

上市公司成長性與主要財務指標之間的相關性探討

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研究目的



文獻回顧

2011

鄒波, 杜勇, & 阮敏彥. 上市公司
成長性與財務指標的相關性研究



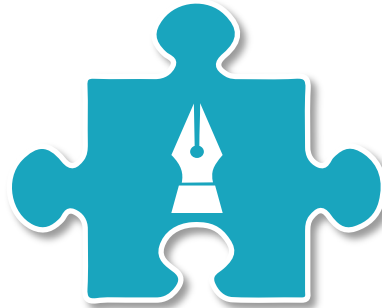
2011

孫鋌, 沈聖, & 應磊. 財務視角
下上市公司成長性的影響因
素實證研究—以 A 股上市信
息技術行業為例.

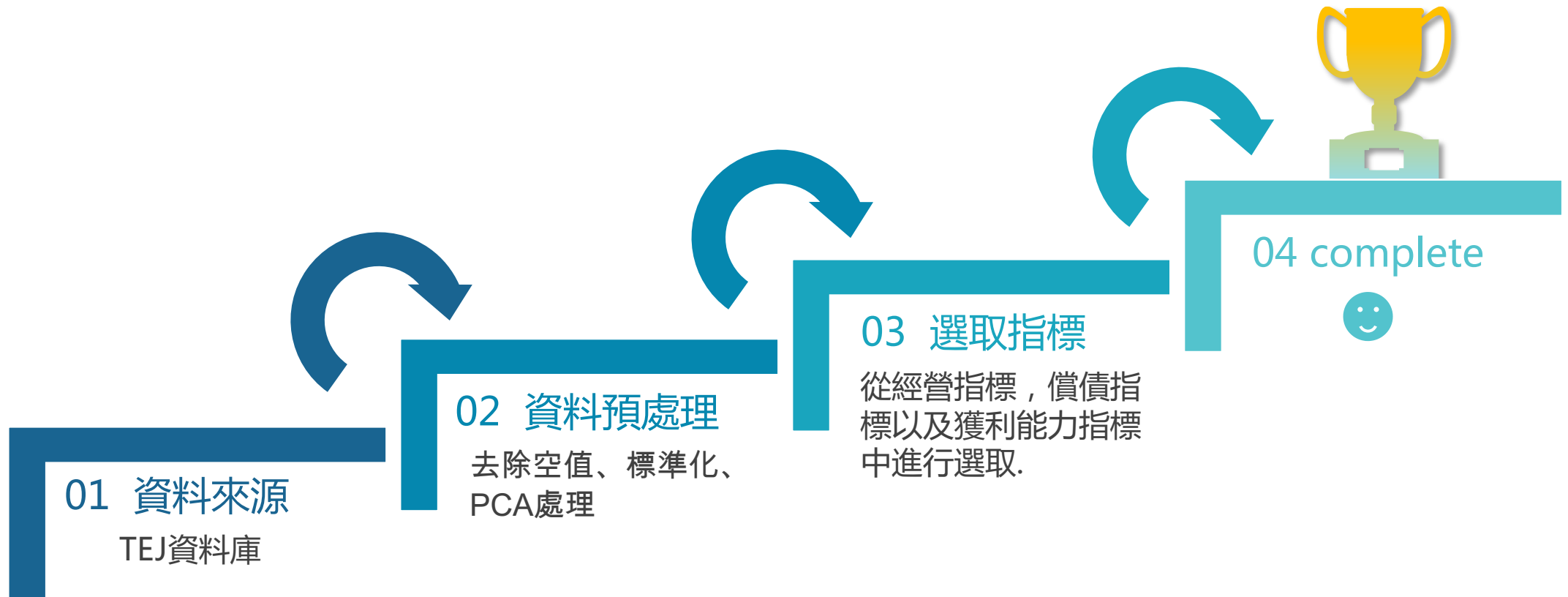


1999

吳世農, 李常青, & 余璋. 我國上市公
司成長性的判定分析和實證研究



資料來源及選取變數



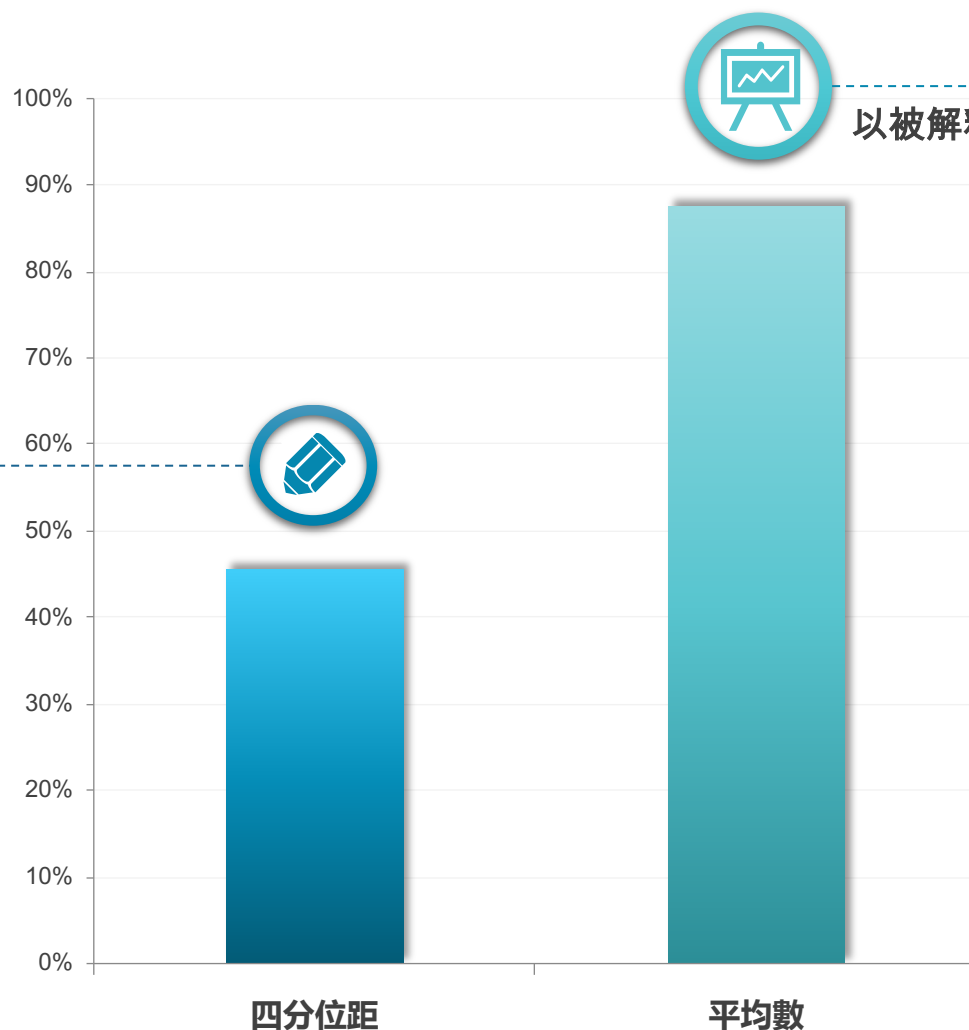
預測目標變數

四分位距

以敘述統計中，四分位距分別為Q1、Q2、Q3為基準，分為五類，解釋能力為45.6%

成長率平均數

以被解釋變數的成長率平均數為標準，分兩類計算，解釋能力為88.4%.



資料Data

	Unnamed: 0	ID	ROA	ROE	Operating gross profit margin	cash flow	Debt ratio	Total asset turnover	After-tax net profit growth rate	Growth_Class	rate
0	0	1101	6.74	11.93	32.87	25091819	43.82	0.30	9.96	1	0
1	1	1102	5.92	10.36	29.18	9337891	42.82	0.27	-15.60	1	0
2	2	1103	5.39	8.78	-6.98	-67742	38.45	0.05	30.48	2	0
3	3	1104	5.64	7.26	16.72	1067217	22.06	0.23	10.35	1	0
4	4	1108	5.17	8.84	15.82	306777	41.99	0.59	754.54	3	1
...
927	960	9944	1.14	2.00	26.88	-301460	42.01	0.46	325.81	3	1
928	961	9945	20.81	34.27	20.64	12668665	36.17	0.11	-3.24	1	0
929	962	9946	1.70	2.88	29.23	421406	39.88	0.13	-88.48	0	0
930	963	9955	-4.22	-7.42	-1.13	78353	44.85	1.03	-1310.51	0	0
931	964	9958	8.53	16.21	29.31	-2026657	45.74	0.45	69.45	2	0

資料共932筆 

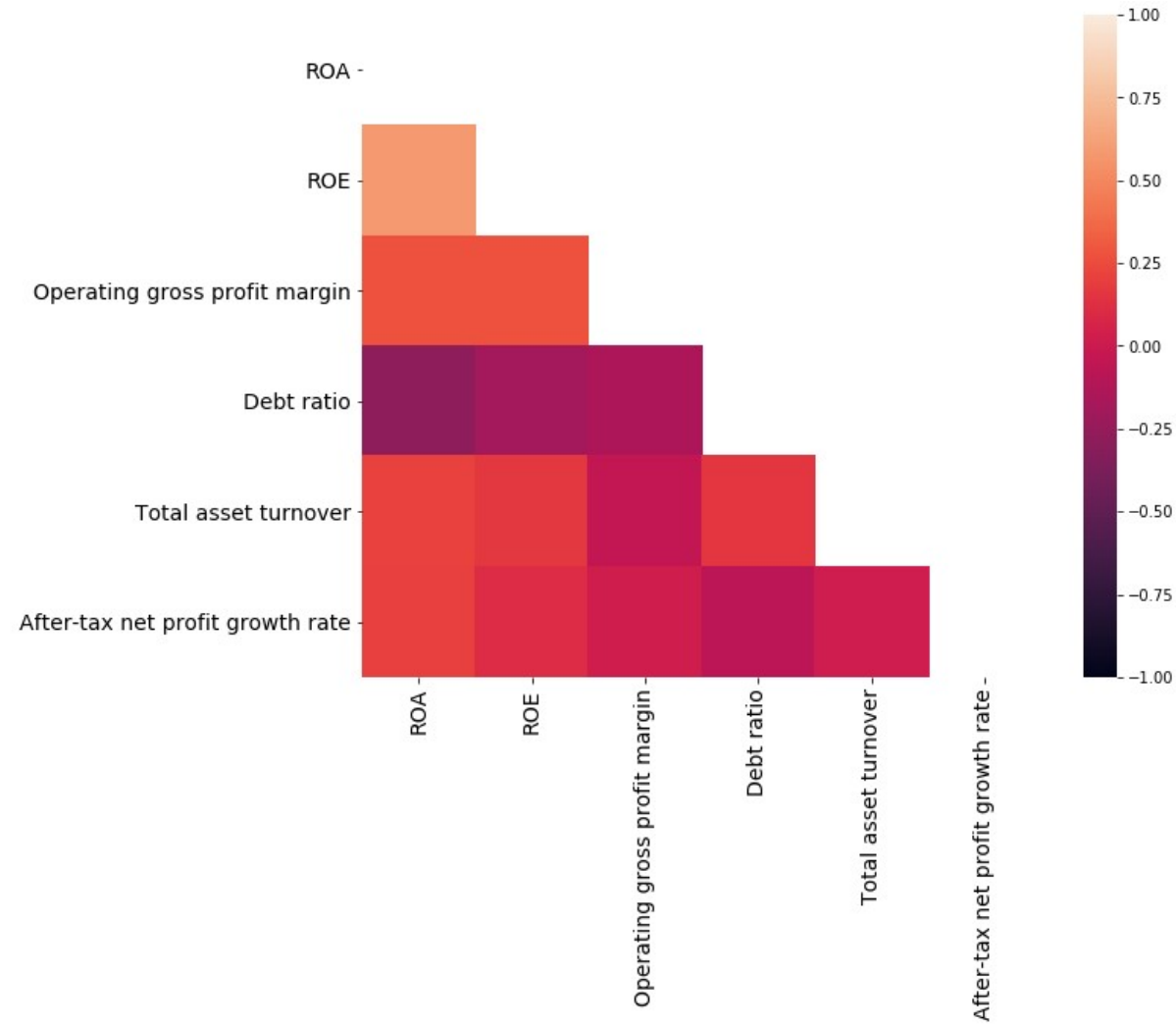
敘述統計

	ROA	ROE	Operating gross profit margin	Debt ratio	Total asset turnover	After-tax net profit growth rate
count	932.000000	932.000000	932.000000	932.000000	932.000000	932.000000
mean	4.600762	6.702532	21.755966	45.208273	0.724270	145.094925
std	9.040147	30.835995	33.829420	18.874423	0.536242	1558.179178
min	-55.100000	-783.010000	-625.740000	0.490000	0.000000	-13124.010000
25%	0.865000	1.710000	12.525000	32.320000	0.390000	-26.760000
50%	4.190000	7.940000	21.285000	45.160000	0.640000	11.580000
75%	7.940000	14.722500	31.760000	58.422500	0.930000	76.995000
max	76.710000	102.450000	99.800000	98.580000	5.130000	23853.740000

相關係數

	ROA	ROE	Operating gross profit margin	Debt ratio	Total asset turnover	After-tax net profit growth rate
ROA	1.000000	0.585149	0.274062	-0.287579	0.215145	0.203784
ROE	0.585149	1.000000	0.280664	-0.184276	0.166378	0.115637
Operating gross profit margin	0.274062	0.280664	1.000000	-0.143393	-0.042819	0.024602
Debt ratio	-0.287579	-0.184276	-0.143393	1.000000	0.157802	-0.074165
Total asset turnover	0.215145	0.166378	-0.042819	0.157802	1.000000	0.019814
After-tax net profit growth rate	0.203784	0.115637	0.024602	-0.074165	0.019814	1.000000

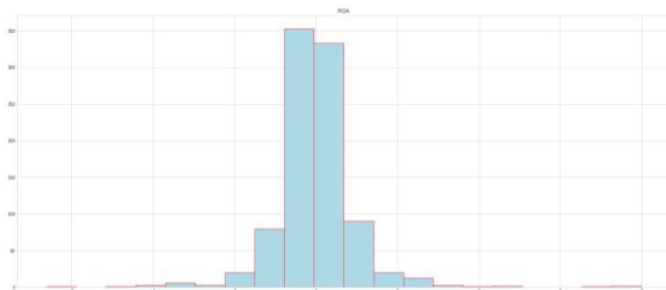
相關係數



資料標準化

	ROA	ROE	Operating gross profit margin	cash flow	Debt ratio	Total asset turnover	rate
0	0.236765	0.169616	0.328708	3.901708	-0.073593	-0.791617	0
1	0.146009	0.118674	0.219573	1.331257	-0.126603	-0.847592	0
2	0.087351	0.067408	-0.849893	-0.203389	-0.358257	-1.258075	0
3	0.115020	0.018088	-0.148943	-0.018207	-1.227095	-0.922225	0
4	0.063002	0.069355	-0.175562	-0.142282	-0.170601	-0.250526	1
...
927	-0.383027	-0.152583	0.151548	-0.241523	-0.169541	-0.493084	1
928	1.793991	0.894483	-0.033006	1.874715	-0.479121	-1.146125	0
929	-0.321048	-0.124030	0.221052	-0.123579	-0.282453	-1.108808	0
930	-0.976256	-0.458234	-0.676874	-0.179552	-0.018992	0.570440	0
931	0.434877	0.308489	0.223418	-0.523011	0.028187	-0.511742	0

EDA探索資料分析



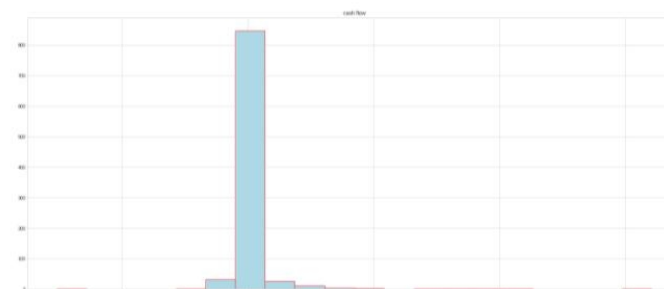
ROA



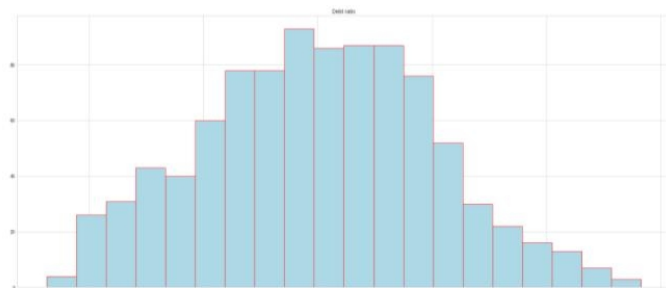
ROE



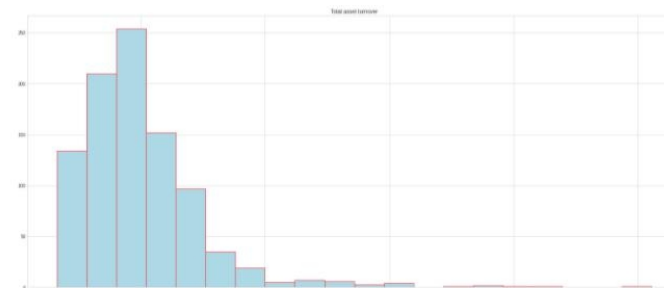
Operating growth profit margin



cash flow

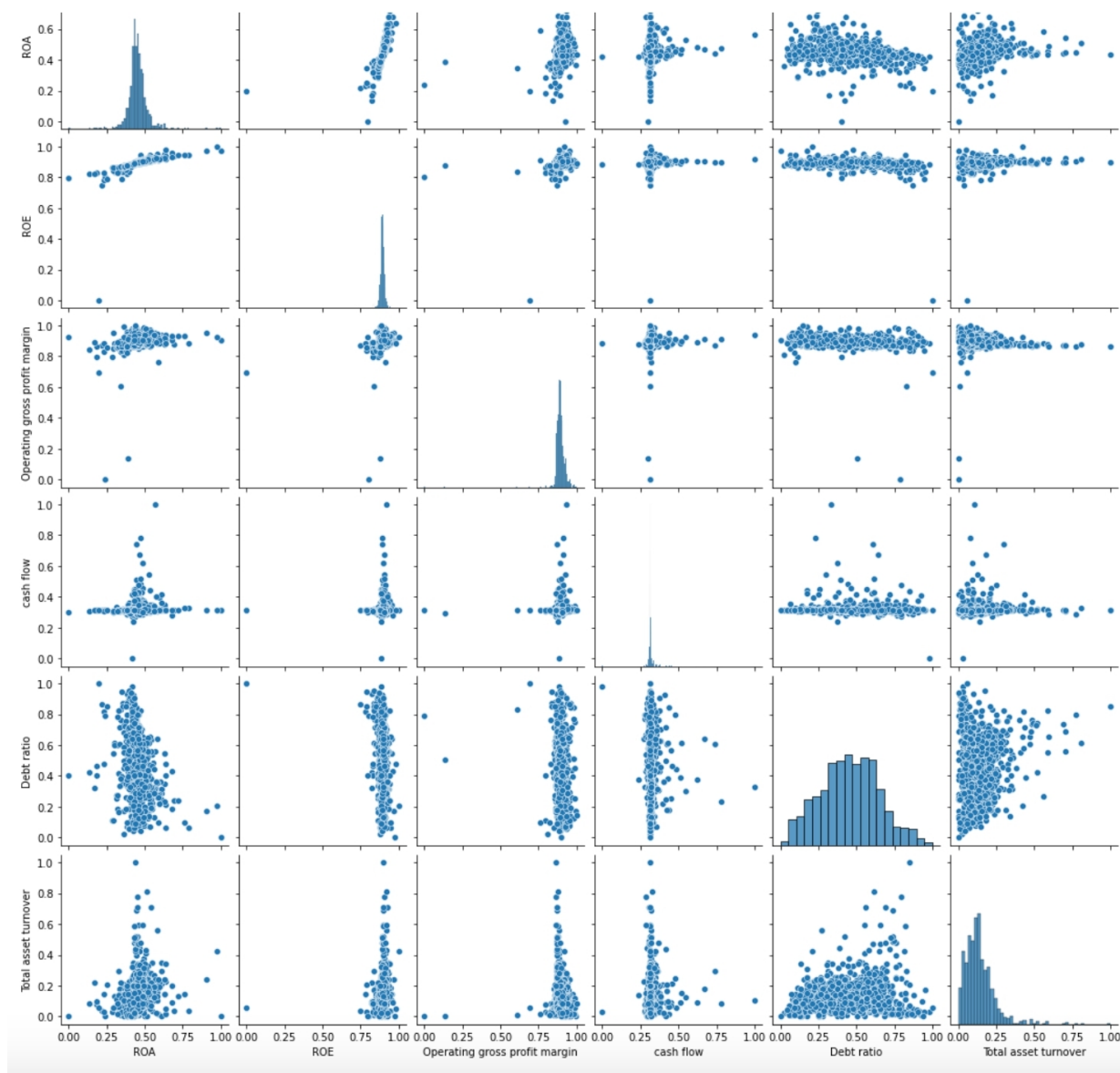


Debt ratio

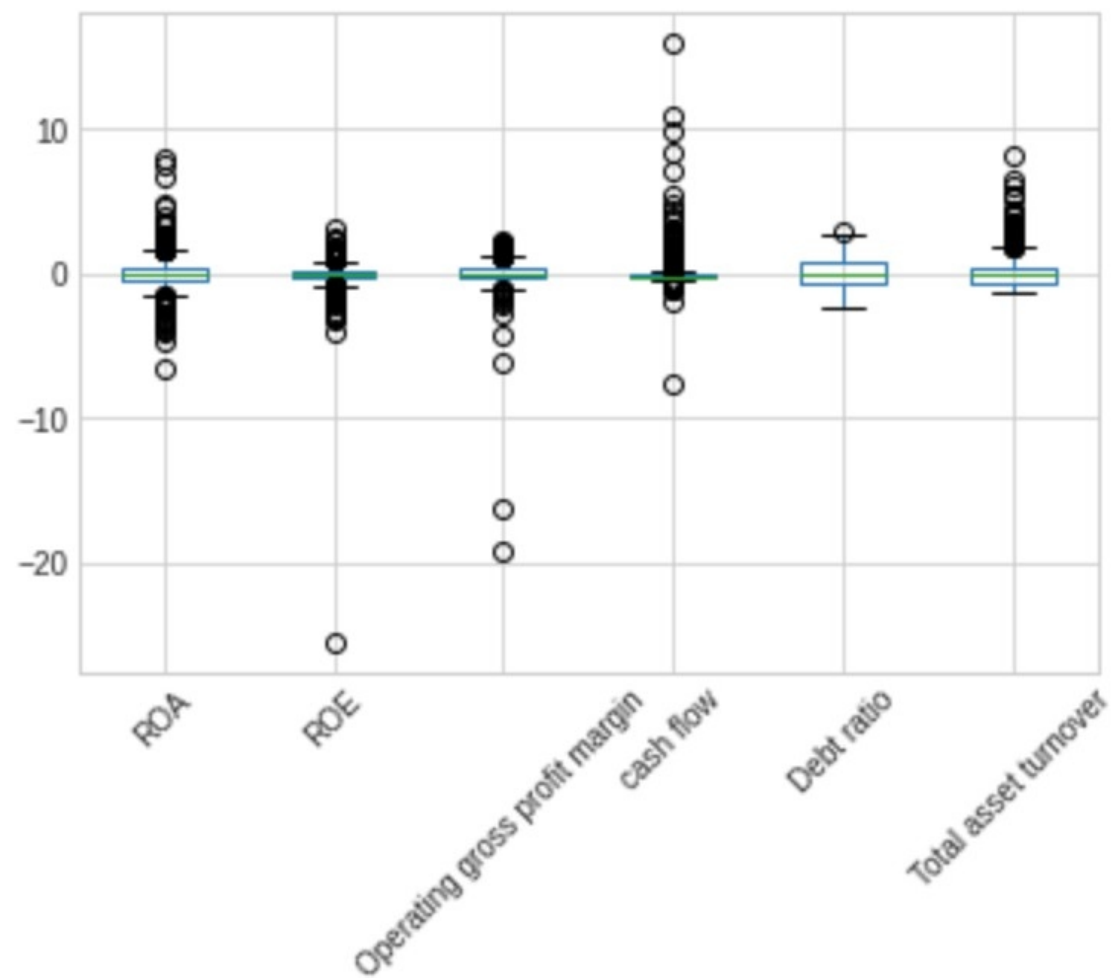


Total asset turnover

EDA探索資料分析

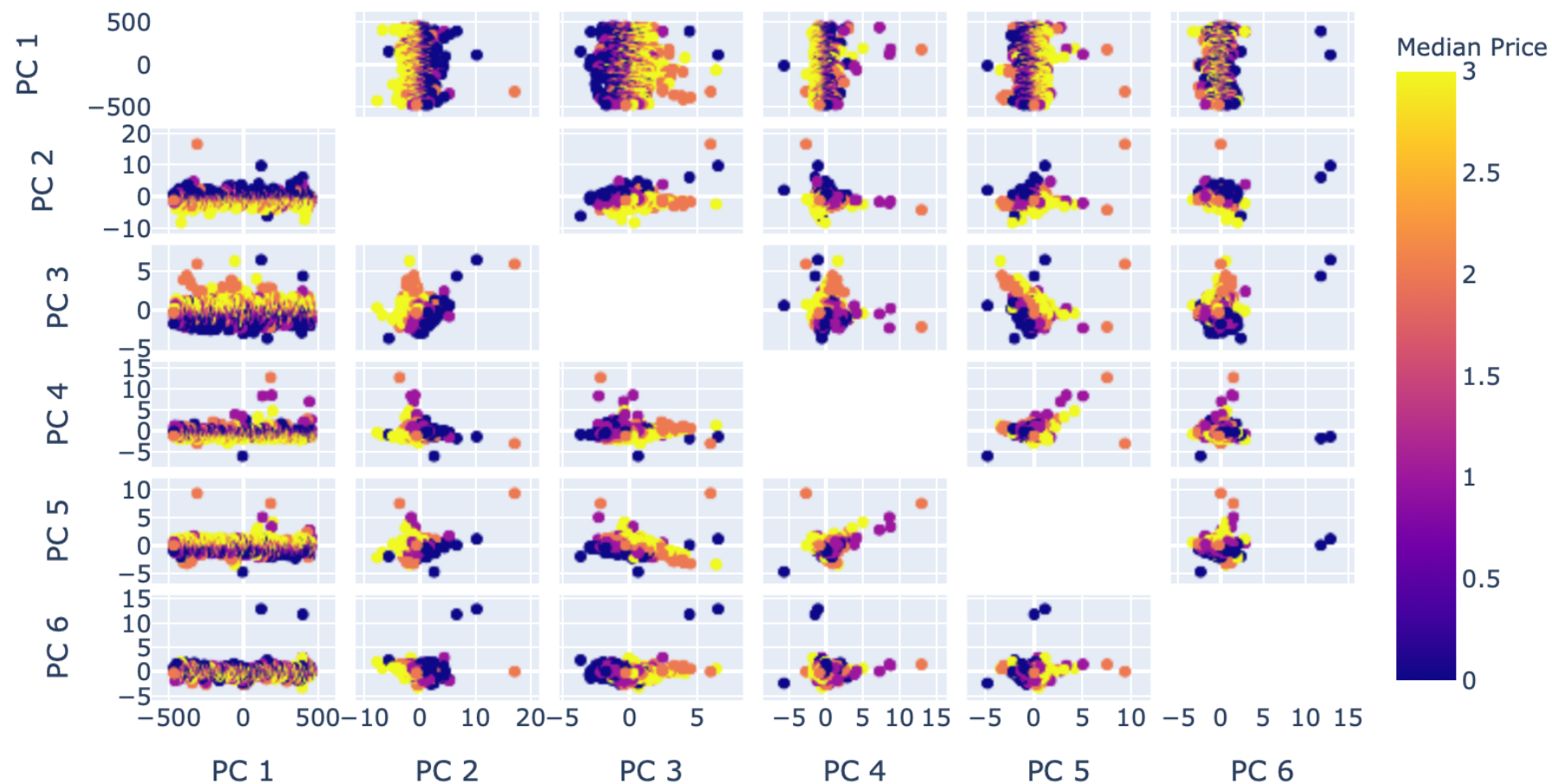


EDA探索資料分析

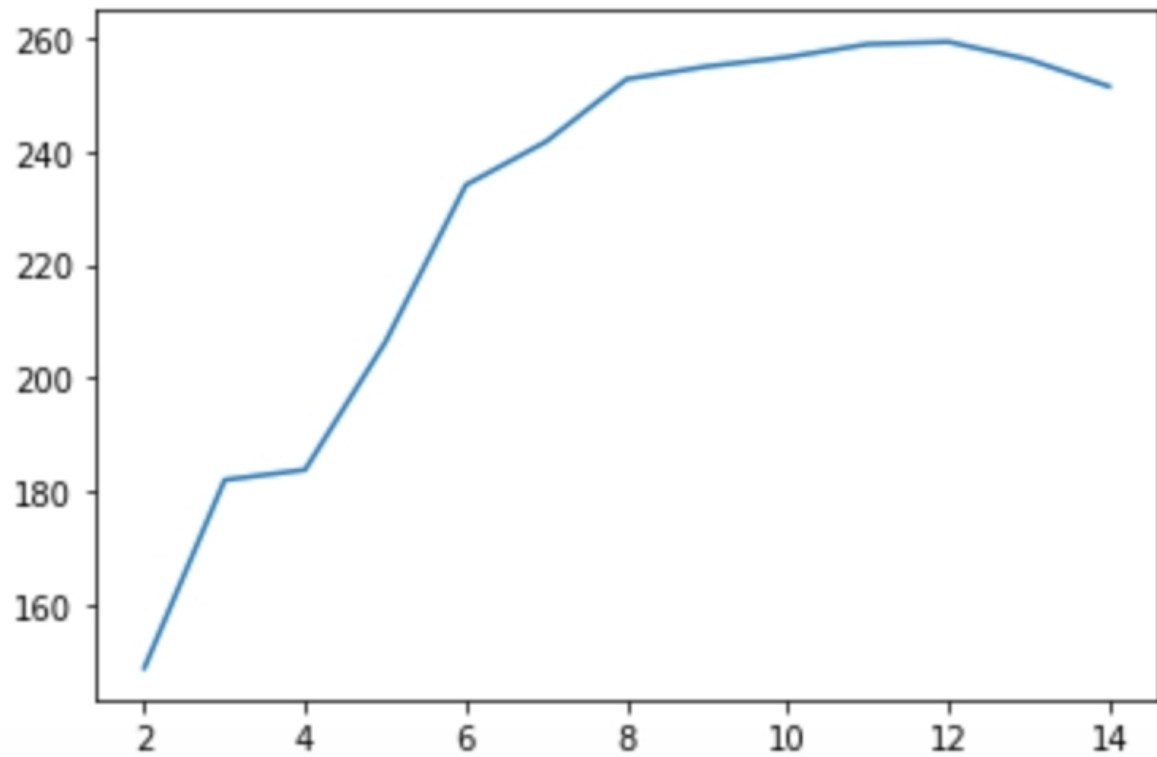


PCA主成分分析

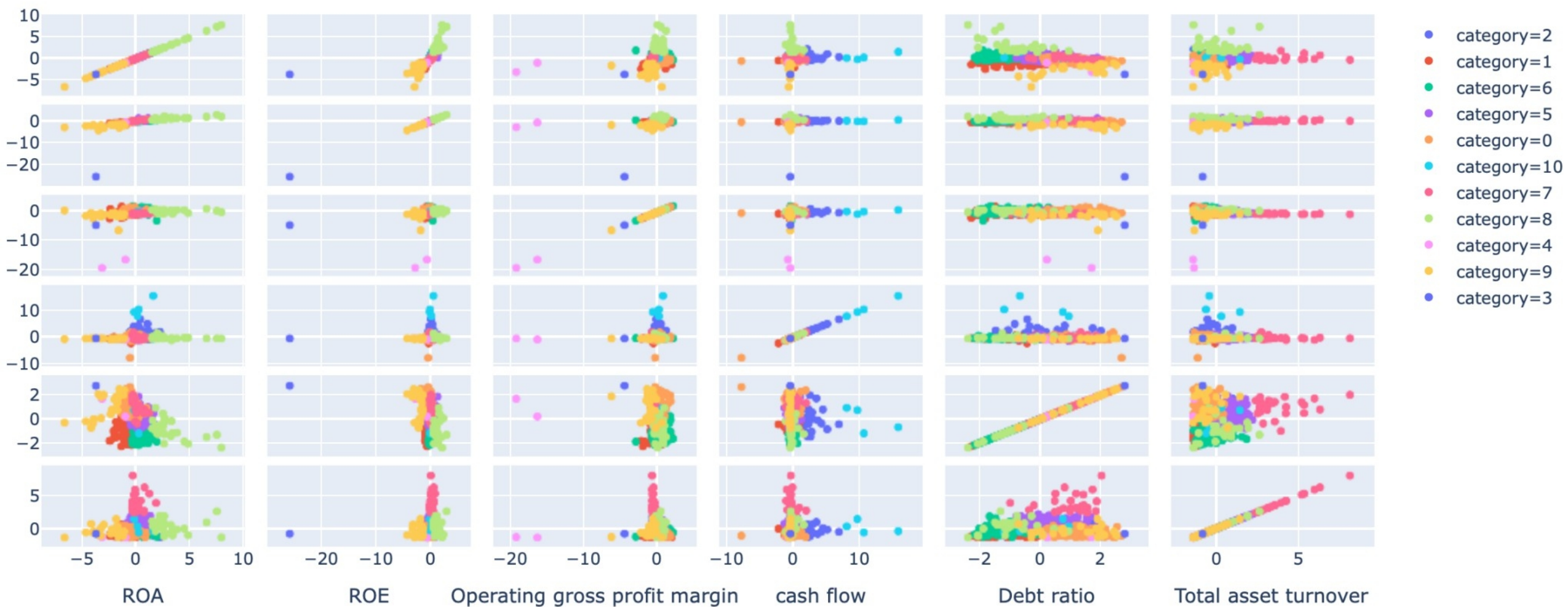
Total Explained Variance: 100.00%



K means 處理



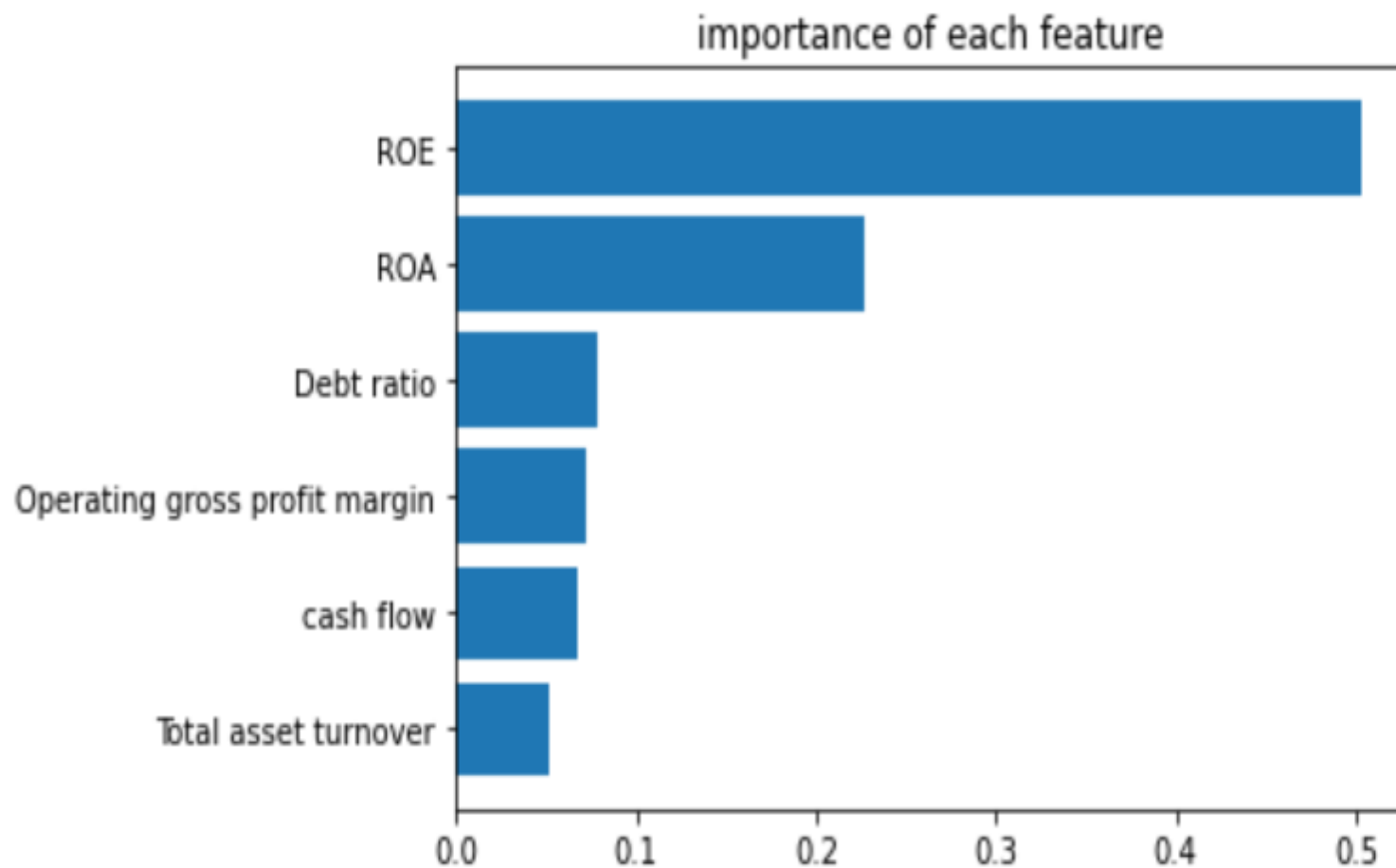
K means 處理



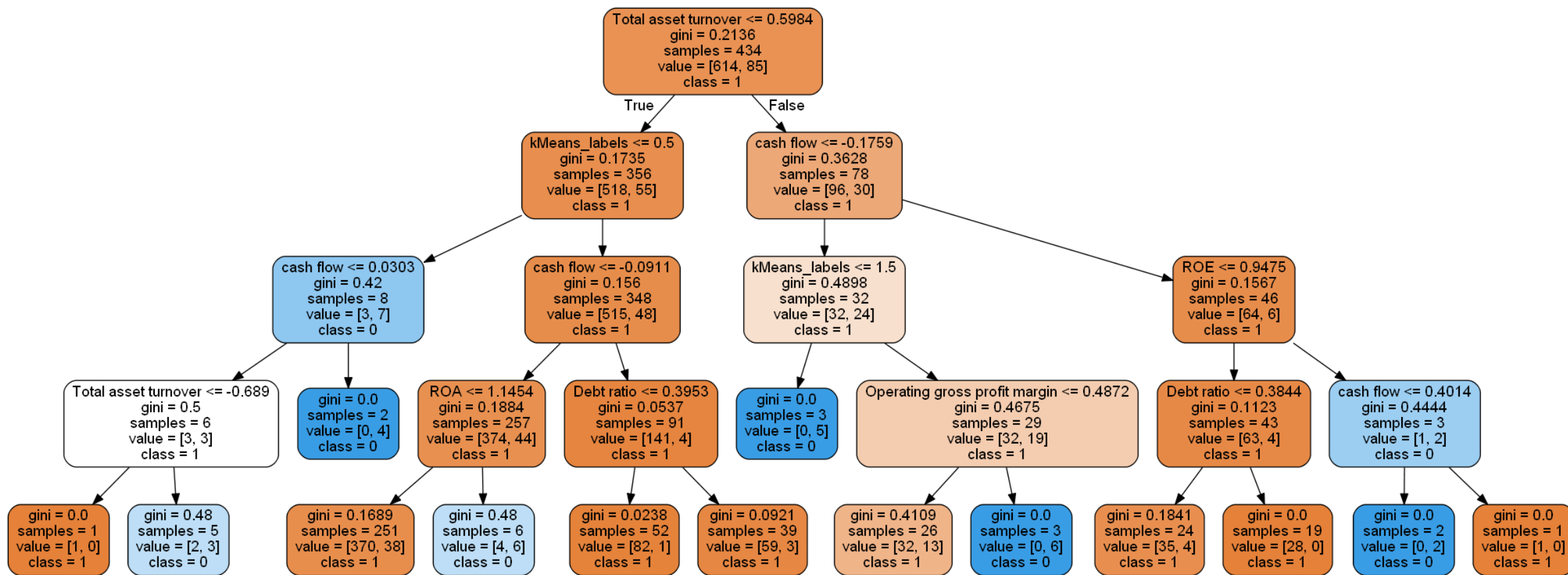
K means 分群特徵

	Unnamed: 0	ROA	ROE	Operating gross profit margin	cash flow	Debt ratio	Total asset turnover	Growth_Class	kMeans_labels	rate
0	0	0.236765	0.169616	0.328708	3.901708	-0.073593	-0.791617	1	4	0
1	1	0.146009	0.118674	0.219573	1.331257	-0.126603	-0.847592	1	4	0
2	2	0.087351	0.067408	-0.849893	-0.203389	-0.358257	-1.258075	2	8	0
3	3	0.115020	0.018088	-0.148943	-0.018207	-1.227095	-0.922225	1	8	0
4	4	0.063002	0.069355	-0.175562	-0.142282	-0.170601	-0.250526	3	9	1
...
927	927	-0.383027	-0.152583	0.151548	-0.241523	-0.169541	-0.493084	3	8	1
928	928	1.793991	0.894483	-0.033006	1.874715	-0.479121	-1.146125	1	4	0
929	929	-0.321048	-0.124030	0.221052	-0.123579	-0.282453	-1.108808	0	8	0
930	930	-0.976256	-0.458234	-0.676874	-0.179552	-0.018992	0.570440	0	3	0
931	931	0.434877	0.308489	0.223418	-0.523011	0.028187	-0.511742	2	9	0

隨機森林

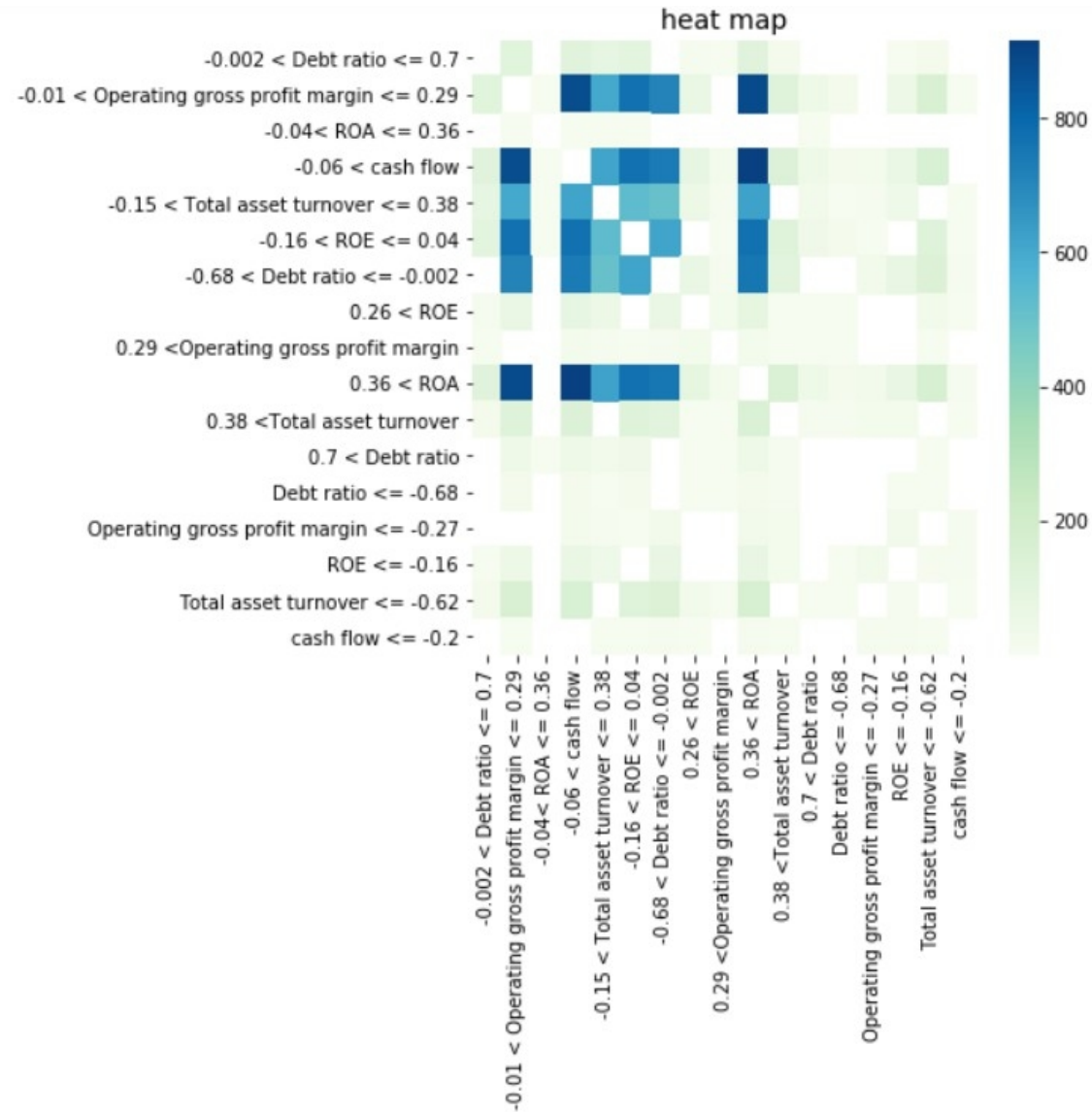


隨機森林

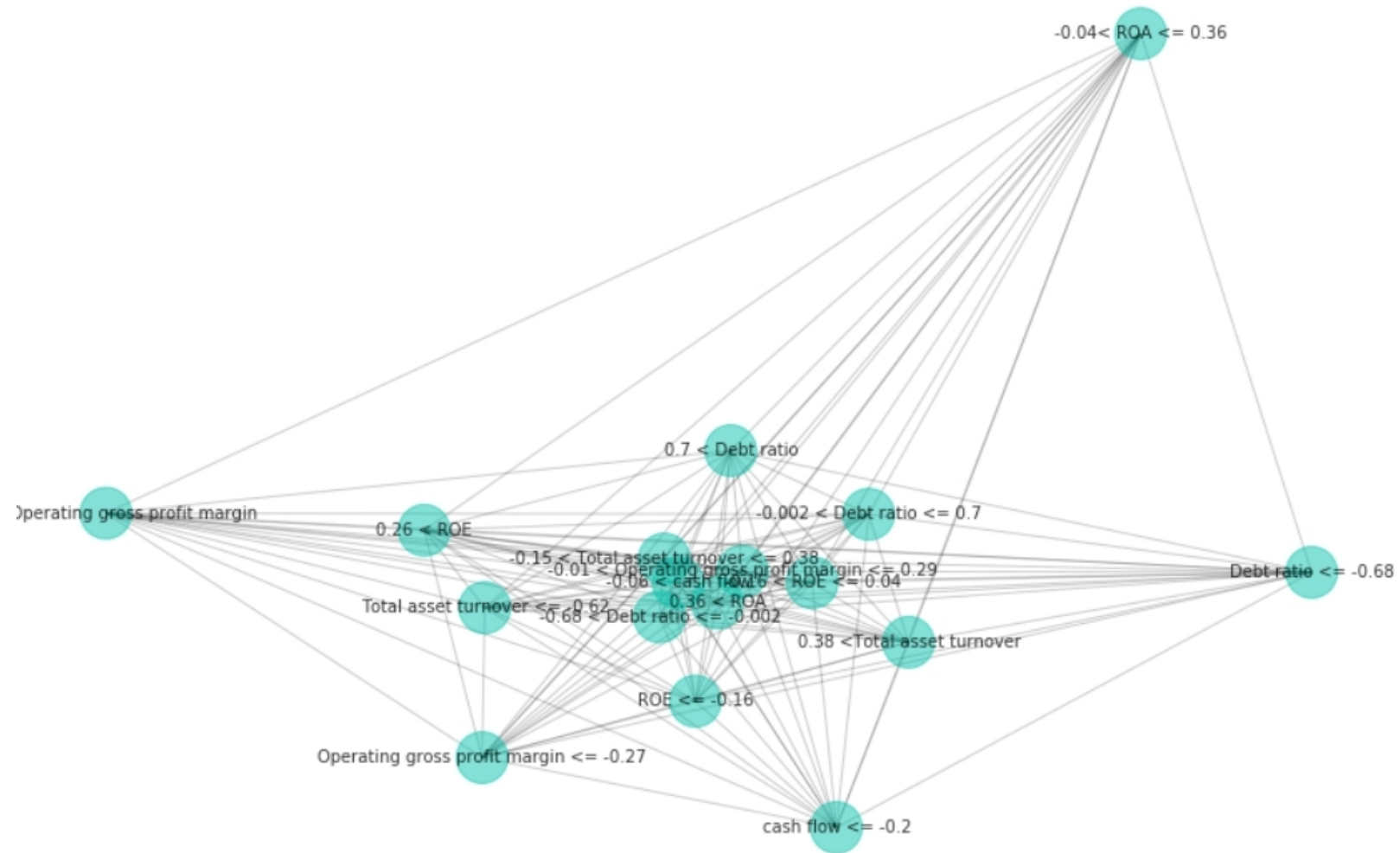


👍 準確率87%

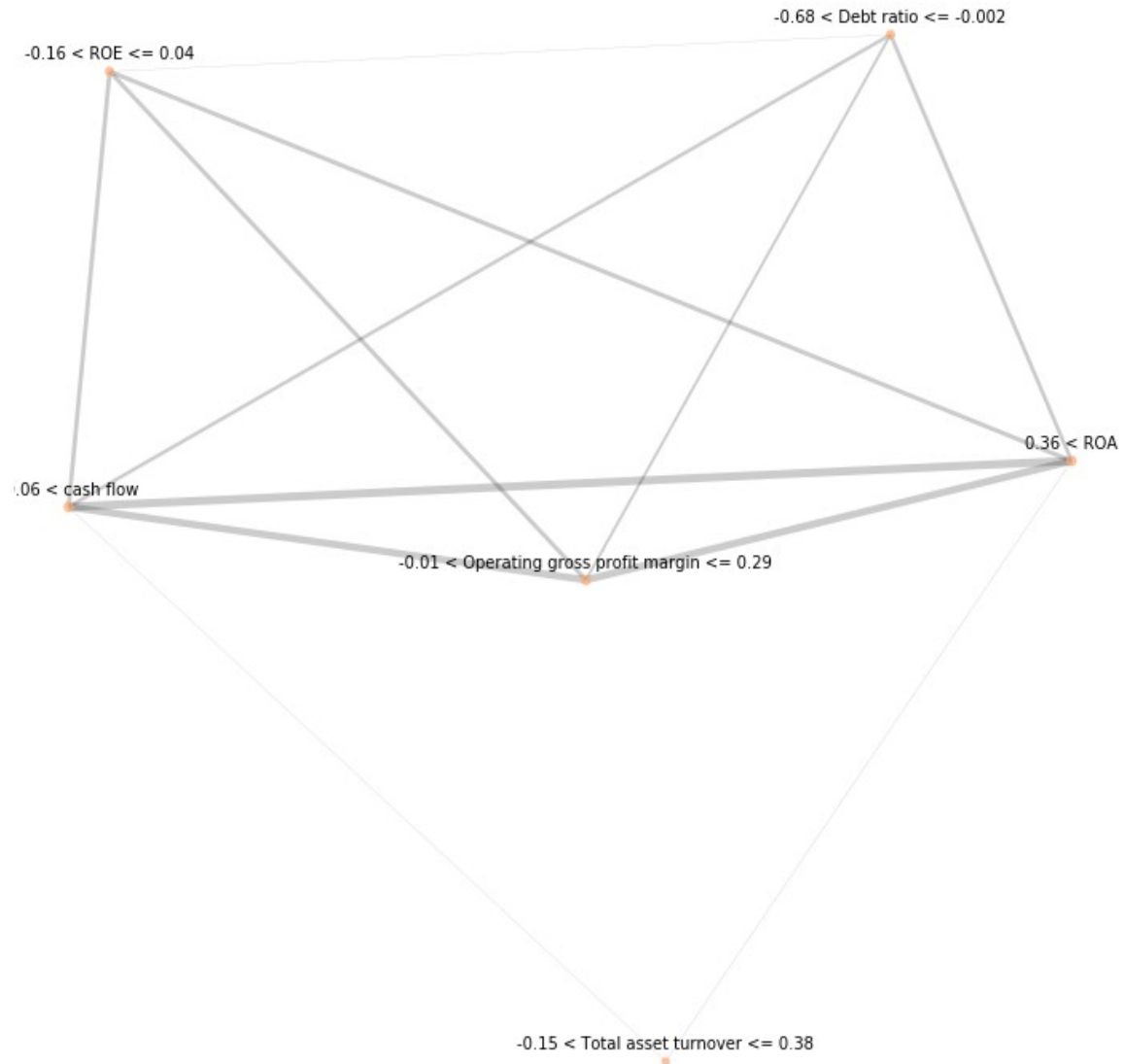
A matrix



A matrix



A matrix





THANK YOU

謝謝各位的耐心聆聽♥

