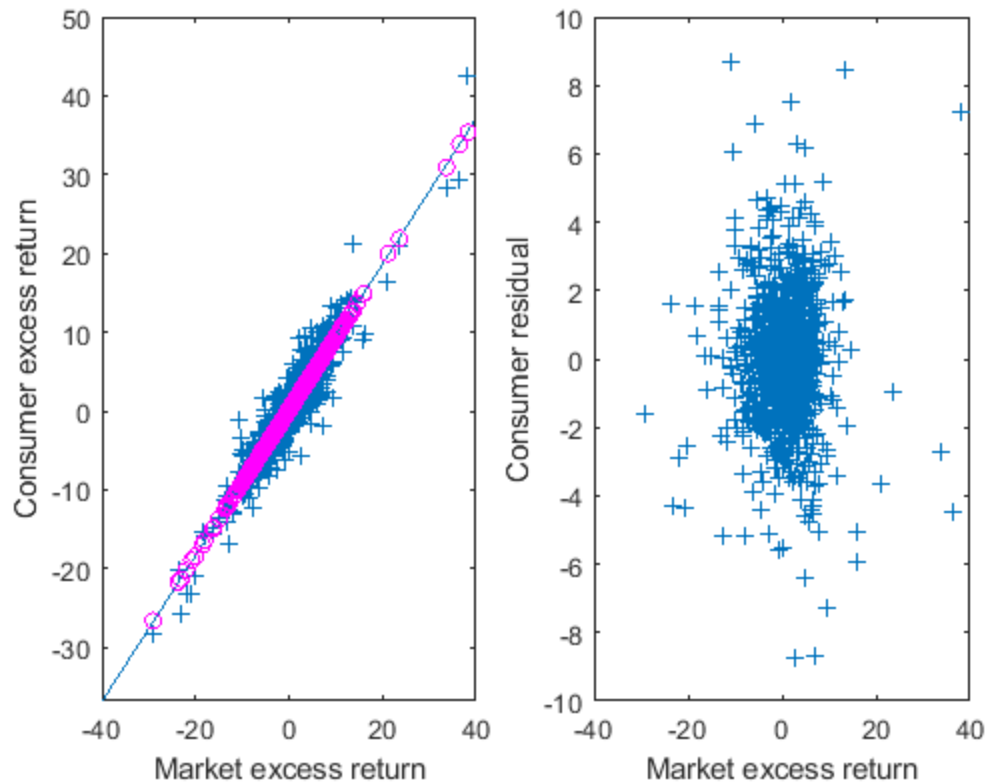
```

```
ans =
```

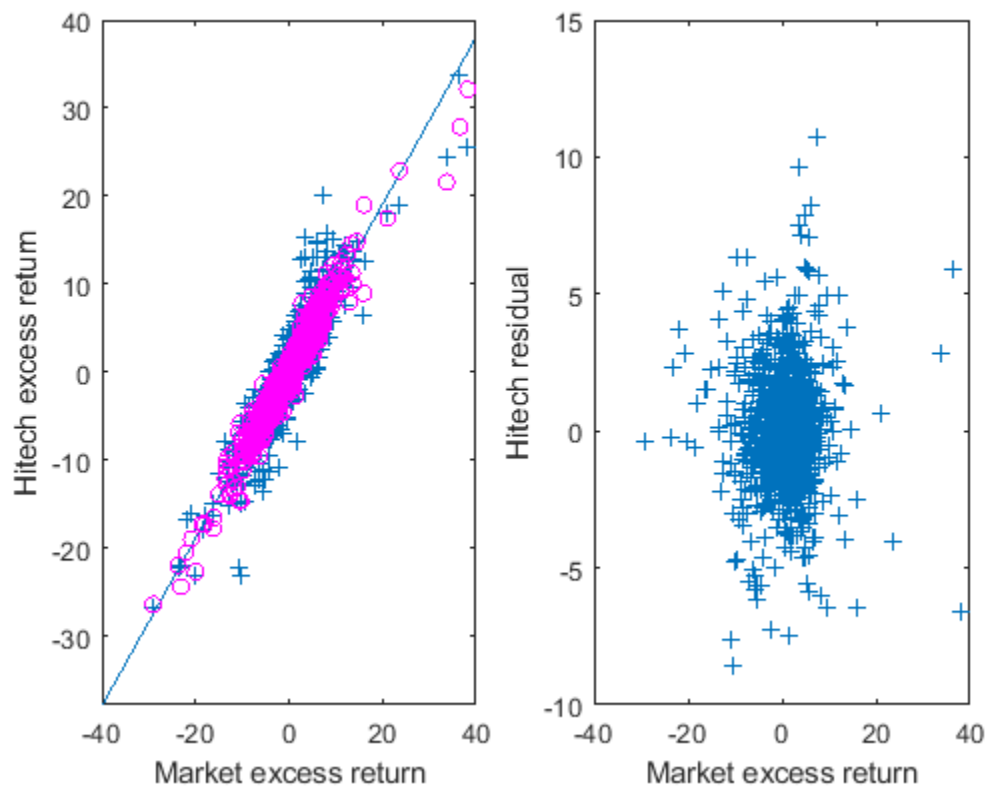
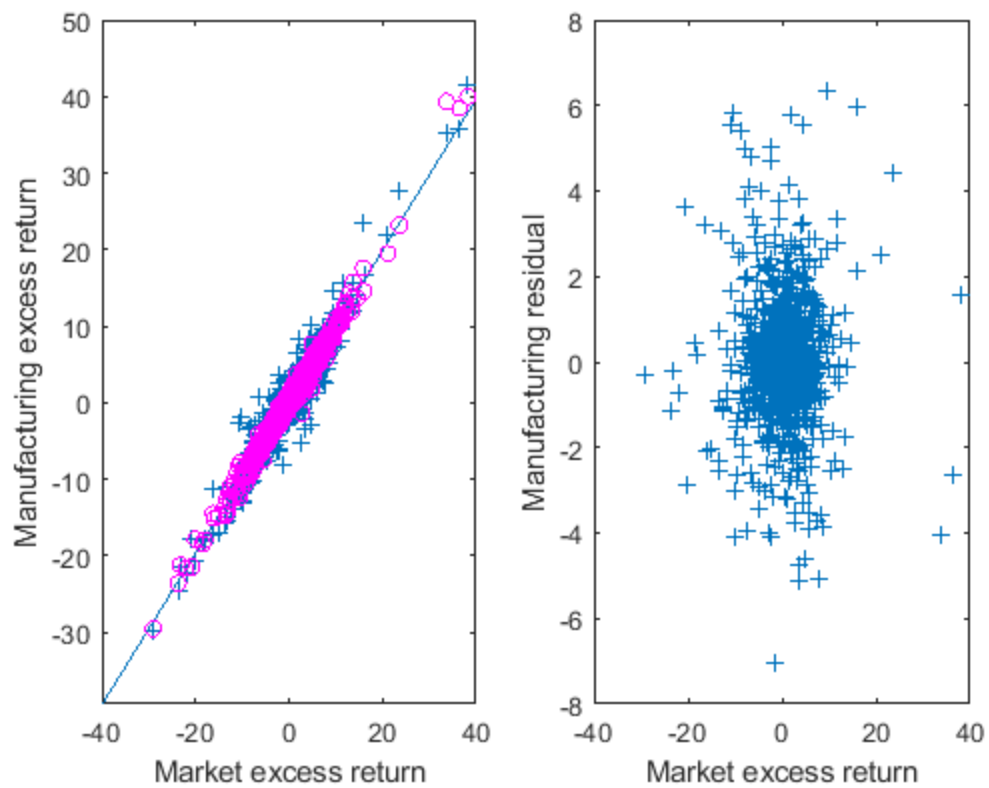
```

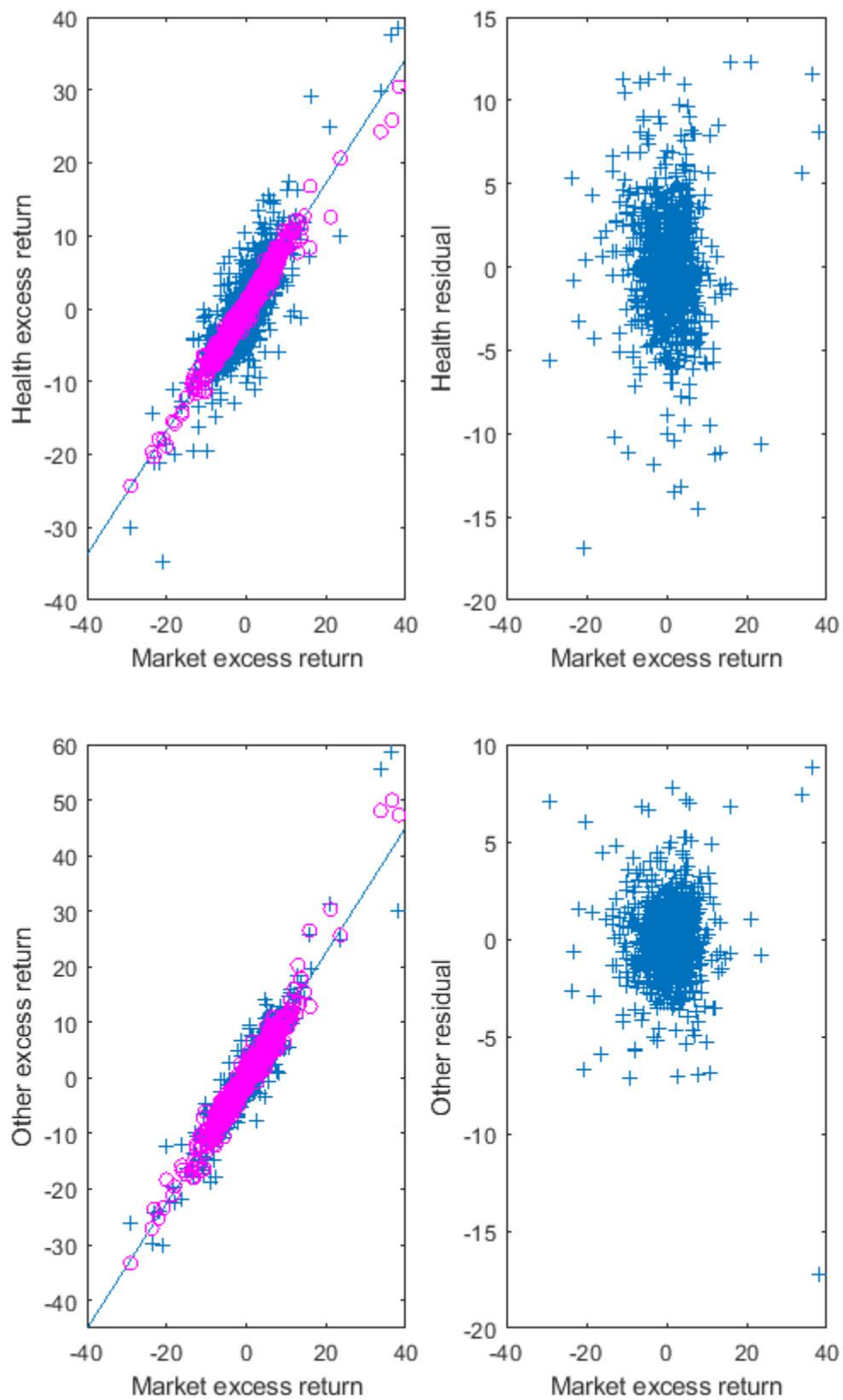
0.8746    0.8742    1.9101
0.9363    0.9361    1.4145
0.8625    0.8621    2.1134
0.6619    0.6609    3.3396
0.9133    0.9131    1.9336

```









---

*Published with MATLAB® R2017b*